The Impacts of Social Class and Gender on Elite Doctoral School Access Equality in China: A Theoretical Framework Linking Sen and Bourdieu, with A Case Study of The Economics Discipline

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I, Xiaoyu Wen confirm that the work presented in my thesis is my own. Where information has been derived from other sources, I confirm that this had been indicated in the thesis.

ABSTRACT

The purpose of this study is to investigate the impacts of social class and gender on elite doctoral school access equality in China. Noticing that current literature on school access concentrates either on normative evaluation or practical explanations of equality, I put forward a theoretical framework combining Sen's Capability Approach (CA) with Bourdieu's social reproduction theory to bridge the gap. The theoretical framework suggests that capability should be the metric to measure elite doctoral school access equality, and we need a context-specific capability list to put this metric into practice. In addition, when utilising the capability list, we should look not at the distribution of capabilities but their development, whose achievement requires relevant resources and chances to convert them.

Guided by the theoretical framework, I conducted a case study involving China's four most elite economics doctoral schools. A list of five basic capabilities was first generated through document analysis, focus group discussion and literature review. These capabilities were used as the metric to measure social class and gender equality regarding elite economics doctoral school access in China. Then, twenty-two doctoral students and eight supervisors were interviewed to comprehend how social class and gender shape students' experiences of developing identified capabilities. Bourdieu's notions of capital, habitus, and fields and Sen's concept of agency were applied to interpret the collected data.

Evidence from this study demonstrates that disadvantaged doctoral students face not only a shortage of resources but also a shortage of opportunities to convert resources into relevant capabilities due to their social class and gender backgrounds. Their access to elite doctoral schools requires additional support from the agency. Although they could also be a successful doctoral applicant, compared to their counterparts, behind the seemingly similar success lies more unpleasant experiences and formidable difficulties.

IMPACT STATEMENT

This thesis was initialled by my concern about social class and gender inequalities in China's PhD admission, which was both under-researched and under-theorised. Recent years have witnessed a rapid increase in PhD enrolments in China. However, such a gratifying expansion was accompanied by the deepening of social class and gender stratification and the emergence of new types of inequality. Therefore, this study aims to remind more people that we should not be immersed in self-satisfaction; the doctoral education system in China, particularly regarding enrolment, is still highly unequal and far from benign.

This study explored equality from an emerging perspective. Instead of paying attention to the issue of who has the opportunity to be enrolled, I analysed how different students experience their enrolment differently. It is not that the former is unimportant but that the latter is more likely to be overlooked. I found that even behind the seemingly similar doctoral enrolment lies different stories. Students' experiences were significantly shaped by their social class and gender backgrounds. Some of them went through more hardships to achieve the same success as others. This phenomenon deserves attention, especially in the process of formulating or revising relevant regulations and policies.

To interpret school access equality in a normative and profound way, I developed a theoretical framework combining Sen and Bourdieu. I first analysed the drawbacks of the prevailing metrics in the current literature and proposed that we could instead use the capability as a metric to measure school access equality. After clarifying the metric, I proposed a method to implement it: generate a context-specific and purpose-driven capability list. Finally, I explained how we could comprehend people's different experiences in developing identified capabilities through Bourdieu's notion of capital, habitus and fields and Sen's concept of agency. Both the unequal distribution of resources and the unequal conversion of resources into capabilities between different

groups of people were emphasised. The Sen-Bourdieu theoretical framework combined the normative evaluation with the practical explanation. In addition to this study, it can be used in other research and deliberation on educational equality.

This thesis proposed a capability list related to students' elite doctoral school access in China. Although I utilised the proposed capability list to examine related social class and gender inequalities, it is preliminary and indefinite and needs further revision based on broader public deliberation. In the meantime, I argue that more capability lists in other contexts with focuses on other issues should be raised. I expect this study to provide an example of generating and utilising the capability list and encourage more attention and efforts in the future in a broader range of fields.

Finally, this study brought to life the diverse experiences and voices of students with different social and gender backgrounds. I hope that my description and investigation of the enrolment experiences of these students, especially non-traditional students, could help more people understand China's doctoral enrolment system and the characteristics brought about by its unique culture.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

Asia-Europe Meeting: ASEM

Capability Approach: CA

Central University of Finance and Economics: CUFE

China Centre for Economic Research: CCER

China Statistical Yearbook: CSY

Chinese Academy of Social Sciences: CASS

Chinese Ministry of Education: CME

College English Test: CET

College Entrance Examination: CEE

Committee on the Status of Women in the Economics Profession: CSWEP

Curriculum Vitae: CV

Doctoral School of Economics: DSOE

Fudan University: FDU

Grade-Point Average: GPA

Gross Domestic Product: GDP

Gross National Product: GNP

Higher Education Institutions: HEI

Intelligence Quotient: IQ

Ministry of Education: MOE

National Bureau of Statistics of China: NBSC

National Discipline Evaluation: NDE

Organisation for Economic Co-operation and Development: OECD

Peking University: PKU

People's Republic of China: PRC

Renmin University: RMU

Research and Development: R&D

Science Citation Index: SCI

Science, Technology, Engineering and Mathematics: STEM

Single case study-individual doctoral schools Dilemma: SID

United Nations: UN

INTRODUCTION

My interest in the topic of school access equality stems from my undergraduate period. In a course presentation, a classmate of mine mentioned, 'You will never know how much effort I have put in before I have the opportunity to sit with you and take this class together.' This sentence lingered in my mind for a long time. The girl who said this sentence has been working hard beyond the typical efforts of other people on the course during the whole undergraduate period. Finally, she was admitted directly to an elite doctoral school with excellent grades, without a master's degree required. At the graduation dinner, she said: 'I hate the injustice of society, which makes my life a lot more complicated than others. But I am also grateful to this society; at least through my efforts, I have won the right to change my life.' It was such a society that she loved and hated at the same time, which attracted my interest in studying it in depth.

Compared with the Global North, contemporary Chinese society is a dynamic transitional society, which means people within it have more opportunities to improve their social status and live better lives. One of the most crucial ways to achieve such class improvements is education. Doctoral education, the highest level of education in China, has naturally become the key to analysing Chinese society, especially issues related to social stratification and social mobility. By understanding inequalities relevant to doctoral admissions, we can further comprehend how opportunities for class advancement are distributed unequally in today's China.

When it comes to doctoral admissions, what people talk about most is the rapid expansion of the Chinese doctoral system in recent years. An increasing number of Chinese people today have the opportunity to receive doctoral education and improve their social status accordingly. However, I believe that the facts are far less optimistic than many people imagine. On the one hand, most doctoral students have privileged backgrounds regarding their social class and gender. We have more middle-class male

doctoral students than working-class female ones. On the other hand, students who had entered the most elite doctoral schools might have had completely different experiences. Some succeeded so effortlessly that the top doctoral schools seemed like something specially designed for them, while others needed to overcome more challenges to win similar entry tickets. I went on in this study to question the second phenomenon mentioned above: the growing inequalities in students' elite doctoral school access experiences. I want to show in this thesis how students with different social and gender backgrounds experienced their access to elite doctoral schools differently. The results of this study indicated that China's expanded doctoral education system was accompanied by a deepening of social class and gender stratification and new forms of inequality.

So the main aim of this thesis is to address successful elite doctoral school applicants' different experiences regarding their access and the role social class and gender played in shaping such differences. Sometimes behind the seemingly similar success lies different stories, and these differences are the key to our exploration and eradication of inequalities. China's doctoral education system has grown recently, giving more people opportunities for realising upward social mobility. However, we should always pay serious attention to the fact that such an expanded system is still far from equal regarding students' access.

My secondary aim is to generate a theoretical framework combining Sen's CA with Bourdieu's social reproduction theory. Noticing that most of the current literature concentrated either on normative evaluation or practical explanation of school access equality, I intended to put forward a theoretical framework that could bridge the gap. I first justified the feasibility and necessity of utilising capacity as a metric to measure school access equality. Then, to put the metric into practice, I argued that we should put forward a context-specific and purpose-driven capability list. Finally, I explained how Bourdieu's notions of capital, habitus, and fields and Sen's concept of agency could contribute to

comprehending the development of identified capabilities. Not only the distribution of resources but also the conversion of resources into capabilities was stressed during the process.

Finally, inspired by the theoretical framework, this study brings to life the voices and experiences of doctoral students with different social and gender backgrounds. I aim to show how different students experienced their access to elite doctoral schools differently. Some of them had overcome more difficulties than others to achieve similar success. Through different stories, we could have a deeper comprehension of China's doctoral admissions system and the possible ways to improve it.

In particular, this thesis's deliberate focus on Chinese culture and students' experiences and perceptions relevant to it allows for an in-depth engagement with the issues around how Chinese society and doctoral education systems work in their unique ways. Culture can help us understand many phenomena that cannot be explained from an institutional perspective. I argue that promoting doctoral enrolment equality is not as simple as formulating a fair admission system. It is also crucial to break the restrictions imposed by culture and tradition on some groups of people.

The thesis is organised into eight chapters, which consist of the following:

Chapter one sets the scene for this study. I first point out that, as a transitional society, contemporary Chinese society is full of vigour and vitality. Doctoral education, being one of the most important ways for people living within it to achieve upward social mobility, deserves in-depth investigation. Then, I examine the recent history and demography of doctoral education in China, emphasising that although the whole system has expanded a lot, it is still filled with social class and gender inequalities regarding admission, making this research possible and necessary. Finally, some background information related to the education system and doctoral admission in China is provided, so the readers can better place the contents of this thesis into real context.

Chapter two presents the literature review, which indicates that current literature concentrates on either normative evaluations or practical explanations of equality in school access. Four dominant metrics were utilised for the first group of literature: admission system and policy, participation data, resource distribution, and human relations. While the second group of studies usually focus on three perspectives: students' perception and experience, other people's perception and experience, and structure. In this chapter, I first discuss the characteristics and potential limitations of the above-mentioned metrics of measurement and perspectives of analysis. Then, studies making other choices to adopt Sen's CA for normative evaluation or Bourdieu's social reproduction theory for practical explanation are further examined. Finally, I identify an emerging trend of combining Sen with Bourdieu. Relevant studies, although highly limited, are investigated.

Chapter three then sets out the theoretical framework combining Sen's CA with Bourdieu's social reproduction theory, which could bridge the gap between normative evaluation and practical explanation of school access equality mentioned in the previous chapter. The first part of the chapter examines Sen's concept of capability and the necessity and feasibility of it to measure school access equality. The chapter's second part explains how we could put the metric of capability into practice, which is to generate a context-specific capability list through Robeyns' procedure approach. Then, I demonstrate how Bourdieu's notions of capital, habitus, and fields and Sen's concept of agency could be combined to comprehend people's different experiences related to the development of identified capabilities. Two main research questions are finally put forward based on the theoretical framework: What are the basic capabilities for students' elite doctoral school access in China? How do social class and gender impact students' development of basic capabilities?

The fourth chapter examines the genre, methodology, and method of the empirical part of this study. The first part of the chapter presents why I consider the most elite doctoral schools of economics in China as a single case on which this study is based and how the four most elite economic doctoral schools were selected. The second part of the chapter discusses my philosophical stance and position and the research object when the empirical part of this study is carried out. Finally, the methods used to collect, process, and discuss different types of empirical data, including documents, focus group discussions, interviews, and literature data, are explained.

The fifth chapter first presents the findings related to the first research question: what are the basic capabilities for students' elite doctoral school access in China? Based on the data collected through document analysis and focus group discussion, five basic capabilities are selected to form a capability list: capability to aspire, capability to be respected, capability to establish guanxi, capability to obtain information, and capability to acquire knowledge and competency. In the second part of this chapter, I compare the capability list generated for this study with other capability lists to make further discussions and revisions.

Chapter six moves on to talk about the findings related to the second research question: how do social class and gender impact students' development of basic capabilities? Twenty-two factors relevant to social class and gender and the development of five capabilities identified in the previous chapter are presented. This chapter vividly shows the readers different stories behind the seemingly similar successful elite doctoral school access. In general, there are two key findings in chapter six: First, regarding social stratification, not only the unequal distribution of resources but also the unequal conversion of resources into relevant capabilities contribute. Second, with the agency's help, some socially- or gender-disadvantaged people can break the structural constraints and change their lives, generating power for realising social mobility.

In chapter seven, I further discuss the findings presented in the last chapter. On the one hand, through the lens of Bourdieu's notions of capital, habitus, and fields, the processes through which social class and gender shape students' development of basic capabilities are analysed, illustrating the fact that structure may place constraints on disadvantaged students to hinder their success. On the other hand, with the help of Sen's concept of agency, why and how disadvantaged students could overcome structural limitations and win elite doctoral school access are demonstrated. The two perspectives explain why non-traditional students can also get similar elite doctoral school access as their privileged counterparts in real life. However, the process is often more complicated and challenging.

Finally, chapter eight provides a concise overview of the thesis as a whole, re-articulating the classed and gendered nature of elite doctoral school access in China and the fact that behind the seemingly similar successful admission results may lie unequal experiences between different groups of students. I discuss the implications of this study for the field of sociology and higher education and for the future direction of policy. Furthermore, some potential limitations of this study and future possible research ideas are pointed out to inspire more researchers with similar interests.

I. SETTING THE SCENE

This chapter sets the scene for the thesis. I will first discuss the close relationship between elite doctoral school access and upward social mobility in contemporary China's transitional society to illustrate why the topic of this study is important and deserves to be explored. Then, I will present the demography of doctoral education in China, emphasising that although the number of doctoral students has increased dramatically in recent years, there still exist social class and gender inequalities between them. Finally, some information about the context of this study will be provided, including China's education system, doctoral programmes, and financial subsidies for PhD students.

1.1 Why choose elite doctoral school access equality in China

This section first explains why the topic of elite doctoral school access equality is crucial. Unlike the Global North, the society in China is fluid and dynamic. People living within it have more chances to realise upward social mobility. One of the most important ways to achieve this is education. As the highest level of education in China, doctoral education is a critical method for Chinese people to improve their social status and live a better life. Therefore, the issue of its admission equality is worth exploring.

1.1.1 The changes of social structure in China

Before establishing the People's Republic of China, there were seven social classes in China identified by Mao in 1926 (see **Table 1.1** below). However, the establishment of the PRC changed the original economic system through measures such as the confiscation of bureaucratic capital. The government confiscated 2,858 industrial enterprises, more than 2,400 banks, more than 30 transportation companies, and over ten monopoly trading companies. Until the end of 1949, 70.9% of industrial assets were owned by the state. Later, in 1956, the government further announced that the land was owned by the

public (Lu, 2010). Consequently, the social structure composed of seven social classes was broken.

Table 1.1. The changes of social structure in China

Before the establishment of PRC	After the establishment of PRC	
	Mao period (Politically motivated; People-oriented; Simple)	**Reform and opening up period** (Economic motivation; Socially autonomous change; Diverse and complex)
Landlord class and comprador class	Peasant class	Party and government officials
National bourgeoisie	Working class	Manager of enterprises
Petty bourgeoisie	Cadre and intellectual stratum	Private entrepreneurs
Semi-proletariat		Professionals and technocrats
Proletariat		Clerical people
Nomadic proletariat stratum		Household business
Peasant class		Service staff
		Industrial workers
		Peasant
		Jobless or unemployed or semi-unemployed person
Source: Lu (2010)		

The development of the People's Republic of China can be divided into two periods: the Mao period (1949–1977) and the 'reform and opening up' period (1978–present) (Li and Li, 2010). During the Mao period, China was strongly influenced by Marxist economics, which stressed the substitution of administration for markets. Hence, China experienced 'an increased expansion of central government and the implementation of the socialist redistributive system', which prioritised the establishment of a planned economy in order to realise an ambitious industrialisation programme (Whyte and Parish, 1984: 65). The communist government centralised its power for resource allocation and diminished the effect of the class system through a process of collectivisation and nationalisation in order to realise egalitarianism (Sheng, 2018). As a result, private ownership of productive assets was gradually eliminated, with a 'rigid hierarchy in terms of social status' growing

out (Sheng, 2018: 7). Because the economic gaps between people were small and the economic stratification was maintained minimal, political (party membership) and administrative standards (rural-urban divide, cadre-worker dichotomy) were 'the main criterion for job allocation and resource distribution' (Lu, 2010: 84).

The term' political standard' refers to the division of people based on their family background, political status, and political views. This kind of social stratification dominated by political factors was based on the theory of class struggle proposed by Marx. The rural-urban divide was kept through hukou, a rigid household registration system that limited the actions of all Chinese to their hometown for their whole lives (Bian, 2002). Under such circumstances, peasants were unable to enjoy any urban benefits, including but not limited to compulsory education, public housing, and health care. Only a tiny minority of people born in rural areas could move to the cities and live a better quality of life 'through higher education and subsequent job assignments' (Sheng, 2018: 7). The cadre in the cadre-worker dichotomy usually means a small number of highly prestigious professional and managerial jobs. In Mao's era, the cadre was provided with highly above-average compensation and was likely to be promoted as government leaders. These benefits were out of reach for the workers.

The government in the Mao era tried its best to promote income levelling and reduce conspicuous consumption within work units. As a result, the social structure during that period was relatively simple and composed merely of working-class in the urban areas, peasant-class in the rural areas, which accounted for most of the total population in China (82.45% in 1977), and cadre and intellectual stratum, which included workers in the state-owned enterprises, intellectuals and government officials and lived mainly in the urban areas (Li, 2000).

China entered the period of 'reform and opening up' in 1978, during which China changed its focus from 'class struggle' to 'economic development'. Meanwhile, the notion of the

socialist market economy was introduced, whereby 'China was to remain a socialist state, but was increasingly shaped by market forces' (Sheng, 2018: 7). Under the guidance of the new leader, Deng Xiaoping, at that time, the Chinese government emphasised 'de-collectivising and co-modifying both rural and urban economies' (Bian, 2002: 92). This situation was sharply different from Mao's ideology of abolishing markets. Such post-Mao reform started in rural areas in 1978 and extended to urban areas around a decade later (Wang and Zhou, 1994).

The reform and opening up eroded the previous redistributive state and introduced market mechanisms for resource allocation. As a result, China has transferred from a traditional agricultural society to a modern industrial society (Lu, 2012). These two transformations have involved radical changes in the Chinese social structure (Sheng, 2018). The expansion of vocational variation, income gap and private asset ownership has given birth to new social groups and adjusted their positions and relationships. For instance, Mao's protected working-class had been officially and politically recognised as a 'leading class' previously (Zhang, 2000: 30). However, after the market-oriented reforms, their lifelong employment expectations were broken, and the superior position in the redistribution system gradually declined. After the unmaking-remaking processes, they were differentiated into migrant peasant labour, lay-off labour without a permanent job, wage labour work for private companies and unprotected labour in the state sector (Liu, 2009; Burawoy, 2000). These changes led to a decrease in their social status and an increase in their number (Sheng, 2018). Adversely, the social status of intellectuals and technocrats has been empowered to become the highly prestigious professional elite. The influx of peasants to cities has enhanced household business to become a new fraction of the working class (Mccaskey, 1991). Managerial cadres and private entrepreneurs have become the central players in the rising market economies, constituting the emerging new middle class (Li, 2000; So, 2011). Gradually, a relatively steady order of different social

groups has been established. While still fluid and evolving, the Chinese social structure has preliminarily been constructed (Lu, 2012).

Due to the characteristics of being fluid and unstable, contemporary society in China is defined as a transitional society with the existence of both social stratification and social mobility (Bian, 2002; Sheng, 2018). The market-oriented reforms eliminated the previous egalitarian structure and resulted in new forms of inequalities in China. In rural areas, the gaps between different social classes have been rising except for a slight decline in the initial stage. As for the urban areas, such differences, which were more significant, were also constantly increasing. Chinese society is stratified in this way. Meanwhile, as a transitional society, social mobility in China is more active than in other highly stratified societies like the USA and the UK. Chinese society now has more channels for class ascent (Lu, 2010). Yang (2003) further described that the social structure in today's China is in a dynamic balance. To maintain this kind of balance, the competitions for advantaged social positions are more intense. One of the most crucial factors that impact these competitions is people's educational achievements (Collins, 2000; Sheng, 2018).

1.1.2 Elite doctoral school access and upward social mobility in China

Historically, education has been highly valued due to its close connection with social mobility in China. Since Tang Dynasty (618–907), the ruling class has utilised the competitive examination system to select talented people and officials for the country (Ho, 1962). This tradition continues to the present. In today's China, the variations in school attainment are closely connected to social mobility and students' social status after graduation (Guo and Guo, 2016). Education level and academic background could predict a person's income and social position after graduation (Li and Gustafsson, 2012; Goodman, 2018). The average annual income of PhD students was around ¥2000 higher than that of master's students and ¥4000 higher than that of bachelor's students in 2017

(CNBS, China's National Bureau of Statistics, 2018; see **Figure 1.1** below). Students from world-class universities in Project 985[1] have around ¥1000 higher average income than those from national-level universities in Project 211[2] and ¥3000 higher than ordinary universities[3]. Moreover, PhD degree holders are attractive in the Chinese labour market and have a high employment rate, even during the recent economic downturn and Covid-19 pandemic. Hence, doctoral education, particularly elite doctoral education, is closely related to upward social mobility in China.

Figure 1.1. Average annual income of different types of students in China (2017)
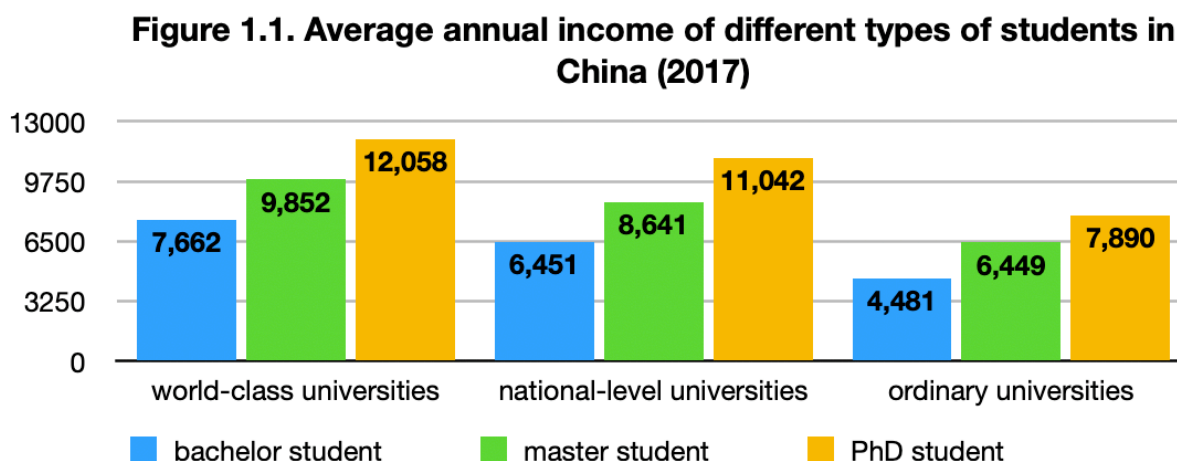
Source: CNBS 2018

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[1] Project 985 is a project aimed to increasing the development speed and gaining more reputation for China's universities. The 985 project was announced by Chinese President Jiang Zemin at the 100th anniversary of Peking University in 1998. Through the 985 project, China demonstrated its ambitions to build world-class universities in the 21st century. 985 project involves both national and local governments allocating large amounts of funding to certain universities to build new facilitates such as research centres, hold international conferences, attract world-renowned visiting scholars, and help Chinese students to attend conferences abroad.

[2] Project 211 is the Chinese government's new endeavour aimed at strengthening about 100 institutions of higher education and key disciplinary areas as a national priority for the 21st century. There are 112 universities in Project 211. Presently, Project 211 universities in China train one-third of undergraduates and four-fifths of doctoral students.

[3] Currently, there are about 2047 universities (not including universities in 211 and 985 project) in China. Ordinary universities can be divided into several categories such as general university, technical university, specialised university such as medical, foreign language and teacher-training university.

Figure 1.2. PhD graduates' employment status in China from 2007 to 2017
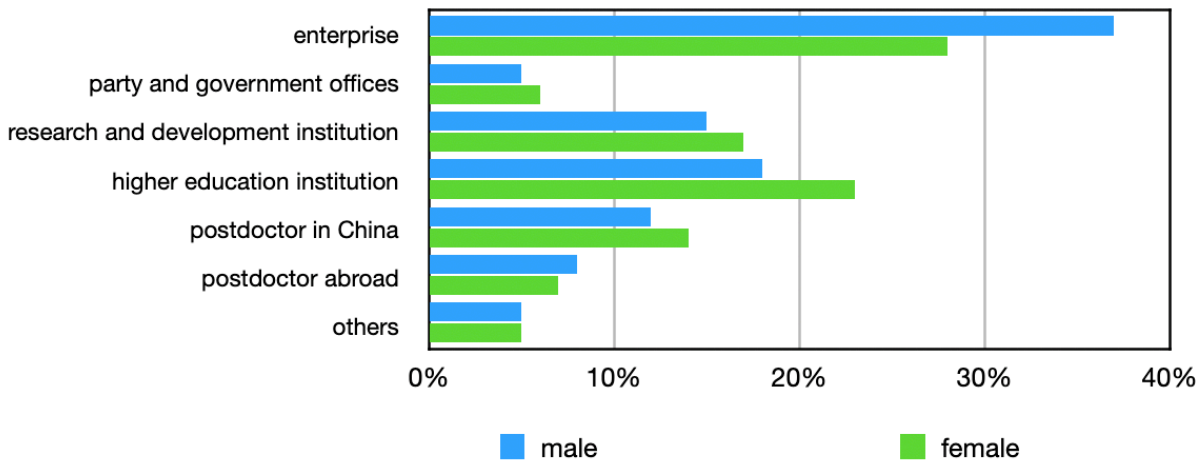
Source: CNBS 2018

Apart from higher average salary, PhD students also have advantages in prestige, non-cash income and opportunities for career advancement in China. In contemporary China, the meaning of the doctorate has changed from merely discipline-based research that would license graduates to be 'stewards of the discipline' and able to generate, conserve and transform their disciplines to a training period for future leaders and elites from all walks of life to facilitate innovation, scientific research and economic growth (Park, 2005: 25). Apart from obtaining the PhD qualification, doctoral education also enables students to develop a set of transferable skills along the way. Hence, doctoral education plays a pivotal role in cultivating the talents needed in both academic and industrial settings. The National Postgraduate Conference held in Beijing in July 2020 further confirmed this characteristic of doctoral education. The conference clarified China's high-level talent training strategies to stabilise master education and further expand doctoral education within the next decade. In the future, the task of cultivating high-level leaders will be mainly undertaken by doctoral education, while postgraduate education will take charge of cultivating application-oriented talents. Admittedly, most doctoral graduates had become researchers who devoted themselves to exploring unknown areas and pushing back the frontiers of knowledge. However, some of them had chosen to work outside academia and became leaders in their fields. It is easier for doctoral degree holders to

enter top-ranked organisations which provide satisfactory working conditions, high social status, generous benefits and, as a result, a better quality of life (Bian and Huang, 2015). From 2007 to 2017, nearly half of PhD graduates in China work outside academia such as enterprise and party and government offices (CNBS, 2018, see **Figure 1.2** above).

Meanwhile, given that doctorate holders could help improve the competitiveness and make economies more innovative, major cities in China made efforts to attract and retain them with incentives. As a result, generous supports for PhD graduates who come to settle down were provided, including but not limited to help with household registration[4], provide housing subsidies (or directly allocate housing), provide research start-up funds, provide social allowances, and help solve the problems related to spouse's work and children's education. For instance, in Shanghai, PhD holders' spouses and children could also apply to work and study there and enjoy Shanghai's social welfare. Also, the government provides up to ¥2,000,000 to subsidise PhD holders' work and life. In Shenzhen, a one-time payment of ¥3,000 moving fee is given to PhD graduates. They could also apply to purchase the house with prices that are far below market prices. Apart from living benefits, doctorate holders were also provided with career supports. If they choose to work for the government, they will be at the senior staff level at the time of entry.

The facts described above illustrate that PhD education is a crucial factor in social mobility in contemporary China. Acquiring a doctorate in an elite university can be a helpful ladder to higher salaries, increased occupational status and better quality of life. In contemporary China, human development is a multidimensional concept, including various aspects. As one of the essential aspects, education, particularly doctoral education, extends far beyond the economy to eradicate poverty, boost shared

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[4] The household registration system of the People's Republic of China (PRC) is a population management system implemented by the government for citizens who settled in mainland China, based on households. Household registration shows the legality of a natural person's life in a particular place.

prosperity, and drive sustainable development. Apart from achieving knowledge-based development and thriving human progress, the most significant role of doctoral education is to reduce inequality and promote social justice (Zhu 2010). Because knowledge is power, and education empowers. It enables students to break from the cycle of disadvantage, transform lives and improve socio-economic status (Duncan 2012; UNESCO 2017). In a fair society, people should be given equal opportunities to improve their social positions through education. 'Fairness is about social mobility' (Great Britain Government 2011: 11). The higher the level of educational attainment, the more likely it is that people can determine their own destiny and improve their social status.

Higher education, particularly doctoral education, is closely related to a better quality of life and upward social mobility and how it may advance social equality is a valuable theme for detailed discussion. At the heart of this discussion is the topic of equal access, which is 'the cornerstone of transformative education agenda' (UNESCO 2017: 7) among policymakers, practitioners and researchers (Williams 1997; Collins and Buasuwan 2017; Fleming et al. 2017). However, since the reform and opening up, the Chinese government has adopted a strategy that caused a substantial imbalance in the economic field, resulting in inequalities in the distribution of educational opportunities. Consequently, in recent years, the phenomenon of 'school selection by socially advantaged students' is becoming more and more common (Rong and Shi, 2001: 124). Meanwhile, it is also much more difficult for female students to have access to elite doctoral schools. It is against these facts concerning social class, gender and school access that this research has been conducted.

1.2 The changing demographics of doctoral education in China

This section presents the demography of doctoral education in China. Two main characteristics are discussed: first, that doctoral education in China has expanded rapidly

in recent years; and second, that despite this welcoming expansion, there still exist severe social class and gender inequalities.

1.2.1 Expansion of doctoral education in China

Higher education is rapidly increasing in China. In 2010, merely 9% of the Chinese adults aged between 25-34 year-olds held a higher education degree. In 2018, that percentage increased to 18%. However, it is still much lower than the OECD average, which was more than 40% (OECD, 2019). In addition, the percentage of doctoral students among all college students in China had declined in recent years, decreasing from 4.00% in 2010 to 1.03% in 2016 (CNBS, 2017). It seems that the growth of doctoral education is not as rapid as other levels of higher education. It is the preserve of a tiny exemplary elite in China.

Doctoral education in China had a relatively late start. The earliest doctorate in the world can be traced back to America (Ampaw and Jaeger, 2012). In 1701, Yale University awarded the first PhD, which stresses that higher education institutions (HEI) should combine teaching with research. In contrast, the beginning of doctoral education in China was around 280 years later. In 1980, the 5th National People's Congress approved the first education law of New China called the Regulations of the PRC on Academic Degrees. According to the regulation, only institutions authorised by the State Council could award the doctorate. In 1980, five institutions were selected to be the first group of pilot units for doctoral education, with eighteen PhD students being admitted for the first time. Later, in 1981, 151 institutions were qualified to grant doctoral degrees (CNBS, 2018). Until 2018, after 12 times Degree Authorisation audits, the number has increased to 401 (CNBS, 2018). These institutions were unevenly distributed among provinces and municipalities. In terms of the GDP, Beijing and Shanxi Province had the highest density of doctoral institutions (Chinese Academy of Social Sciences, CASS, 2010). In terms of

the total population, Beijing and Shanghai had the highest density (see **Figure 1.3** below). However, the elite doctoral schools are only distributed in municipalities such as Beijing and Shanghai and regional capitals like Hangzhou and Wuhan.

Figure 1.3. Distribution of doctoral institutions in China (2010)

- Number of doctoral institutions per 100 billion GDP
- Number of doctoral institutions per tens of millions of people
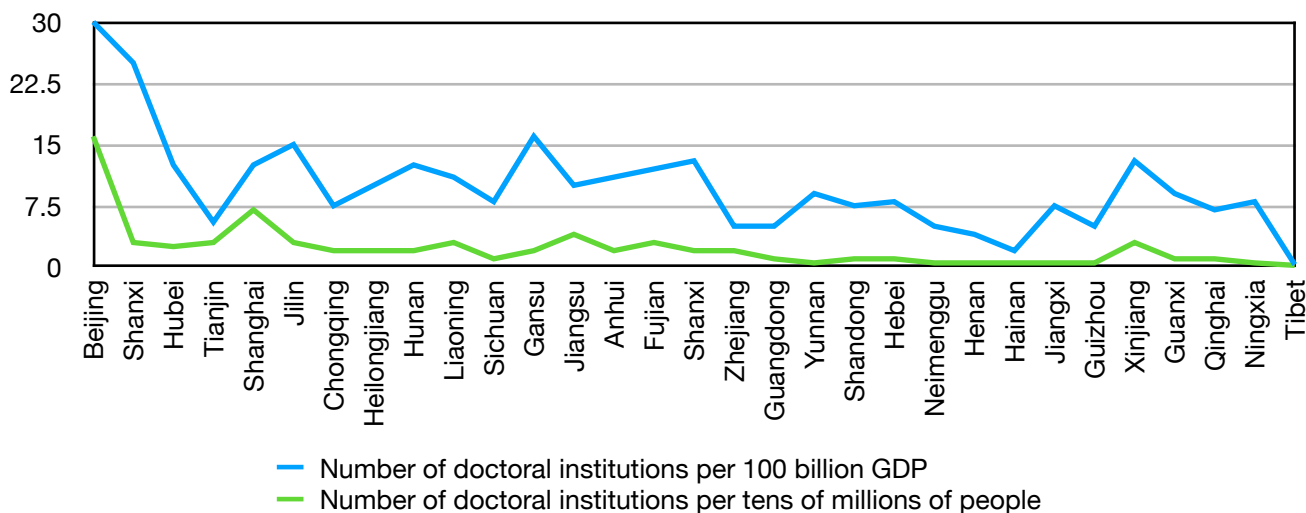
Source: CASS, 2010

In the early stages of the development of doctoral education in China, the supervisors were uniformly approved by the national government. This method lasted for 13 years. From 1981 to 1994, a total of 8043 supervisors were approved. However, with the expansion of doctoral education, since 1995, the approval of supervisors has been charged by the doctoral institutions. Since then, PhD supervisors have increased dramatically, from around 12 thousand in 1997 to around 110 thousand in 2018 (NBSC, 2019). Nevertheless, the distribution of supervisors was also uneven. According to the Wu Shu-lian report, in 2004, 58.92% of supervisors came from world-class universities in Project 985.

Regarding the sheer numbers of PhD graduates, an obvious growth of 8% was witnessed worldwide from 2013 to 2017 across OECD countries, reaching 276,800 in 2017. During the same period, the increase in terms of PhD graduates was 8.4% in China, which was slightly higher than average, achieving 58,000 in 2017 (see **Figure 1.4** below; NBSC, 2020). Although the number was still slightly behind the United States (around 71,000 in

2017), which was the top supplier of PhD graduates among OECD countries, it was far higher than that of the United Kingdom and Germany, which ranked in the following places (around 28,000 each in 2017; OECD, 2020). Furthermore, although with a relatively late start, the expansion of doctoral education in China was fast during the early stage. It took the United States 100 years (1861-1961) to increase the number of PhD graduates to 10,000, while to reach the same number, it only took 17 years (1982-1999) for China.

Figure 1.4. Number of PhD graduates in China (1982-2019)
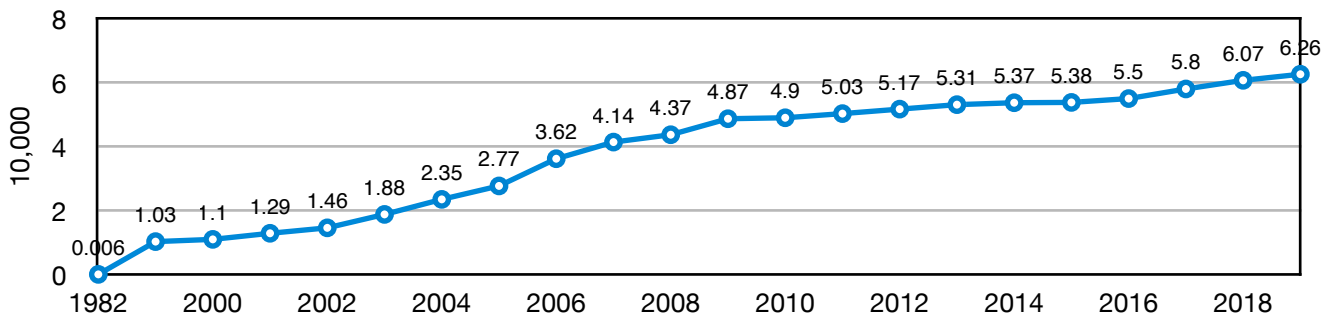
Source: NBSC, 2020

The extensive research and development (R&D) input facilitated the expansion of doctoral education in China. In 2015, spending on higher education R&D represented 0.5% of Gross Domestic Product (GDP) on average across OECD countries (OECD, 2018). However, that percentage exceeded 0.6% in China. Furthermore, while the higher education R&D input largely came from the public sector in OECD countries, China could also raise money from the private sector. In 2015, 19.2% of overall R&D input in China came from the private sector, higher than Germany (14%) and Korea (13%), which also had outstanding performances in this aspect. The large proportion of R&D input from the private sector illustrates that Chinese enterprises were willing to engage and invest in academia, which provided doctoral graduates with a large number of research career opportunities beyond academia. This fact attracts more talented students to pursue a doctoral degree and, as a result, expands the doctoral education in China.

Despite the growing number of PhD students, the proportion of doctorate holders was low both in China and worldwide. Globally, in 2018, only 1.1% of people aged between 25

and 64 had a PhD degree on average across Organisation for Economic Co-operation and Development (OECD) countries. Although, from **Figure 1.5** below, we could quickly notice that the share of doctorate holders varies significantly across countries, from more than 3% in Slovenia and Switzerland to less than 0.1 in Mexico, Indonesia and China (OECD, 2018; National Bureau of Statistics of China; NBSC, 2018). The proportion of adults who have been honoured with a doctoral degree in China was far behind that of most OECD countries. In 2010, PhD constituted 0.0048% of China's total population, while the same year in the US, the rate was 0.016% (CNBS, 2016). It seems that doctoral education, especially elite doctoral education, is still scarce in contemporary China.

Figure 1.5. Share of doctorate holders between 25 and 64 in 2018
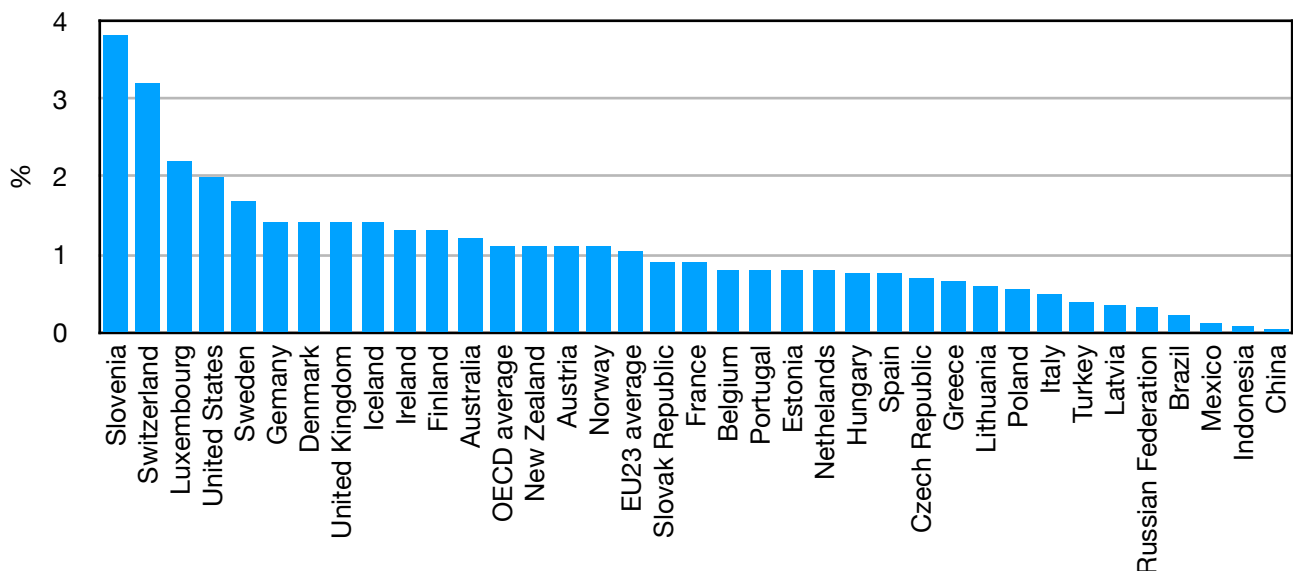
Source: OECD, NBSC, 2018

In 2018, around 60% of PhD entrants were aged under 37 across the OECD countries. Although that percentage had decreased dramatically in China, it is still higher than average, which means PhD opportunities were more likely to be distributed to younger applicants (see **Table 1.2** below). Research conducted at Peking University in 2018 surprisingly revealed that the average age for master entrants was 26.5, while for doctoral entrants was 24.5. The study found that this abnormal phenomenon was mainly caused by the fact that 50.2% of doctoral entrants were bachelor straight to doctorate students.

Meanwhile, a large proportion (22%) of the master entrants were part-time students who had worked first to gain experience related to industry or sector, which benefited both their master application and research.

Table 1.2. The age composition of PhD entrants in China

	under 37	over 37 (including 37)
1996	84.9%	15.1%
2000	74.9%	25.1%
2004	67.9%	32.1%
2008	68.2%	31.8%
2012	66.5%	33.5%
2018	67.1%	32.9%
Source: China Doctoral Education Report (2018)		

1.2.2 The existing social class and gender inequalities

It was identified by Egerton and Halsey (1993) that over the last century, there were three main characteristics regarding higher education access in the UK. Firstly, higher education access has increased significantly. Secondly, gender inequality has reduced, and thirdly, there has been no decrease in social class inequality. These characteristics are also in line with the PhD access in China since its appearance in 1980 to the present. As was previously discussed, globally, the number of doctoral degree holders was on the rise, increasing by around 8% across OECD countries from 2013 to 2017, especially in countries like China, Mexico and the United States (OECD, 2017). However, behind the seemingly considerable expansion lies social class and gender inequality. For instance, while the percentage of women has overtaken that of men at the undergraduate and master levels, women are still under-represented at the PhD level worldwide (OECD, 2019). Furthermore, if we take a closer look at what type of institution and which subject area male and female students participant in, we could easily recognise that gender inequality still persists (Thomas 1990; Berggren 2006; Reay et al. 2009; Okoli 2011; Hook

2016). Besides, studies found that students' chances of participating in higher education are higher with advantaged social backgrounds (Sheng, 2014; Atherton et al., 2016). Their experience of higher education access is also significantly shaped by social class (Metcalf 1997; Sheng 2014; Stich 2014; Billingham 2018). Doctoral school access, especially elite doctoral school access, is still exceptionally unequal regarding social class and gender, 'as apparently intractable as it is morally critical' (Holsinger and Jacob 2009: 23). Such a picture supports the necessity to deepen our comprehension of this issue.

Social class inequalities

Despite the expansion in the percentage and the sheer number of university students, which has enabled people from broader backgrounds to enter higher education, students with disadvantaged social class backgrounds are still under-represented in all levels of tertiary education. Furthermore, even when entering a university, most students with disadvantaged family backgrounds could only enter the less elite universities. A study of 5000 undergraduate students conducted between 2009-2013 found that among those who entered world-class universities in Project 985, around 19.5% came from the countryside, while among those who entered national-level universities in Project 211 and ordinary universities, that percentage was 31% and 32.8% respectively (Wu, 2016). Also, according to statistics from Peking University, during 1978-1998, around one-third of students at Peking University came from the countryside. However, from 2000 until now, the percentage decreased to less than 10%, compared to 62% of applicants from the countryside. From these figures, we could find that the likelihood for students with different family backgrounds to enter elite universities varied significantly, and the differences between social classes gradually widened in recent years. Moreover, even though more disadvantaged Chinese students are enrolling in universities today, they

attend different universities than their advantaged counterparts. Elite universities in China remain overwhelmingly middle-class and male in composition.

Social class was also found to have a close relationship with doctoral school access in China and many other countries. In Germany, it was noticed that students with highly educated family backgrounds had a higher probability of doing a PhD, especially when at least one of their parents had a doctoral degree (Bachsleitner et al., 2018). In the UK, it was also found that students' chances of participating in higher education are three times higher if one of their parents has a tertiary education background (Atherton et al.,2016). Furthermore, many studies further indicated that students' experience of higher education access is also significantly shaped by social class in China (Huang and Jin, 2016; Xu, 2018; Wang et al., 2021).

In China, social class inequalities in terms of doctoral school access can be witnessed. A large-scale quantitive study on Chinese PhD students conducted in 2013[5] reveals that 42.4% of parents of PhD students' highest education level are under junior high school, 30.2% are senior high school, and 26.4% are undergraduate or above (See **Table 1.3** below; CASS, 2010). This data set can be understood together with the highest education level for ordinary parents aged between 50 and 60 in 2013, showing that 71.8% are under junior high school, 16.7% are senior high school, and 11.5% are undergraduate or above (NSBC, 2013). In terms of occupational backgrounds, the research found that 42% of PhD students' parents were manual workers. By contrast, around 85% of ordinary parents aged between 50 and 60 were manual workers in 2010 (See **Table 1.4** below, CASS, 2010; CNBS, 2013). PhD parents work for enterprises, and public institutions were 22.9% in 2010, contrasting with only 3.4% of ordinary parents aged between 50 and 60 working there (CNBS, 2013). 21.5% of parents for PhD students

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[5] This research was conducted by Academic Degrees Committee of the State Council, Ministry of Education and Ministry of Personnel. It collected 69,133 valid questionnaires, which is the largest quantitive research on PhD education in China until 2018. The result of this research is published as a report by Peking University Press in Chinese.

are intellectuals, including professionals, cultural elites, and technocrats; however, only 6.2% of ordinary parents work in this type (CNBS, 2013). From the tables, we can find that it is more likely for students whose parents have high educational achievements or advantaged occupational backgrounds to have doctoral school access.

Table 1.3. PhD parents' education backgrounds (2013)

	Percentage of PhD parents in 2010	Percentage of ordinary parents aged between 50 and 60 in 2010
Highest education level: junior high school or under	40.2%	71.8%
Highest education level: senior high school	30.2%	16.7%
Highest education level: undergraduate or above	26.4%	11.5%
Source: CASS, 2010; NSBC, 2013		

Table 1.4. PhD parents' social class backgrounds (2013)

	Percentage of PhD parents in 2010	Percentage of total population among 50 and 60 in 2010
Manual worker	42.0%	85.0%
Party and government officials & manager of enterprises	22.9%	3.4%
Intellectuals	21.5%	6.2%
Source: CASS, 2010; NSBC, 2013		

Besides, the social background is also related to student's income after graduation. It was found by Wen (2005) that the more advantaged father's social status and educational backgrounds were, the higher the average starting salary the graduates were able to earn. For undergraduate graduates whose parents were with higher education degrees, the average starting salary was ¥19,884/annual in 2005, while for those whose parents were elementary education and below, the average starting salary was ¥16,800/annual in 2015. The higher salary stimulated students with advantaged family backgrounds to enter the university, which further deepened the social class inequality in China. However, while

social class inequality persists in China, gender differences in PhD access have been 'far more intractable' (Reay et al., 2005: 1).

Gender inequalities

Gender is another factor that impacts doctoral school access in China. Worldwide, female students were under-represented at the doctoral level even though they were over-represented at the master level. In 2017, women represented 47% of doctoral graduates across the OECD countries, which was 4 per cent higher than in 2005 (OECD, 2018). Gender parity[6] in doctoral school access was noticed in less than one-third of OECD countries with available data. In other countries, severe gender inequality exists and persists. In Latvia and Iceland, more than 60% of the PhD graduates were women. In contrast, in China, in recent years, while the proportion of women acquiring other types of higher education degrees such as the undergraduate degree or master's degree has continually risen until it has now overtaken that of men, PhD education is still male-dominated with male graduates representing more than 60% of PhD graduates (see **Figure 1.6; Figure 1.7** below, CNBS, 2018). However, in line with the argument of Egerton and Halsey (1993), gender inequality had gradually reduced in China, with Female PhD students in total rising from 18.5% in 1997 to 38.6% in 2017 (CNBS, 2018). Nevertheless, the overall reduction in gender inequality in doctoral school access marks significant differences and inequalities in gender participation in different subjects. If we consider the subject's impact, we could easily notice evident inequalities, where male students predominate in engineering, mathematics, and economics and female students are more likely to enter the field of social sciences, art and design.

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[6] Gender parity in doctoral school access refers to where female PhD entrants constitute between 48% and 52% of all PhD entrants.

Figure 1.6. Gender ratio of undergraduate students (2017)

Year	female student	male student
1999	39.7%	60.3%
2005	47.08%	52.92%
2010	51.5%	48.5%
2013	51.74%	48.26%
2016	52.53%	47.47%
2018	52.8%	47.2%
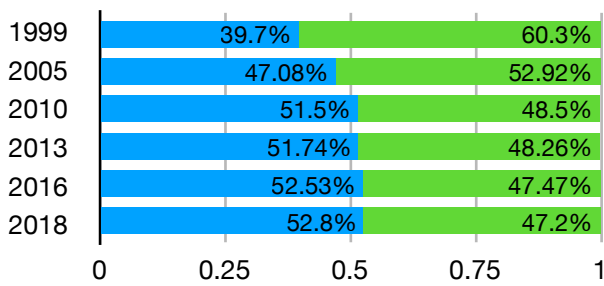
Figure 1.7. Gender ratio of master's students in China (2017)

Year	female student	male student
1982	9.6%	90.4%
2005	40%	60%
2006	46.36%	53.64%
2010	50.36%	49.64%
2012	51.4%	48.6%
2018	54.7%	45.3%
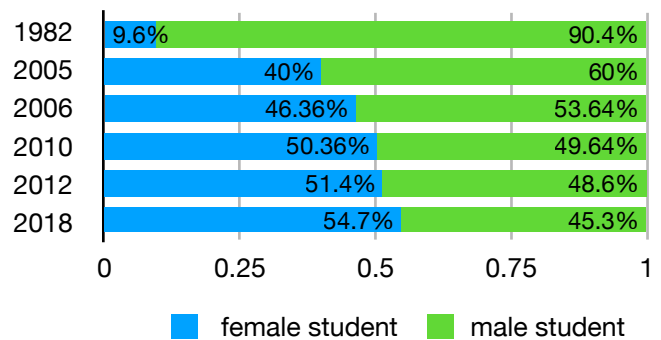
Source: CNBS, 2018

Figure 1.8. Income differences between male and female students in different levels of education in 2018

Level	female students	male students
junior college	4,487	4,528
undergraduate	4,978	5,289
master	6,987	7,483
doctor	10,085	12,089
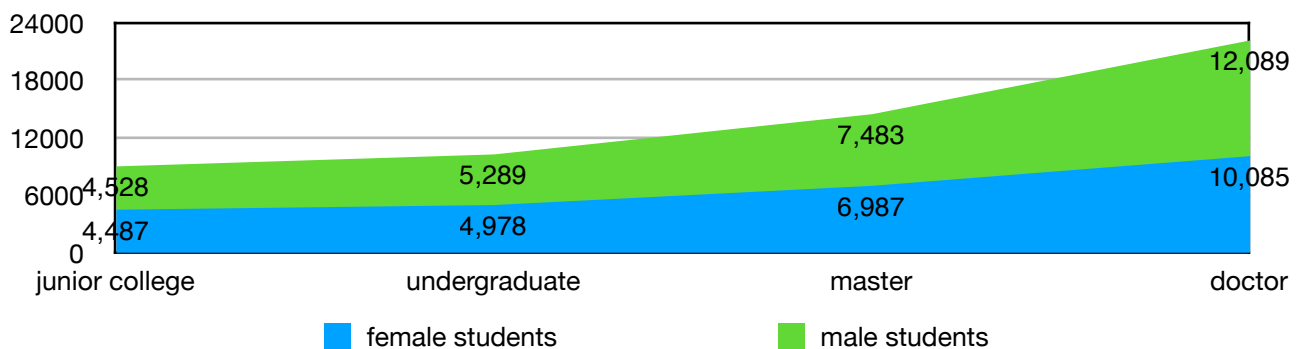
Source: CNBS, 2019

Career prospects are one of the main reasons behind the above-mentioned gender inequality. In China, the average income gap between male and female students is much more significant at the doctoral level than at the bachelor's and master's levels (see **Figure 1.8** above; CNBS, 2019). Regarding academic careers, gender inequality is more severe. Research conducted by Shen and Zhang (2015) indicated that, of all academic staff in doctoral schools in China, women constituted 33.40%. They also pointed out that women were under-represented among professors; one in three men were professors compared to one in seven women. Another research conducted by Tsinghua University showed that between 2005 and 2014, among the 653 PhD graduates who teach in world-class universities, women constituted 23.1%. However, among other

29

PhD graduates teaching in other types of universities (which are less elite than world-class universities), the percentage of women was much higher. We can notice that even with similar educational backgrounds, female PhDs' academic career opportunities were less than male PhDs in China.

Based on the facts mentioned above, we could see that doctoral education, especially elite doctoral education, is still exceptionally unequal, 'as apparently intractable as it is morally critical' (Holsinger and Jacob 2009: 23). Such a picture supports the necessity to deepen our understanding of social class and gender inequalities regarding elite doctoral school access and inform change towards better equality.

1.3 Doctoral education in China

This section introduces the research context of the thesis. China's education system as a whole will be first discussed. Then, I will demonstrate the characteristics of three mainstream doctoral programs in China in recent years. Finally, factors related to the tuition fee, grants and scholarships will be examined to show the readers that financial issues are less vital for Chinese students to have doctoral school access.

1.3.1 Education system in China: a brief introduction

In 1951, the central government in China passed a law entitled 'The Decision on the Reform of the Education System'. Since then, the Chinese education system has gradually developed and improved. Chinese education today is divided into three types: basic education, higher education and adult education (see **Table 1.5** below). Basic education can be further divided into pre-school education (age 3-5), primary education (age 6-11) and secondary education (age 12-18). Secondary education includes junior secondary education (age 12-14) and senior secondary education (age 15-17). According to the Compulsory Education Laws of the People's Republic of China, initialled in 1986,

primary education and junior secondary education, which are nine years in total, are compulsory education. This law helped to enrol millions of children, especially girls and those in rural areas, into schools. In 1949, merely around 20% of six-year-old children entered schools; in 2021, the enrolment rate has reached over 98%.

Table 1.5. The Chinese education system

Age				
22 +	postgraduate education (master's education and doctoral education)		higher education	adult education
22				
21	undergraduate education	higher specialised/vocational/ technical education		
20				
19				
18				
17	senior secondary education	specialised/vocational/technical secondary education	basic education	
16				
15				
14	junior secondary education			
13				
12				
11	primary education			
10				
9				
8				
7				
6				
5	pre-school education			
4				
3				
Source: CME official website, 2018				

Pre-school education usually refers to education received by children in nursery school or kindergarten. Primary education is the education received in elementary schools. Following that, students enter junior high school for three years of secondary education.

31

After finishing junior secondary education, students who wish to continue their studies could attend the entrance exams designed and administered by the provincial education department. There are two routes for those who have passed the examination: the academic route and the specialised/vocational/technical route (Chen, 2000). Those who choose the academic route would continue their study in the academic senior secondary schools, which usually lasts three years. Others who pick the specialised/vocational/ technical route would receive two to four years of vocational training, which is highly employment-oriented. Graduates of academic senior secondary schools wishing to attend universities or colleges for higher education could take the National Higher Education Entrance Exam (gaokao), which takes place in June each year. Likewise, the specialised/vocational/technical secondary school graduates[7] could also attend the National Higher Education Entrance Exam and continue their studies. According to the Chinese Ministry of Education (CME), in 2021, 10.78 million students attended the exam. Through National Higher Education Entrance Exam, students could enrol in two types of education: undergraduate education and higher specialised/vocational/technical education.

According to the law, the Chinese government encourages all social sectors to run HEI, including public organisations, enterprises, and even individual citizens. The numbers of HEIs in 2020 are listed in **Table 1.6** below. All these HEIs are rigidly regulated and administrated by the central government. For public HEIs, all the presidents and party secretaries are directly appointed by the CME. Even for private HEIs, the party organisations exist, and the government dispatches their leaders. HEIs in China are divided into universities that award academic degree qualifications and colleges that offer diploma or certificate courses. Entry to universities and colleges depends mainly on

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[7] Since 2000, the CME has allowed the vocational secondary schools' graduates to attend the National Higher Education Entrance Exam and be enrolled in higher education programs.

students' performance in the National Higher Education Entrance Exam, which is highly competitive in China.

Table 1.6. Number of HEIs in China in 2020

HEIs providing postgraduate education	827
Regular HEIs	2738
Adult HEIs	265
Other non-government HEIs	788
Source: Asia-Europe Meeting (ASEM) Education Secretariat, 2021	

Adult education in China ranges from primary education to higher education. For instance, adult primary education provides courses for workers and peasants (especially those in remote areas) to increase their literacy levels. Adult higher education refers to radio/TV universities that provide (mostly) online courses, continuing education and self-study higher education. Their graduates could obtain diplomas or certificates (sometimes also regular degrees).

In the Global North, education qualification is usually a general term that encompasses qualifications and degrees. However, in China, qualifications (represented by graduation certificates) and degrees (represented by academic degree certificates) are two different forms of credentials. A comprehensive understanding of them and their differences could be beneficial for knowing the possible routes students could choose in the Chinese higher education system, especially when their choices are unconventional. Please see **Appendix 1** for a detailed discussion.

1.3.2 Doctoral programs in China

In China, there were three mainstream doctoral programs in recent years: the regular doctoral program, the bachelor-straight-to-doctor program and the successive master-

doctor program. Each doctoral program has its unique training objectives and enrolment requirements. **Table 1.7** below illustrates their characteristics.

Table 1.7. Doctoral programs in China and their characteristics

Doctoral program	Who can apply	Time spend on master's study	Time spend on doctoral study	Whether completer has a master's degree?	Whether participant could obtain a master's degree?
Regular doctoral program	Master graduates (or equivalent)	Three years	Four years	Yes	Yes
Bachelor-straight-to-doctor program	Undergraduate graduates	Zero years	Five years	No	No
Successive master-doctor program	Master students	Two years	Four years	No	Yes
Source: CME official website, 2018					

Regular doctoral program

Regular doctoral programs usually require applicants to have completed three years of master's study and obtained a master's degree. However, applicants with only a bachelor's degree are eligible under certain conditions. Such candidates are called 'candidates with equivalent academic abilities'. Although each doctoral school has slightly different requirements for 'candidates with equivalent academic abilities', their main concerns were all research experiences. The most common requirements are obtaining a bachelor's degree for more than six years, in the meantime, publishing a certain amount of academic papers as the first author in core journals, or winning awards for scientific research achievements at the provincial or ministerial level. Additionally, most doctoral schools require 'candidates with equivalent academic abilities' to pass additional political and professional knowledge exams before being formally admitted.

A regular doctoral program usually lasts four years and is capped at six years. There were two admission models related to it: the written test model and the application-assessment model. The written test model is the most traditional model of enrolling doctoral students. It started in 1981, which was the first year of PhD entry in China. Typically, the written test model consists of two steps: the written test and the interview, and the former weighs much more. Sometimes it was even the case that the written test determined admission results, and the interview did not play a role. Although the written test model has actively promoted the development of PhD education in China for an extended period due to its stringency and uniformity, it is under debate for the lack of capacity to comprehensively evaluate students' academic competence and other relevant abilities in recent years.

With the development of doctoral education in China, calls for PhD admission reform were getting louder. A more international admission model was under the requirement. Under such circumstances, Peking University, Tsinghua University and Fudan University took the leading role in the experimental work of the application-assessment model in 2007 and succeeded. After that, the scope of the pilot was extended. Until 2018, the application assessment model has come into operation in 56 elite universities in China. However, the new admission model was only used by elite universities and in particular disciplines. The written test model was still the ruling model for PhD admission at the present stage in China.

Table 1.8. Processes related to the regular doctoral program's admission in China

Doctoral school official website announces enrollment guidelines	Early October
Online registration, submission of required materials and review of materials	Early October to Late December
Written test	March to May next year
Interview	March to May next year
Prospective admission	April to June next year
Admission	September next year
Source: CME official website, 2018	

Table 1.8 above shows the processes related to the regular doctoral program's admission in China. Each year in early October, doctoral schools would release the enrolment guidelines on their official websites. According to these documents, students could determine which doctoral schools they intended to apply to. Later, from early October to late December, students were required to register online, submit demanded materials (both online and by post) and pay the application fee (usually around ¥200) to their intended doctoral schools. Typically, the materials demanded by the written test model are much less than those demanded by the application-assessment model.

After receiving the submitted materials, under the application-assessment model, the doctoral schools would organise staff (primarily experts in the fields) to review and score them. Those applicants who have ranked high will be invited to participate in the retest, which takes place in March, April or May next year. The number of students participating in the retest is around one point five to three times the number of planned admissions. The retest includes the written test and interview; students with high scores and outstanding performances would be prospectively admitted.

However, the material review is much more casual under the written test model. Doctoral schools do not organise a special panel of experts to evaluate and score submitted materials but browse them and organise applicants whose materials meet the basic requirements for written tests. Only applicants who pass the written tests will be invited to participate in the retest. Like the application-assessment model, the number of students participating in the retest is around one point five to three times the number of planned admissions. The retest includes merely the interview; students with high written test scores who perform well in the interview would be prospectively admitted.

Under both models, prospectively admitted students would finally be admitted after a period of publicity, which is the last step in admissions. It is worth mentioning that, no matter which model it is, the weight of the initial test is far greater than that of the retest.

So even though both models include material review, written test and interview, there are essential differences between them.

Bachelor-straight-to-doctor program

Compared to the regular doctoral program (three years master study plus four years doctoral study) and the successive master-doctoral program (two years master study plus four years doctoral study), the total study time for the bachelor-straight-to-doctor program is shorter (zero year master study plus five years doctoral study). Extremely outstanding bachelor graduates could apply for this program, and if successful, they could become doctoral students directly. The admission processes are highly competitive (see **Table 1.9** below for the admission processes).

Table 1.9 Processes related to bachelor-straight-to-doctor program in China

Doctoral school announces relevant information	April or May
Online registration and submission of paper documents	April or May
Summer camp	June or July
Prospective admission	September or October
Eligibility selection	September to May next year
Admission	September next year
Source: CME official website, 2018	

Each year around April or May, doctoral schools publish information relevant to the bachelor-straight-to-doctor program on their official websites. Generally speaking, doctoral schools that were able to carry out the bachelor-straight-to-doctor programs are extremely elite ones. After receiving relevant information, undergraduate students register online and submit the required documents for doctoral schools to make selections. Then in June and July (during students' summer vacation), the doctoral schools would invite selected applicants to attend its summer camp, which usually takes place on campus and lasts three to five days. The summer camp is a packaged interview during which

doctoral schools host speeches, seminars and group discussions to assess participants. Later in September and October, doctoral schools publish the pre-admission list based on applicants' performances during the summer camp. Afterwards, students on the list could submit applications to their undergraduate schools for eligibility selections. The eligibility selections are based on the applicants' performances during their undergraduate periods. Like doctoral schools that can carry out the program, universities that have the opportunity to send their graduates to attend the program are also elite ones. Students who obtain both permissions from their undergraduate university and invitations from the elite doctoral schools would finally be enrolled.

In the first few years, the Ministry of Education (MOE) stipulated that the number of admitted students to the bachelor-straight-to-doctor programs should be less than 10% of the total number of doctoral students admitted each year. Due to this limitation, the doctoral students accepted to bachelor-straight-to-doctor programs yearly were merely around 500 all over China. Hence, admission was fiercely competitive during that period. However, the number of students participating in this program has expanded rapidly in recent years. In 2020, the percentage of PhD students enrolled in the bachelor-straight-to-doctor program in China surpassed 10% for the first time. In the same year, in many well-known doctoral schools, especially those related to science and engineering, the percentages of students recruited in this program were as high as 50% or more. More and more applicants and supervisors are gradually favouring the bachelor-straight-to-doctor program over other programs.

Moreover, among the three doctoral programs in China, the bachelor-straight-to-doctor program has the highest value recognised by the job market due to its competitiveness and scarcity. However, it is also the riskiest program among the three because unlike the regular doctoral program, whose applicants already have a master's degree, nor the successful master-doctoral program, whose participants can abandon doctoral studies

38

and continue master's studies at any time, its participants have no chance to obtain a master's degree.

Successive master-doctoral program

The successive master-doctor program was initiated in 1986 in medical science doctoral schools in China. The primary aim of it was to shorten the PhD cultivation time. Later, people found that students participating in this program could maintain good continuity in their research and study. They tend to have the same supervisor and do not need to change research topics when upgrading from a master's student to a PhD student. Also, the successive master-doctor program simplifies processes. Students do not need to go through the procedures of writing and defending the master's dissertation (as a result, they were also unable to obtain a master's degree) and proposing their doctoral research. Furthermore, since students usually stay in the same university and under the supervision of the same supervisor, they do not need to spend extra time adapting to the environment and establishing relationships with relevant people. Because of these advantages, until 2009, this program was set up in nearly all elite doctoral schools in China.

The applicants of the successive master-doctor program need to be second-year master's students with outstanding grades and research capacity (usually evaluated through GPA and impact factor of published research papers). Qualified students must also log in to the registration system to submit the required materials. This process usually happens between early October and late December. The following process is the interview. Applicants do not need to take any written test for this admission method. Once admitted, they will omit the final year of master's study and directly become PhD students. The duration of doctoral study for this program is usually four years.

1.3.3 Tuition fee, grants and scholarships

The cost of living for PhD students differs depending on the area where the university is located. Elite doctoral schools are usually located in the bigger cities where the rent, transportation, food and utilities are slightly higher. However, nearly all Chinese universities provide dormitories for doctoral students, and the accommodation fee is around ¥1,000-2,000 per year, which is much lower than renting a place by themselves. Even in some universities, doctoral students pay the same amount of money as other students but get better accommodation conditions. They can live in single or double rooms, while undergraduate and master's students generally live in rooms shared by four to eight people. Apart from rent, the food price in the university cafeteria is also lower than the general standard due to state financial subsidies. In many other aspects, such as transportation and utilities, doctoral students could also enjoy student discounts.

The year 2014 witnessed a fundamental change for doctoral education in China as it began to practice the fee-charging policy. Under the new policy, the tuition fees for doctoral degrees in academic disciplines are capped at ¥13,000 per year. The new policy marks the end of the previous state funding system making doctoral education more expensive. Moreover, many doctoral schools, especially elite ones, have recruited only full-time PhD students in recent years. For applicants with jobs, if admitted, they must quit their jobs and transfer their personnel files[8] to the universities.

After introducing tuition fees, national grants for PhD students have increased from ¥12,000 in 2013 to ¥15,000 in 2017, which is sufficient to cover tuition fees. Apart from national grants, universities also provide doctoral students with self-raised scholarships. The amount differs due to the location and type of university but usually ranges from ¥10,000 to ¥20,000. Doctoral schools also make their contributions, offering scholarships

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[8] Personnel file plays a significant role in China's personnel management system. It is unique to China and has legal effects. It is evidence of personal identity, education, qualifications and is closely linked to people's activities related to education and work.

between ¥10,000 and ¥50,000. Almost every doctoral student can obtain these two scholarships, but the specific amount depends on their academic performance and scientific achievements. There are also subtle differences between doctoral schools. **Table 1.10** below is the financial support plan regarding the national grant, university scholarship and doctoral school scholarship for a doctoral program in an elite doctoral school in China. From the table, we can notice that these fundings are available for all the PhD students and are high enough to cover their tuition fees and living expenses even in the worst cases.

Table 1.10. Financial support plan in an elite doctoral school in China

Support level	Percentage of student	National grant	University scholarship	Doctoral school scholarship	Total
First level	5%		¥ 18,000/annual	¥ 30,000/annual	¥ 63,000/annual
Second level	25%	¥ 15,000/annual	¥ 18,000/annual	¥ 16,000/annual	¥ 49,000/annual
Third level	70%		¥ 15,000/annual	¥ 12,000/annual	¥ 37,000/annual
		Monthly	Annually	Monthly	
Source: CME official website, 2018					

Apart from the national grant and scholarships mentioned above, some supervisors with scientific research funding also provide financial aid to their doctoral students. The specific amount depends on the research project and the student's contribution to it. Some universities also provide rewards for students who publish academic papers. For example, at the Renmin University of China, students could earn ¥3,000 when they publish an article in non-core journals and ¥6,000 in core journals. Moreover, there are also other scholarships established by enterprises and alumni. Usually, the more elite the doctoral school, the more such scholarships would be established. Besides, some doctoral students also work as teaching assistants, research assistants or assistant managers to make extra income.

Even from most deprived families, doctoral students can still live their PhD life without too much burden. Nevertheless, one problem is that tuition and accommodation fees are paid at the beginning of the semester, while grants and scholarships are applied for and received around one month later. In other words, students need to be able to pay one year's tuition and accommodation fees in advance.

The doctoral school access inequalities arising from the disadvantaged information and educational resources which existed after the instalment of reform and opening-up policy have now been compounded by the introduction of tuition fees. However, as the introduction of tuition fees is still in its infancy, 'it remains to be seen if a sizeable proportion of students will be deterred from doctoral education as a result' (Reay et al., 2009: 10). If so, whether there are differential influences based on social class and gender as students' financial experiences are shaped not only by economic capital but also by cultural capital (Reay et al., 2009). Also, it is unknown whether the grants and scholarships available could effectively help alleviate the financial burden of PhD students and encourage more disadvantaged but talented students to pursue doctoral degrees.

1.4 Summary

In this chapter, I first discussed the rationale of this study. As a transitional society, the society in China is fluid and dynamic, providing opportunities for people living within it to change their social status and live a better life. Doctoral education is closely related to such type of upward social mobility. However, in recent years, although more students were admitted, regarding their social class and gender, there still exist inequalities. I then provided some background information to help readers better place this study into a real context. The next chapter will examine current literature on relevant topics to identify how this study could better contribute to the understanding of school access equality.

II. LITERATURE REVIEW

Education is the key to achieving Sustainable Development Goals all over the world. Because when people are provided with access to quality learning opportunities, they can break from the cycle of disadvantage and live a better life. However, the problem is that, in real life, people have unequal access to quality education. They may be constrained by various factors such as social class, ethnicity and gender. Such a picture triggers a variety of comprehensions in relevant fields. To better determine how this study can be carried out, I reviewed related literature, whose results will be presented in this chapter.

2.1 Overview of current literature on school access equality

This study focuses on elite doctoral school access equality in China. Nevertheless, I found limited literature on doctoral-level school access equality during the initial search. In addition, further reading of the relevant literature indicated that most were carried out in the Global North, particularly the USA and concerned with racial equality. For example, in the USA, Muñoz-Dunbar and Stanton (1999) evaluated the PhD recruitment process in clinical psychology with a particular concern on ethnic minority students. Bersola et al. (2014) examined the distinctions in the predictors of enrolment between underrepresented minority students and others. More recently, Roberts et al. (2021) reviewed the practice changes in STEM doctoral admissions and discussed their contributions to diminishing correlations between enrolment decisions and students' racial identities. Hsueh et al. (2021) investigated the discrepancies in PhD admission experiences among students of different ethnicity. In the UK, Moberly (2014) explained how the treatments of ethnic minority students at admission to medical doctoral schools need to change. Based on the above facts, I decided to expand the literature review discussion to include school access equality in all countries at all levels (Please see **Appendix 2** for a complete list of the discussed literature).

Figure 2.1 below illustrates the characteristics of current literature on school access equality, and the most prominent one is the conflict between normative evaluations and practical explanations. Impacted by the 'historical divorce of the social sciences from moral philosophy' (Israel and Frenkel, 2017: 651), current literature concentrates on either normative evaluations or practical explanations of equality. The former is characterised by relatively clear metrics for measuring equality, while the latter is featured by more detailed descriptions of the causes and effects and experiences of equality. On the one hand, philosophers develop ways to normatively explore the very meaning of equality (Elster, 1992; Rawls, 1993; Sandal,2009). Nevertheless, they are criticised for presenting an individualistic analysis of human practice without considering the social structure within which people act and being overly abstract from actual situations on the ground (Olson and Sayer, 2009). Opponents claim that being purely normative means being ideological, which risks making wrong choices based on subjective feelings rather than objective facts (Lewis and Mosse, 2006; Olson and Sayer, 2009; Wilson-Strydom, 2015). On the other hand, sociologists are deskilled in understanding normativity and reluctant to engage with the philosophical arguments mentioned above. Especially when it comes to topics related to equality, they tend to 'have a feel-good flavour to them that can cover up the absence of precise meaning' (Brennan and Naidoo, 2008: 287). This phenomenon is partly because claiming to be non-normative can cater for the latest trends of development organisations which consider practices rather than ethics as their primary concern (Olson and Sayer, 2009). As a result, the fundamental question of a proper metric by which we could measure equality was neglected.

Figure 2.1 Overview of current literature on school access equality (all countries and all levels)

Sen-Bourdieu Framework (this study)

Normative evaluations:
Admission system and policy
Participation data
Resource distribution
Human relation

Practical explanations:
Students' perception and experience
Other people's perception and experience
Structure (Bourdieu)

Sen:
- Relatively emergent
- Concentrate on gender equality
- More distribution than development of capability

Bourdieu:
- Concentrate on social class equality
- Mostly in Western countries

Due to the conflict between normative evaluations and practical explanations, current literature can be divided into two groups. The first group of literature is clear about the meaning of equality and how it could be measured. Most studies utilising Sen's CA belong to this group, for which capability is the metric to measure equality. However, by mandating merely standardised measures, the first group of literature failed to provide context-specific explanations of the mechanisms behind. In other words, the direction of such literature is more from theoretical perspectives with limited empirical evidence. Moreover, some of the metrics utilised by these studies are problematic, which will be discussed later. The second group of literature successfully provides deeper comprehension of the complex processes that exacerbate or create equality of school access. Most studies employing Bourdieu's social reproduction theory belong to this group. With the help of the concepts of capital, habits and fields, how inequalities happen and are experienced by relevant people are analysed. However, the second group of literature does not define equality and is unclear about the metric they use. In addition, most of them concentrate on the impact of structure but ignore another crucial factor: agency. By generating a theoretical framework combining

Sen with Bourdieu (which will be discussed in **Chapter 3**), this research provides a new possibility between the two groups.

In addition, some other characteristics are also worth noting. Studies using Sen's CA are relatively emergent. Moreover, most literature of this type focuses on gender equality and capability distribution, while other forms of equality and development of capability are under-researched. In contrast, research on Bourdieu's social reproduction theory deals more with social class equality in the Global North. All these characteristics will be discussed in depth below.

2.2 Normative evaluations

Sen (1980) highlighted that any normative study on equality should not avoid a core question: 'Equality of what?'. No matter how the study is carried out, the researcher should have one and only one final definition and, therefore, metric of equality in mind. The choice of the metric in which to measure equality determines what equality they prioritise. Concentrating on studies that provided normative evaluations, this section will first discuss the four dominant metrics of equality frequently used in the school access literature and highlight the merits as well as demerits of these metrics. Then, I will introduce a less mainstream metric: the capability, and underline the features of its related literature.

2.2.1 Four dominant metrics of school access equality

Equality has constantly fed fundamental educational deliberations, leading countless scholars to debate its meaning and empirical applications. However, this widespread interest seems to overlook the fundamental question of what metric we should use to measure equality, which provokes tremendous debate within the field of philosophy. Given the complexity of the theoretical terrain of equality and the tensions inherent in applying pure philosophical metrics to the context of education, I felt it necessary to reengage with

political or moral philosophy to answer this basic question. Hence, this section first identifies the four dominant metrics of school access equality and their underlying philosophical logic. Moreover, apart from pointing out the contributions of these metrics to practical educational analysis, I also developed critiques of them. When I mention 'critique' here, I do not mean recognising the ways things go wrong but identifying assumptions, familiarities, or unchallenged modes of thought that restricted researchers' ways of exploring and understanding their research questions (Olson and Sayer, 2009).

Admission system and policy

The first metric is influenced by the social contract approach, which was first articulated by Thomas Hobbes (1651) during the Age of Enlightenment and has been widely discussed by the most prominent philosophers since then (Locke, 1764; Rawls, 1972; Nozick, 1974; Rousseau, 1955; Montesquieu, 1984; Gauthier, 1986; Pettit, 1997). The contractarian approach emphasises the idea of a hypothetical social contract which was accepted and endorsed by people to ensure equal benefits, rights or treatment in a given society (Sen 2009). Although philosophers share different ideas about what an ideal social contract should be like, they have all considered the identification of just structural or institutional paradigms as the principal concern of analysis in social justice and equality.

Researchers from the contractarian perspective believe that people are endowed with equal rights to enjoy educational opportunities, and the key to ensuring this is the principle or rule that has been designed and implemented. Hence, they review and assess the policies that have affected school access equality. Some looked into the impact of a particular policy on a particular type of school access equality (Sperandio and Kagoda, 2009; Bush and Heystek, 2003; Brink et al., 2010). For instance, Rim (2021) investigated the Title IX of the Education Amendments of 1972 in the USA, which prohibited sex discrimination during graduate schools' admission processes and examined whether it

has successfully reduced gender disparity. Chan (2020) explored bilingual preschool policy to see whether it has benefited immigrant students' admissions. Meri Crespo et al. (2021) concerned Spanish public gender policies in Vocational Education and Training and found that the policy hindered rather than encouraged female students to enrol in masculinised professional disciplines, which ran counter to its original goals. Others pay attention to the design or improvement of admission policies, which has the largest share of articles using this metric (Powell, 2022; Hardy, 2017; Addi-Raccah and Israelashvili, 2014; Isopahkala-Bouret, 2019; Kershnar, 2007; Odaga, 2020; Santelices et al., 2019; Chiu, 2018; Zisk, 2017; Connolly, 2013; St.John, 2006). For instance, Adnett et al. (2011) examined whether more interventionist stances could promote admission fairness and equality in the UK. Amaral and Magalhaes (2009) assessed Portuguese higher education admission policies since the 1974 revolution. Baker and Bastedo (2022) tested the potential lottery effects on American higher education access, particularly social class, gender and ethnical equality. Shields (2018) proposed in his article to cap the percentage of students admitted to prestigious universities who were educated at private schools previously to the percentage of students who attend such schools in the whole society.

Apart from admission policy, some studies utilising this metric of equality examined the admission system. Some researchers concentrated on admissions criteria (West et al., 2011; Adeyemi, 2001; Conger, 2015). For example, Posselt (2014) looked into admissions criteria in ten highly selective doctoral schools in the USA and discovered that the initial standard, which concerns predominantly conventional achievements, excluded considerable ethnical minority applicants. Focusing also on doctoral admission in the USA, Newman (2022) scrutinised the application of the GRE in graduate school admissions and analysed the issues raised by this criterion. Other researchers examined a particular admission system. For example, Perkins and Lowenthal (2014) investigated the specific admission system utilised by Educational Technology Department at Boise

State University. Thelin (2019) investigated the athletic admission system in American colleges and identified its illegalities.

Some studies in China were also conducted from this perspective. Chyi and Zhou (2014) analysed the impacts of three sequential reforms launched between 2000 and 2006 on social class and spatial equality concerning primary and secondary school access. Liu (2012) discussed the impact of Chinese cultural values, like Confucian bureaucracy and hierarchy, on the design and implementation of policies which determine the provision of higher education opportunities. You and Hu (2003) proposed the policy methods to balance equality and diversification regarding the reform of College Entrance Examination in China.

However, the social contract approach drew considerable critique. Objectors claim that overcoming all inequalities in one fell swoop and producing a perfect structure with proper regulations and rules is 'an infinite task' (Hart, 2018: 13). Take Rawls' theory as an example. Rawls introduced the veil of ignorance to demonstrate the nature of the equal social contract since he noticed that perfect equality is unattainable in real life (Rawls, 1972). Likewise, Sen also stressed that transcendental equality is beyond mortal reach. In addition, we could not ignore another fact that the type of lives people could lead depends not only on institutional structures but also on their actions.

Participation data

The second group of studies measures and explores school access equality through different types of participation data, such as enrolment rate and racial diversity. Studies of this type originated in the works conducted by French mathematicians in the eighteenth century, such as Condorcet and Borda, and more recently, Kenneth Arrow. Researchers in this line of investigation try to conduct standardised analyses of the social phenomenon, adhering to the appeal of rationalism and scientism. As a result, mathematics becomes

the critical tool for deciphering human behaviour (Sen, 1988). A leading theory from this perspective is the rational choice theory, which provides a tractable and mathematical formulation of people's choices. It emphasises 'consistent, value-maximising choice within specified constraints' and assumes that human behaviours related to choice-making processes are at least purposively rational (Allison & Zelikow, 1999: 18). When making choices, individuals choose among all available alternatives the alternative that will maximise their benefit and advantage (Browning et al., 2000). School access then is simplified as straightforward decisions determined by objective factors, especially economic ones. Some researchers argue that whether or not students will have higher education access is based only on the anticipated future benefits versus the up-front costs, and this simple illustrative decision-making 'scales up to whatever complexity exists in reality, including the almost infinite number of choice sets individuals actually face' (Finnie, 2012: 1164).

According to the source of the data, studies of this type can be divided into two categories: those using primary data and those using secondary data. Researchers employing primary data tend to collect or generate data to solve particular research questions themselves (Korpershoek et al., 2012; Peter and Zambre, 2017). For instance, to understand trends in American female matriculation in the MD-PhD program, Rowell (2020) generated a review of Harvard/MIT Medical Scientist Training Program admissions over a decade and compared it with relevant national data. As a result, he noticed a sharp and sustained promotion in female matriculants far above the national average. Another example was Delavallade et al. (2021), who conducted a two-year experiment in 229 schools in India and utilised the collected data to examine the effects of the Multi-Faceted Education Program on students' school participation equality.

In comparison, researchers utilising secondary data usually concentrate on already existing data generated by others (Dorius, 2013; Raitano and Vona, 2016; Ertas and Roch,

2014; El-Saadani and Metwally, 2019; Landaud et al., 2020; Mazawi, 1998; Riegle-Crumb and Moore, 2014; Alon, 2009; Andres and Adamuti-Trache, 2007; Bar-Haim and Blank, 2019; Burge and Beutel, 2018). For example, to explore gender inequality regarding the choices of private versus public schools, Sahoo (2017) analysed data from the World Bank's Living Standards Measurement Study in Uttar Pradesh and finally identified an intrahousehold gender bias in private school enrolment among Indian children. Likewise, Mahmood et al. (2017) employed the data collected by the Pakistan Bureau of Statistics through a nationally representative survey to explore the effects of household headships on primary school enrolments. Another example was Contini and Scagni's (2010) study, which aimed to compare the effects of students' socioeconomic backgrounds on their secondary school enrolment in Germany, Italy and the Netherlands. Contini and Scagni's study was based on data from PISA. However, they emphasised that PISA was not designed for their study, but with similar variables and sampling schemes, it can be adapted to fulfil their purpose. In like manner, Muralidharan and Prakash (2017: 327) stressed in their study, which was about the impacts of the bicycle on girls' school enrolments, that 'our main data come from a household health survey that was not designed to study the bicycle program'.

In addition, the index used by researchers to measure equality also varies. Xu et al. (2021) investigated racial participation gaps regarding American students' access to Advanced Placement and Dual Enrolment programs and found severe racial inequality existed in the former type of programs. To investigate gender inequality, Zekeri Momoh et al. (2020) assessed gender literacy and gender representation levels, especially female enrolment, in the Nigerian educational system. To explore social class inequality, Panichella and Triventi (2014) measured through both vertical and horizontal dimensions: the former referred to students' access to higher education, while the latter referred to their track

choice. Another study about social class inequality was conducted by Boliver (2011). Instead, she looked into the odds of higher education enrolment as the metric.

China has the most abundant research employing participation data to measure school access equality compared to the other three metrics (Lee, 2014; Luo et al., 2021; Xiaohao, 2007; Xiang et al., 2022; Wang and Guo, 2019). This trend may be influenced by the popularity of quantitative research results from the Scientific Outlook on Development advocated by the central government in recent years. To explore whether the prevalence of distance higher education had increased spatial equality regarding higher education, Li et al. (2014) utilised the Gini coefficient as the metric. The result indicated that although the Chinese government considers distance higher education a crucial device to improve equality, inequality is still increasing in underdeveloped areas. Moreover, by utilising the representative dataset generated through China Family Panel Studies, Rong and Deng (2022) investigated the influence of higher education expansion on higher education access equality. Their study found a massive disparity between provinces regarding access to higher education. Apart from spatial equality, other types of equality are also considered by researchers. For instance, Yin et al. (2021) examined the gendered difference in Chinese medical students' speciality choices. Likewise, Zhang and Chen (2014) analysed the contribution of the expansion of university admission to gender equality. In addition, Zhu (2010) was concerned about the differences between Han and ethnic minority students, which shaped racial inequality in China. Yue (2015) explored students' socio-economic background and their higher education access equality.

However, results from other literature, especially qualitative ones, indicate that higher education access is often a complex process in which other factors such as 'intuition, affective response and serenity' play a significant role (Reay et al., 2009: 6). It is insufficient to consider students as economic decision-makers who rely merely on systematic evaluation to draw on benefits and avoid loss, as they were in rational choice

theory (Green et al., 1996; McKinnon, 2013; Bourdieu et al., 2016). Hence, notwithstanding the participation figure of different forms is helpful to interpreting equality in higher education access, an over-reliance on them would limit our understanding of the unequal experience students may encounter (Tukey, 1977; Unterhalter and Walker, 2007; Finnie, 2012; Pitsoe and Letseka, 2018). In some cases, if we look only at statistical analysis, we see equalities. Nevertheless, while the same results of access have been achieved, the stories behind them may be different. 'It is the difference that is germane to thinking about justice and equality' (Unterhalter and Walker 2007: 4).

Resource distribution

The last two metrics are related to two main approaches to equality that are generated by the perspective of egalitarianism: the distributive approach, which concentrates on the socially equal allocation of resources and the relative approach (more about this in the next part), which emphasises the equal relations and treatments among people (Voigt, 2017). Unlike Rawls, researchers who support the distributed approach, such as Marx and Harvey, stress the structural dynamics, particularly the issues of production that lead to unequal distribution of resources and intrinsic features of the capitalist society. Similar to participation data, the metric of resource distribution pays attention to differences in outcomes and whether these differences are fair (Dworkin, 1981; Arneson, 1989; Cohen, 1989; Schaller, 1997). It is contrasted with the metrics of the admission system and policy and human relation, which focuses on the processes that lead to justice and equality (Tyler and Degoey, 1995; Lind, 2013).

The term 'resource' generally refers to 'goods external to the person' (Anderson et al., 2020: 81). Education access literature concentrates mainly on the distribution of two types of resources: school resources and familial resources. Those concerned with school resources assume that we should generate an even distribution of educational resources

and provide marginalised students with more educational opportunities by making more schools and courses available and distributing them properly. As a result, the distributions of different types of school resources were investigated (Engberg and Wolniak, 2014; Ansong et al., 2018; Murray et al., 1998; Banks et al., 2015; Teranishi, 2006; Metcalf, 1997). For example, Laajaj et al. (2022) explored the distribution of university scholarships and how they had impacted students' higher education enrolment in Colombia. Majhi (2019) investigated the allocations of school infrastructure facilities and their influence on enrolment equality in Indian primary schools. Golden (2021) and Curtin and Egan (2021) are concerned about the allocation of special education teachers for inclusive education in Ireland and Germany and how it could maximise disability equality regarding school access. Duta et al. (2018) examined the advanced subjects and found that in Scotland, the type of advanced subjects taken by students is the most potent mediator for social class inequalities in elite university access, while in the USA, the number of advanced subjects is the strongest.

On the other hand, some scholars highlight that the distribution of familial resources also makes a difference (Himaz, 2010; Esposito and Villaseñor, 2018). For example, Xu et al. (2022) and Azam and Kingdon (2013) addressed the intrahousehold allocation of educational expenditure in Bangladesh and India and found that parents spend differently on sons and daughters regarding their secondary school access, which results in gender inequality. Mwaikokesya (2018) indicated that marginalised and impoverished students bear disproportionately more economic burdens than others due to recent trends such as education budget cuts and privatisation, constraining their higher education access. Sianou-Kyrgiou (2008) pointed out that students with financial difficulties cannot get out-of-school support which results in their low performance in the national university entrance exams.

Similar studies were also found in China. To optimise the distribution of school resources, Liao (2022: 3) proposed a proximity-based school assignment system and argued that school access equality would be achieved 'if all school places are assigned to every student by equal possibility'. With a similar aim to Liao (2022), Dai et al. (2019) proposed a random mechanism with lotteries applied in school allocation. Another relevant study was conducted by Yan et al. (2019), in which the spatial distribution of basic educational facilities was examined. Regarding the distribution of familial resources, Gu and Ozturk (2016) explored the gender differences in household information and communication technology distribution in rural areas.

Nevertheless, the distributive approach has also provoked tremendous debate. Some scholars claim that analysing only the holding of resources without considering what people can do with them is problematic. Resources of different forms are means rather than intrinsic ends (Sen, 1980). They in themselves cannot 'adequately deal with the pervasive inter-individual differences between people' and guarantee their achievements of relevant well-being (Robeyns and Brighouse, 2010: 3). 'How well suited the resource is to an individual's needs and the social contexts to make use of the resource' are also significant (Hart, 2018: 3). Therefore, regarding higher education access, studies on the distribution of resources alone may not capture everything that matters. For example, if the application guide does not fit students' needs or if students are not encouraged or forbidden to go to universities, under these circumstances, even though the resources are equally distributed, there remain inequalities.

Human relations

Another egalitarian approach argues that what matters to equality is how people relate to each other. Instead of the distribution outcomes, it claims that we should focus our attention on the social structures and institutional contexts in which distributions occur

(Young, 2006). Following this rule, Young (1990) put forward the concepts of oppression and domination to define conditions that constitute inequalities and identified the 'five faces of oppression'—exploitation, marginalisation, powerlessness, cultural imperialism and violence. Similarly, Balibar (1997) perceived equality as the antithesis of human suffering and defined it as non-discrimination. Dikec (2001) stressed that discrimination, domination or oppression usually produce and reproduce themselves, thereby maintaining unjust social relations. Thus, to abolish injustice, we should investigate the social arrangements that generate these relations (Young, 2006). Although with subtle differences, theories of the relative approach share a common idea: all citizens should have equal status as community members (Miller, 1998). Hence, concerning higher education, researchers should contemplate how universities could ensure that all students are treated equally and do not experience any form of oppression, domination, or discrimination.

Some literature concerning the relative perspective explored discrimination or bias during the admission process (Swartz, 2010; Bourabain et al., 2020; Jayley Janssen et al., 2022; Hanson, 2017; O'Hara et al., 2012; Olmedo-Torre, 2018). For instance, Moberly (2014) revealed in his study that minority medical PhDs faced discrimination when admitted to medical school in the UK. Isaac and Pruitt (1985) also identified racial discrimination in the graduate recruitment process in the USA. Chai and Weseley (2017) pointed out that American people perceived Asian Americans as 'model minorities' who excel in particular subjects such as science, math and music. Consequently, they must outperform others academically to gain equal consideration from universities. Likewise, Arcidiacono et al. (2022) calculated that in the USA, typical Asian American university applicants would find the admission rate rise by 19% on average if treated the same way as their white counterparts. Apart from racial equality, gender equality was also examined. Lavy and Sand (2018) explored the impact of primary school teachers' gender biases on students'

choices of advanced-level courses in Israel. Cole (1986) tested whether admissions committees in American medical schools discriminated against women.

In addition to discrimination, other forms of unequal human relations were also explored by scholars (Husen, 1976; Anderson, 2015). Esposito and Villaseñor (2019) found that deprivation could negatively influence the equality of primary and secondary school enrolment in Mexico. Medley (2016: 537) was concerned about the historical exclusion of women and found that 'preference for male applicants an open secret in the admissions world, but it remains relatively unknown to the majority of students and scholars alike'. Moreover, Mawhinney (2012) disclosed in his study how the Irish government disregarded its responsibility to meet international human rights standards and failed to protect students' right to education.

Some Chinese researchers also considered human relations as the metric of school access equality. Zhang and Chen (2018) explored tenant discrimination in urban China and found that tenant discrimination, as well as the credit constraint, contributes to the reduction of intergenerational social mobility and education segregation. Concerning also discrimination, Gu and Ming (2021) noticed that administrative discrimination had negatively affected university enrolment equality in China. In addition, Wang et al. (2013) found that although the higher education system in China had expanded enormously, universities are still wealthy, Han, urban, male clubs with poor, minority and rural female students systematically excluded.

However, as was argued by some normative outlooks, the definition of inequality provided by the relative approach is quite intuitive. It is no doubt that oppression, domination and discrimination are bad things. Nevertheless, people could hardly tell what the meaning of these things is and whether they are suffering under them or not since their preferences and judgements are shaped or deformed by the social context (Nussbaum, 2000). The answers related to the definition are needed, but we could hardly get them. Sen (1992:

55) argued that 'the problem is particularly acute in the context of entrenched inequalities and deprivations'. A thoroughly deprived person with a significantly reduced life might not feel improper or unsatisfied because the suffering is 'accepted with non-grumbling resignation' (Sen, 1992: 55). Berlin (1979) also pointed out that people tend to teach themselves not to desire what they cannot have and consciously or unconsciously accept the existence of exploitation and oppression. Therefore, education equality could not be measured through human relations unless more precise criteria of people's sufferings, which could overcome the impact of adaptive preferences, are provided (Israel and Frenkel, 2017).

2.2.2 Capability as an alternative metric of school access equality

The above discussion illustrates that the metric we could employ to measure school access equality remains highly contentious. Apart from the four dominant metrics, another metric initiated by Amartya Sen has been used as an alternative in some literature in recent years: capability. Sen (1993: 30) defined capability as 'a person's ability to do valuable acts or reach valuable states of being; (it) represents the alternative combinations of things a person is able to do or be'. Researchers concerning capability usually have one fundamental belief: when we evaluate equalities, whatever type of equality it is in any society or context, it is people's capabilities that should guide the evaluation and make measurements. I share this belief in this study, and the rationale will be provided in detail in **Chapter 3**. The literature that used capability as the criterion for school admission equality has three main characteristics. First, they are relatively emergent in the educational field but proliferating recently. The second is that most of them are about gender equality, and the third is that most concern the distribution rather than the development of capability.

Capability and educational research

The alternative metric: capability, came from the CA, which was put forward by Amartya Sen to identify, define, and campaign against different forms of global inequality and injustice. Amartya Sen is among the most influential political philosophers and economists of the late twentieth and early twenty-first centuries and a respected Nobel Economics Prize winner. His CA was initially delivered in the late 1970s through a series of lectures and successfully offered an alternative metric for evaluating human development and advantage. Sen's early studies focused primarily on analyses of poverty in the fields of welfare economics and political philosophy. Through these studies, he made subtle changes to some commonly used terminologies, such as equality (1992), freedom (1999), identity (2006), and justice (2009). Meanwhile, other researchers, such as Nussbaum (2005) and Comim et al.(2008), also contributed their insights into the CA. All these efforts together enable CA to be enriched, modified and improved.

According to Sen, education is 'an unqualified good' that expands human freedoms and encourages the development of other capabilities (Unterhalter and Walker, 2007: 8). Taking up the crucial significance Sen (1999) had allocated to education in the formation of human capabilities, researchers with different disciplinary backgrounds make efforts to interpret the topic from their unique perspectives. For instance, as a philosopher, Terzi (2007) was concerned with the capability to be educated possessed by both children and adults in the UK and USA and explored how it could be conceptualised and how the absence of it would harm relevant people's well-being. Another example was Brighouse, who is also a philosopher. Together with Unterhalter, he questioned the measurement utilised by UN agencies and analysed the global social justice movement toward the realisation of Education for All. Apart from philosophers, some economists also engaged in the dialogue. For example, utilising higher education examples in the United States and Peru, Flores-Crespo tried to distinguish the CA from human capital theory and investigated

'how problems of policy and pedagogy bear on how freedom is centrally positioned in thinking about education and capabilities' (Unterhalter and Walker, 2007: 22).

However, in 2003, Saito argued that: 'Despite the fact that Sen's capability approach has received substantial attention from philosophers, ethicists, economists and other social scientists, it has not yet been critically examined from an educational perspective' (Saito, 2003: 17). Since the publication of Saito's work, the potential of the CA has been more widely recognised. Consequently, emerging educational researchers have considered the CA's implications for the issues in their field. Among their works, the relationship between education and social inequalities was the most popular topic. According to Unterhalter and Walker (2007), the main questions that had been asked include: Are significant and valued capabilities distributed equally in and through education? Do some social groups get more chances to obtain relevant resources and convert them into capabilities than others? For example, Walker (2019) was concerned with the persistent social gap regarding university access in South Africa and found that objective conditions and personal biographies constrained students from low-income families' capabilities during their application processes. Calitz (2019) explored South African undergraduate students' experiences and examined how racial backgrounds had impaired their development of capabilities and chances of success. Moreover, by distinguishing diverse forms of social exclusion, Wang (2011) identified the different chances confronting students from different social groups in China and revealed that the Chinese higher education enrolment mechanism decreases school access equality by reducing some students' capabilities and excluding them from fair competition. Nevertheless, operationalising the notion of capability for interpreting equality is still in the early days. Therefore, this research aims to contribute further to this under-researched and under-theorised issue and pave the way for future studies.

Similar to the studies utilising the four dominant metrics, studies that employ the capability are also concerned with more conceptual evaluation than practical analysis. In other

words, most of these studies dealt mainly with abstract ideas about equality, although some draw on examples from diverse settings. For example, Broderick (2018) explored the meaning of inclusive education and equality under Article 24 of the United Nations Convention on the Rights of Persons with Disabilities through the lens of the CA. Moreover, engaging with the philosophical conception of equality from the perspective of the CA, Terzi (2008) was concerned with the demands of disability and analysed what constitutes an equal provision of education for disabled learners. Later, in 2014, Terzi rethought the issue of inclusive education, where he conceived equality as capability equality and developed 'a cohesive value framework which clarifies the relationship of education with the aims of a just society' (Terzi, 2014: 479). In addition, Lim (2020) concentrated on disabled children's public education access and argued that applying the CA to the legal references could secure compensatory resources required by inclusive education.

Capability and gender equality

The CA has given people a new vocabulary to use when engaging with the issue of equality. Consequently, there are a growing number of studies investigating the relationship between education and equality in the education and sociology of education fields. However, I noticed that most of them dealt with gender and explored the light the CA sheds on different dimensions of gender inequalities (Cameron, 2012; Cin, 2017; Cin and Walker, 2016; Kameshwara and Shukla, 2017). For example, Unterhalter (2007) investigated the meaning of gender equality in education and how the CA has affinities with it. Although this study 'has relevance for thinking of other inequalities in education', Unterhalter did not deal with them in practice (Unterhalter and Walker, 2007: 22). Walker (2007) provided an example of the application of the CA in education with a particular focus on gender equality by selecting a capability list in South Africa. More recently, Loots

and Walker (2015) examined the potential of the CA to inform policy formation in South Africa and argued for the development of the higher education policy concerning the opportunities for the development of valuable functionings as the basis for gender equality. Cin et al. (2020) scrutinised Turkey's educational reform and policies from a capabilities-based perspective emphasising gender equality. Gore (2021) argued for a more nuanced definition of gender disadvantage by employing the CA, which could explore the opportunities as well as achievements available to university students.

Sen (1992: 125) also emphasised in his work that 'the question of gender inequality can be understood much better by comparing those things that intrinsically matter (such as functionings and capabilities), rather than just the means to achieve them like resources. The issue of gender inequality is ultimately one of disparate freedoms'. Comparatively, empirical studies on the effect of social class from the CA perspective are limited. Although the CA is considered 'robust' in taking up social class differences, its application focuses more on gender than social class inequalities (Walker and Unterhalter, 2007: 133). Practical use of the CA to explore social class differences can only be found in the literature, which combines it with other context-specific theories such as Bourdieu's social reproduction theory. Social class is found to have an impact on the development of 'capability to aspire', 'capability to realise aspiration' and 'science-related capabilities' in the context of the UK (Hart, 2013, Gokpinar and Reiss, 2016). Similarly, in China, Keung (2015) discovered that social class is the primary factor in shaping adolescents' capability to expect higher education.

Distribution of capability or development of capability?

For researchers who employ capability as a metric to measure education equality, there are two analysis methods to choose from: analysing the distribution of capability among different social groups and analysing the development of capability experienced by

different social groups. The former compares people with different social backgrounds and deals with questions such as who has the power and opportunity to develop particular capabilities and who has not. This method pays attention to the unequal outcomes and their reasons. The latter compares those with particular capabilities and explores questions like whose experiences were more effortless and whose were not; who had faced fewer constraints and obstacles and who had not. This method concerns unequal processes. As a result, students' educational experiences and success stories are investigated.

In current literature, more researchers chose the former than the latter. For instance, Keung and Ho's (2020) study found that adolescents with higher SES were more likely to expect post-secondary education in Hong Kong. In other words, the capability to aspire was more distributed to students with higher SES than those with lower SES. Another example was provided by Gokpinar and Reiss (2016), who compared three Turkish immigrant students with different science-related capabilities to see the outside-school factors that shape the unequal distribution of science-related capabilities among students. Likewise, Ogamba (2019) identified the personal, social and institutional constraints that limited girls' school access in Nigeria. This study explained why education-related capabilities were unequally distributed among students of a different gender. Moreover, although without hands-on practice, Hart (2019: 594) emphasised in her article that we could explore 'which individuals are able to develop the freedom to pursue lives they have reason to value', similar to the question of who could develop particular capabilities we had discussed before.

As for the second method, relevant research was limited. Even though there were some discussions on this issue, they have stayed at the theoretical level. For example, Unterhalter (2007) stressed that sometimes behind the seemingly equal outcomes 'may lie very different stories, and it is the difference that is germane to thinking about justice

and equality'. Although she had provided some examples to support this argument, in-depth explorations of the 'different stories' were absent. Likewise, Walker (2007: 192) suggested at the end of her research, which had generated a basic capability list for gender equality assessment in South Africa, that 'we might wish to check how successful girls are bringing about what they are trying to achieve'. However, Walker (2007) herself did not put this suggestion into practice, leaving the fertile territory for future studies.

2.3 Practical explanations

I divided the literature on school access equality into two categories. The first group of literature, which we had discussed before, focused more on outcomes of equality and thus clearly defined its metric. The second group, often criticised for being not normative, emphasised how inequality occurs but most elegantly avoided the discussion relevant to the metric. In a nutshell, researchers' perspectives on the occurrence of inequality fall into three categories: students' perception and experience, other people's perception and experience and structure. In the third category, abundant researchers drew on Bourdieu's social reproduction theory. Therefore, this section will discuss the three major perspectives and then delve further into the studies employing Bourdieu.

2.3.1 Three perspectives to explain school access equality

The second group of studies employed descriptive and explanatory tools of different types in order to depict the school access processes and deepen insights into the mechanisms behind the relevant inequalities. Given that the school access processes are often complex, these tools were sensitive to a series of interrelated and complex factors such as social relations, the surrounding environment and human diversity. Different tools focused on different perspectives, which I divided into three categories: students' perception and experience, other people's perception and experience and structure.

Students' perception and experience

Most of the studies of this type were concerned with the perception and experiences of non-traditional students who often identify themselves applying to and negotiating through the culture and rules of their aimed schools, which were considerably different from what they were familiar with before application. The non-traditional students investigated by researchers included: female students (Para-Mallam, 2010; Chauraya, 2014; Lockman, 2022), racial minority students (Para-Mallam, 2010; Martinez et al., 2019), low-income students (De Freitas et al., 2021) and disabled students (Khairuddin et al., 2018; Mwaipopo et al., 2011). These studies revealed that non-traditional students face more constraints than their counterparts, shaping their unsuccessful applications or compounding experiences. For instance, Acevedo-Gil and Zerquera (2016) found that students with racial minority or disadvantaged family backgrounds had limited access to relevant advisors, which excluded them from educational opportunities. De Freitas et al. (2021) argued that students with disadvantaged family backgrounds tended to feel disconnected from the schools they had applied to and encountered high cultural clashes during the application processes. Likewise, they also noticed that disadvantaged students felt uncomfortable seeking support and advice from others because they often considered themselves outsiders in school. Another study that mentioned students' lack of career guidance was conducted by Maila and Ross (2018), where they found that rural schools' failure to provide relevant resources hindered students' aspirations to be transmitted from secondary to higher education. Moreover, focusing on lived experiences of disabled students, Mwaipopo et al. (2011) found that social challenges like discrimination and physical barriers such as infrastructural inadequacies were encountered during their university application processes.

Apart from obstacles, some studies also identified facilitating factors for under-represented students' school access. According to Maila and Ross (2018), academic support and

parents' expectations helped students' higher education access in South Africa. Martinez et al. (2019) found that attending advanced and dual-credit courses in college preparatory charter schools could get Latinx students academically ready for university application in the USA. De Freitas et al. (2021) concluded that both intrinsic facilitators, which related to the improvement of students' self-confidence, motivation, strategy and attitude, and extrinsic facilitators, which provided students with social connections, economic support and pieces of information, contributed to the Canadian medical school access for students from low-income backgrounds.

In addition, some of these studies were augmented with theories to better explain students' perceptions and experiences. For example, Acevedo-Gil and Zerquera (2016) applied Bronfenbrenner's ecological theory in their study, which helped interpret the interrelationships between students, their traits and different environmental contexts. De Freitas et al. (2021) integrated two theories: identity capital and intersectionality, to acknowledge how social identities impact students' access to medical schools and thus realise social mobility in Canada. Maila and Ross (2018) framed their discussion within Paulo Freire's theory of conscientisation, which stressed the active processes through which students developed a critical awareness of reality through self-reflection on social and economic contradictions. Consequently, they could take action against the oppressive reality and make efforts to transform them.

The overwhelming majority of these studies were concentrated on other levels of school access. Studies on doctoral school access were scarce. Nevertheless, I successfully located two of them, both conducted in the USA. The first one was the study of Bersola et al. (2014), where they found that the critical distinction between doctoral admission and other school admissions was that it mainly occurred within the department, with only supervisors and other department faculties engaged in the processes and making the decision. They argued that students' perceptions and experiences of doctoral school

access vary significantly depending on their subject. Hence distinct disciplinary comprehension is needed for further investigation. Another study was carried out by Hsueh et al. (2021), where they identified that racial minority students' perceptions and experiences regarding doctoral school access were distinct from others due to financial reasons.

Other people's perception and experience

Apart from students, other critical actors are also involved in the school access processes, such as parents (Gabay-Egozi, 2016; Reay and Lucey, 2004; Knudson, 2021; Siddiqua and Janus, 2017; Byrne and De Tona, 2012; Seghers et al., 2021), school teachers (Alexander et al., 2020; Mishra et al., 2018; Sainz et al., 2011; Jones and Wheatley, 1990; Trouilloud et al., 2002) and admission officers (Chai and Weseley, 2017; Bastedo and Bowman, 2017; Bowman and Bastedo, 2018). Their perception and experience also drew extensive consideration in the academic field to explore the issue of school access equality.

Some studies of this type investigated the ways different parents select schools and facilitate access differently for their offspring. For example, Gabay-Egozi (2016) explored how Israeli parents appropriate and reproduce notions of social class and spatial privilege through their school choice and found that their sense of belonging as well as social and cultural identities made the difference. Kundson (2021) noticed that African American parents with middle-class backgrounds retain measures of empowerment generated by their possessed human capital and positive public school experiences, which benefited the intergenerational education transmission. Byrne and De Tona (2012) argued that migrants in the UK confront particular barriers when negotiating their children's secondary school access, such as cultural and language barriers. However, most of them worked hard to demonstrate active roles and tried their best to be self-motivated and resilient during the

processes. Another example was Lareau's (2000) study, which illustrated how parents with advantaged socioeconomic backgrounds held different views on their role and ability to support the school access of the next generation. Whereas middle-class parents had interconnected beliefs about home-school relations and made great efforts to help with their children's education, their working-class counterparts tended to defer most responsibilities to the school teachers.

In addition to parents, teachers' experiences and perceptions were also highlighted. Concentrating on the widening access initiatives undertaken by medical schools in the UK, Alexander et al. (2020) investigated high school teachers' perceptions and practices towards those efforts. The result showed that some teachers' attitudes were negatively impacted by schools' material constraints, strict admission requirements and low success rates, making it harder for disadvantaged students to succeed in fierce competition. Mishra et al. (2018) explored Indian teachers' experiences and perceptions of inclusive education and found that although some of them possess a positive attitude towards the new effort, their actual experiences related to practical operations were highly scarce. Moreover, Sainz et al. (2011) found that secondary school teachers in the USA hold gendered views towards their pupils' choice of professionals for the next level of education. Likewise, Jones and Wheatley (1990) also noticed that during mathematics and science lessons, teachers tended to encourage boys more than girls to engage in the classroom, which subtly steered girls not to choose particular subjects and thus led to gender inequality.

Another group of people whose perceptions and experiences were frequently examined in the academic sector was admission officers. For example, concerning social class equality, Bastedo and Bowman (2017) noticed that admission officers tended to reward applicants with disadvantaged family backgrounds for overcoming barriers, as for their advantaged counterparts, there was no evidence that they would be rewarded or penalised during the application processes. Similarly, Kurzweil and Tobin (2006) also underlined that admission

officers in selective American universities had preferences for applicants with lower SES who had attended underserved high schools. In addition, Bowman and Bastedo (2018) found in their following study that admission officers with disadvantaged backgrounds were more likely to recruit low-SES students.

Structure

Another set of studies discussed structural factors in generating and reproducing patterns of school access differentiations and their relationships with various forms of inequalities. The relevant debate can be categorised into two streams. The first group of studies concentrated on how the education system itself helped produce and reproduce school access inequalities (Hill, 2008; Marginson, 2016; Mullen, 2009; O'Shea et al., 2021; Prickarts, 2010; Watson, 2009; Yates, 2006). For example, Courtois (2017) looked into the secrets behind the gates of prestigious schools in Ireland and provided a compelling discussion of the role these schools played in generating school access inequalities and maintaining social reproduction. He argued that elite school access was conditioned mainly by social networks and economic resources. Some students' birth provided them with near-automatic rights to entry. Courtois's (2017) work also revealed the cruel fact that schools tended to serve their traditional distinguished clienteles first and emphasised more social homogeneity than individual merit during the admission processes. Likewise, Debs and Cheung (2021) pointed out that the primary enrolment system in Singapore provided some socially distinguished parents with advantages.

The second group of studies was concerned with the family's contribution to structure-reinforced privilege and hence school access inequalities (Cristián Bellei et al., 2020; Evans, 2021; Reay and Lucey, 2004; Young-Loveridge, 1989; McCleary-Sills et al., 2015). For instance, Boterman (2022) noticed that in the Netherlands, white middle-class parents tended to enrol their children in selective schools while other parents could not manage to

do the same things even if they were neighbours, thereby maintaining high levels of segregation regarding school access. Similarly, Cahill and Hall (2014) underlined in their study the classed nature of parental engagement and families' different abilities to access relevant educational resources, resulting in school access inequalities in Iran. Concentrating on the unofficial education market in the USA, Holme (2002) found that some parents made use of the 'for schools' approach and purchased homes in particular areas with the aim of facilitating their children's school access. Regarding doctoral-level access, Steward (2008) pointed out that families' social network, financial status and cognitive value played crucial roles in shaping ethnic minorities' decisions to pursue doctoral degrees in the USA.

Studies on structurally impacted school access inequality were also abundant in China. Exploring the interplay among different types of capital, Gao and Ng (2017) found that there exist multiplicative capital effects on higher education enrolment, which leads to social class inequalities. Moreover, similar to what had been identified in the Global North, Liu et al. (2019) and Xiaoxin (2014) confirmed that structural factors such as school climate and home environment impacted Chinese students' school access and consequently shaped social class inequalities.

Bourdieu's theoretical framework, particularly the concepts of capital, habitus, and field, was argued to focus on 'education and social reproduction' (Lingard et al., 2005: 663). Consequently, it can effectively explain the structure. Therefore, a vast majority of studies on Bourdieu belong to this type. By emphasising the context-related feature of school access, these studies revealed that while it is desirable for all students to determine and pursue quality education, the opportunities they enjoy differ due to the social, familial and institutional distinctions (Ball et al., 1996; Bathmaker, 2015; Byrom, 2009; Olmedo Reinoso, 2008; Sheng, 2018). The following section will provide a detailed discussion of the relevant studies' features.

However, despite the long tradition and the relatively mature system, the structure analysis remains a contested area as some scholars believe such studies were not sensitive to individual heterogeneities (Pogge, 2002). They argued that students are active participants rather than passive spectators during the educational process for whom the structure is the influential instead of the decisive factor (Walker and Unterhalter, 2007). Regarding equality issues, Sen (1992: 6) underlined that analysing them with merely the 'assumption of antecedent uniformity' would miss out on another fundamental aspect: human diversity. Similar criticisms directed specifically at Bourdieu were also pervasive. Researchers pointed out that studies utilising Bourdieu's theories emphasised too much on pre-reflective dimensions of action and could explain only social reproduction (Calhoun et al., 1993; Reay, 2004; Sayer, 2005). We do not receive from Bourdieu any theoretical guidance on the realisation of social mobility (Gokpinar and Reiss, 2016).

To fully understand the school access phenomenon and its relevance to equality, we should also consider the agency apart from the structure. Agency describes what was stressed by Sen (1992) as human diversity and is intrinsically crucial for expanding and advancing students' well-being in ways they deem worthwhile (Alkire, 2002). According to Unterhalter and Walker (2007: 5), the notion of agency emphasises 'that each person is a dignified and responsible human being who shapes her or his own life in the light of goals that matter, rather than simply being shaped or instructed how to think.' It deserves our attention because it enables people to transcend the current situation and 'image and act toward new ways of being' (Walker and Unterhalter, 2007: 5). Due to the agency's existence, apart from traditional students, we see also the cases of disadvantaged students' access to elite schools in our real life. In this way, dynamic power was brought to open the opportunity to realise positive social change alongside the power put by structure to lead to social reproduction. Research focusing on both structure and agency is limited. In a study conducted by Morley and Croft in 2011, they found that although disabled

students face constraints, frustration and even danger, their agency offered them possibilities to transform spoiled identities. Burger and Walker (2016) underlined that although parents tend to pass education-related resources and advantages on to their children, children's agency and its impact on their performances did not vary by social class, making it possible to reduce social gradients. Another example was provided by Baker (2019), who was particularly interested in exploring how the agency was exerted by underrepresented students in the face of structural restrictions.

2.3.2 Bourdieu and explanation of school access equality

This section discusses the research employing Bourdieu's theory to explore the relationship between structure and school access equality. I summarise two characteristics: firstly, most studies focused on social class equality, and other categories of equality were ignored; secondly, most studies were carried out in the Global North with a focus on modern capitalist society, and the discussion of Chinese transitional society was somewhat limited.

Bourdieu and social class

After reading and summarising the relevant literature using Bourdieu's theory, I noticed that most of them were concerned with social class equality. As was underlined by Naidoo (2004: 457): at the heart of Bourdieu's theory lay his effort to expose education as 'a powerful contributor' to maintaining and reproducing social class inequality. Regarding school access, studies identified that students are often located within a matrix of influences from family, school and significant others; all of these influences are significantly shaped by their social class background (Ball, 2003; Reay et al., 2005; Sheng, 2014; Dodgson, 2004; Pugsley, 1998). For instance, Byrom (2009) found that school factors or (in Bourdieu's term) institutional habitus, such as intervention programmes, were

instrumental in guiding UK students' university participation. Kosunen and Seppänen (2015) noticed that parental factors, especially parents' abilities to transfer different forms of capital, impacted students' primary school participation in Finland and thus led to social distinction.

Some scholars have criticised Bourdieu's theory and studies employing Bourdieurian theory for failing to take other forms of equality, especially gender equality, into account and provide sufficient analysis of them (Ferree et al., 1999; Weisberg, 1993; McCall, 1992; Adkins, 2004; Silva, 2005). Classifying Bourdieu's theory as one of the male-centred social theories, Ferree et al. (1999:45) claimed that it also suffers from the same problem as such theories, namely 'either ignored women altogether or assumed that women's class' positions are determined by those of the men to whom they are attached'. Likewise, Weisberg (1993) also argued that most male-centred theories do not consider the potentially more significant subordination and exploitation suffered by women than the men who share their social class positions within the family. For them, 'women were substratum, the state epiphenomenon' while Bourdieu is undoubtedly not an exemption (Weisberg, 1993: 429). Bourdieu mentioned little about notions of female, gender or ethnicity in his work, which delivered the illusion that they are secondary to social class (McCall, 1992).

However, despite limited empirical applications, many scholars have recognised that Bourdieu's theory could explain differentiated power relations and other types of inequalities alongside social class inequalities (Moi, 1991; McNay, 1999; McCall, 1992; Lovell, 2000; Krais, 2006). For example, Moi (1991: 1036) claimed: 'Bourdieu's theories offer the opportunity to reconceptualise gender as a social category in a way which undercuts the traditional essentialist/non-essentialist divide'. Likewise, Bennett et al. (2009) also underlined that although Bourdieu framed his work on social class, other contemporary problems, especially gender, could also be interpreted through his theory.

Following these scholars' suggestions, some studies explored the other forms of equality together with social class equality through the Bourdieurian perspective (Abbas, 2007; Espinoza, 2012; Auðardóttir and Kosunen, 2020). For example, to explore how South Asian students gain entry into the selective primary schools in the UK, Abbas (2007) concerned both social class and racial factors and found that working-class and middle-class parents were both highly motivated while the latter also possessed cultural, social and economic capital to ensure their children's success. Similarly, Auðardóttir and Kosunen (2020) also explored the impacts of social and ethnic backgrounds on students' private school access in Iceland and argued that middle-class white parents tended to label the public schools as failing and suffered moral dilemmas over their choices.

In addition, gender equality has also received increasing attention. I located some studies on gender equality alone (Reay, 2000; Bennett *et al.*, 2009; Reay et al., 2005; Dillabough, 2004; Gorely et al., 2003). Some explored the differences between female and male students during the school access processes (Reay et al., 2005; Turnbull et al., 2019; DiMaggio and Mukhtar, 2004). For example, Turnbull et al. (2019) noticed that universities tended to attract more male than female students to study physics, and the main reason was their school culture. In China, Zhang and Tsang (2012) examined scores in the national college entrance examination and found significant and positive gender gaps (female better) in Chinese and English and small but negative gender gaps in math. Others were concerned about parents' gendered role in facilitating their children's school admission (Lareau and Weininger, 2008; Sheng, 2014; Brantlinger, 2003; Brooks, 2002; Devine, 2004). Sheng (2014) argued that in China, the role played by mothers instead of fathers was central to understanding parental involvement in promoting children's university access because mothers were nearly always the only person involved in children's education, while fathers often took a distant role on a daily educational basis.

These efforts revealed that school access is powerfully gendered, forming the basis for subsequent research.

Bourdieu and China

Bourdieu's initial study was conducted in France. Noticing that it had successfully provided a powerful 'thinking tool' for interpreting inequalities during the educational processes, many researchers have applied and developed his theory in other Global North countries (Nash, 1999: 124). For instance, utilising Bourdieu's notion of habitus, Hill and Lai (2016) explained how social class was negotiated and contested during the primary school access processes in the UK. Lareau et al. (2016) use the field concept and discuss how it shaped American parents' transmission of advantages to their offspring through the selection of elementary schools. Apart from the UK (Mathers and Parry,2009; Reay et al., 2005) and the USA (Acevedo-Gil and Zerquera, 2016; Bersola et al., 2014; Hsueh et al., 2021), other countries like Spain (Olmedo Reinoso, 2008) and Canada (De Freitas et al., 2021) were also concerned. All these countries have one thing in common: they are all stable and highly stratified societies. In comparison, Chinese society is a transitional society which is fluid and unstable. Apart from this point, China is different from France and other Global North countries in two other aspects: first, China is a socialist and post-communist society, and second, China is a patriarchal community. These differences raise the question of whether Bourdieu's theory has particular social and cultural specificity and applies to research in the Chinese context.

In terms of the first difference, although most of the current audiences are from capitalist countries, many scholars believe that Bourdieu's concepts, including capital, habitus and fields, can be used to explain what happens in socialist and post-communist societies (Robert, 1990; Mateju and Peschar, 1990; Ganzeboom et al., 1990; Outhwaite, 2007). Mateju (2002:380) argued that 'post-communism has been an ideal laboratory for testing

Bourdieu's hypotheses regarding the role of various forms of capital and their conversions in the reproduction of inequality and in shaping life success'. Mink (2002: 446) underlined that Bourdieu's social reproduction theory has been 'one of the principal frameworks for sociological theories of postcommunism'. Correspondingly, Bourdieu (1993: 271) also suggested: 'my concepts should not be treated as immutable, rather they are to be reworked: they are intended for exercise or even better, for putting into practice.' Consequently, various empirical studies were conducted in non-Global North contexts, in particular, Eastern Europe and provided substantial evidence to prove the applicability of Bourdieurian concepts to socialist societies (Ganzeboom, 1990; Eyal *et al.*, 1998). For instance, Ganzeboom et al. (1990) found that since economic inheritance was restricted by law in socialist societies, cultural capital and its reproduction could explain a larger proportion of social inequality in Hungry than in the Global North context. Focusing on another capital, social capital, Wong (1998) demonstrated that social networks significantly impacted students' educational attainment in former Czechoslovakia.

The second unique feature of China is that it is a patriarchal community, which makes the dynamics of gender within it an ideal example of relational dynamics since most of the social interactions happen 'in the context of power structures governing relevant social fields' (Israel and Frenkel, 2018: 658). Undoubtedly, the particular form of male dominance in China harms the ability of women to accumulate relevant capital, develop particular habitus and gain school access, thus leading to discrimination and oppression. Liu and Morgan (2020: 190) identified that there existed 'cultural beliefs in innate gender differences' in China, which limited female students' expectations and aspirations. Sheng (2015) found that women were less likely to select some subjects than men for undergraduate study due to cultural factors, which limited the realisation of their potential. Such situations cry out for further attention.

Due to the above facts, the application of Bourdieu to China is highly significant and meaningful. The Chinese practice will 'to some extent extend' Bourdieu's theory (Wu, 2012: 275). As Sen (1992: 5) put it: 'what happens in China is not only important for China, but also for the rest of the world.' The past two decades have witnessed the growing popularity of Bourdieu in China. Research utilising Bourdieu's theory has gradually increased. Some are concerned with the reproduction of cultural capital (Hong, 2000; Wang, 2000; Li, 2001; Li, 2003; Guo, 2005; Chen, 2006; Niu and Bai, 2006; Zhu, 2007). For instance, Wu (2012) argued that middle-class parents' cultural capital and efforts to benefit their children's accumulation of cultural capital outside the family significantly increased their advantages during the university access processes. Others attempt to provide a better comprehension of the implications of other forms of capitals (Guo, 2005; Zhu, 2005; Zhu, 2007; Bian *et al.*, 2005) and habitus (Tian, 2000) in the context of China. However, overall speaking, relevant research was still minimal.

2.4 Research combining Sen and Bourdieu

Research combining Sen and Bourdieu, which was what I attempted to do, is limited. In a policy-oriented paper published by Schuller et al. (2004), they pointed out that three types of capital: social, human and identity capitals, constitute capability-related assets; in this way, Sen's CA was successfully blended with Bourdieu's notion of capital. Another study combining Sen and Bourdieu was carried out by Frohlich and Abel (2014), which is concerned primarily with health inequalities. Arguing that Bourdieu's notions of capital and habitus have limitations in comprehending individual agency, they employed Sen's CA to fill the gap. Although their research was in medical sociology rather than educational sociology, Frohlich and Abel's (2014) discussion on the limitations of Bourdieu's theory and its potential to be combined with Sen's CA was highly instructive. In addition, Israel and Frenkel (2020) also proposed a theoretical framework linking Bourdieu with Sen to explore

social justice in space. They argued that their theoretical framework successfully blends 'a normative idea with an empirically based scrutinisation of the social and cultural constraints that affect freedom of choice' and examined it empirically through a case study in Israel (Israel and Frenkel, 2020: 1).

In 2012, Hart combined Sen and Bourdieu for the first time in the sociology and sociology of education field to explore the formation and development of students' aspirations, which marked the beginning of a new trend. She emphasised that appropriate conversion factors could transform commodities into related capabilities and provided explanations on how these processes happened. Hart (2012: 64) stressed: 'The synthesis of Sen and Bourdieu's perspectives allows a new order of questions and enquiry to emerge that challenges the status quo and normative perceptions of educational processes.' Hart's (2012: 105) study was concerned with merely two capabilities: 'capability to aspire' and 'capability to realise aspirations'. However, she suggested that her attempt can be considered a starting point for evaluating students' complete capability sets (which was what this study did).

Concerned also with education, Gokpinar and Reiss (2016) expanded Hart's (2012) research and investigated the formation and development of three aspects: students' attitudes, aspirations and attainments. A model blending Sen with Bourdieu was developed to explore the outside-school factors and mechanisms that shaped students' science education experiences, focusing on the distribution of resources as well as conversion processes. Later, in 2019, Lemistre and Ménard combined Bourdieu and Sen to explore young people's choices on study paths in France. They argued that blending the two theories allowed them to overcome shortfalls in Sen and Bourdieu and examine 'cases of social reproduction as much as non-reproduction' (Lemistre and Ménard, 2019: 966).

2.5 Summary

In this chapter, I analysed current literature on school access equality. Some research gaps were identified; the main one was the gap between normative evaluations and practical explanations of school access equality. A theoretical framework combining Sen's CA, which provides ways to normatively define and measure equality, with Bourdieu's social reproduction theory, with which the mechanisms behind equalities can be explained, can bridge the gap. The next chapter discusses the Sen-Bourdieu theoretical framework.

III. THORETICAL FRAMEWORK

In the previous chapter, I identified the primary research gap relevant to this study: the gap between philosophically normative evaluations of school access equality and sociologically inspired practical explanations of its mechanisms. In this chapter, I argue that the knowledge of political philosophy and social science are not ultimately incompatible. We could improve the analysis of elite doctoral school access equality by 'linking the general ideas of normative theory to the particulars of concrete cases' (Olson and Sayer,2009: 195). Drawing upon the philosophical concepts of equality contemplated by Amartya Sen and the notions of capital, habitus and fields developed by sociologist Pierre Bourdieu, this chapter explains how the research gap could be bridged.

3.1 Sen and the metric of school access equality

In order to rebind normative evaluations with practical explanations, we first need to configure a proper metric. In this study, I argue that capability could be used as an alternative metric to measure school access equality instead of the four dominant metrics we had identified before. Hence, this part of the discussion will focus on the CA. First of all, I will summarise some of the contents of the CA that may explain and improve the four dominant metrics of school access equality. Second, I will discuss Sen's CA in detail for the readers to comprehensively understand it. Finally, I will explain why I chose capability as the metric of elite doctoral school access equality in this study.

3.1.1 Capability approach and improvements to the four dominant metrics

In the last chapter, I explained that, from different philosophical perspectives, scholars had contemplated school access equality and the potential measurement of it in different ways. Also, we knew that most of the contenders in the arena of ideas were under challenge. Correspondingly, Amartya Sen also noticed the problematic nature of existing equality

evaluation (Walker, 2006). A primary characteristic of his CA is that it is developed as an alternative to present approaches to evaluating human well-being and equality (Terzi, 2005; Pogge, 2002; Sen, 1992). As Sen (2009: 231) commended, 'my work on the capability approach was initiated by my search for a better perspective on individual advantages.' Due to this fact, responses to the challenges in the current literature, which provide improvements to the dominant metrics, were identified and generalised when I scrutinised the CA. **Table 3.1** summarises the key points, which will be unpacked in the following part of this section.

Table 3.1. Challenges of the dominant metrics and improvements from the CA

Metric of school access equality	Challenge	Content of the CA to improve the challenge
Admission system and policy	Perfect institutional structure is unattainable in real life	Analyse existing inequality
Participation data	Lack of focus on admission processes	Pay attention to unequal experiences and limited choices
Resource distribution	Ignores individual heterogeneity	Consider conversion processes simultaneously
Human relations	People's preferences are not rigid	Take adaptive preference into consideration

First of all, some of Sen's views help address the issues posed by utilising the admission system and policy to measure school access equality. Noticing that producing a perfect institutional structure which is equal in all aspects is an unrealisable task, Sen (1992) argues that it is more realistic to seek insights into the causes and mechanisms of current diagnosable inequalities. Moreover, Sen (2010) believes that although it is unlikely to overcome all inequalities in one fell swoop, we could still make valuable and constant progress by focusing on reducing obvious and intolerable inequalities. This belief echoes other scholars, such as Deneulin et al. (2006), who propose that we should pay attention to 'transforming unjust structures'. As for this study, I claim that such an idea of equality is also applicable to issues related to school access, as our existing admissions processes

are still far from benign, leading to different forms of inequality, including but not limited to social class and gender inequality.

The concentration on existing inequalities rather than equal social contracts raises another question: how could we identify cases of inequality? Sen (2010) provides an answer to this question, that is, through reasoning. He argues that, through reasoning, we no longer stay merely in observation and intuitive feelings but to a deeper level of dissection (Sen, 2010). Only then could we determine whether the tragedies we have witnessed deserve condemnation and distinguish irresistible natural disasters from human-made ones. Sen's rational thinker is similar to Adam Smith's 'neutral spectator', who scrutinises subjective feelings by standing at a distance. It emphasises the significance of objective neutrality, which is also what I want to seek in this study.

Secondly, Sen (2009) explains how people's freedom and actions impact the possibilities for developing an equal society and vice versa. The actual lives people could lead depend partly on social structure but not only on it (Sen, 2010). Therefore, Sen (1992) argues the significance of focusing on individual lives and points out that we could reduce unnecessary inequalities by analysing people's unequal experiences and limited choices. This argument provides a focus alternative to participation data regarding school access equality: applicants' experiences and the choices they possess.

The alternative focus draws our attention from the admission outcomes to the admission processes. Sen believes it is not comprehensive to consider only people's de facto choices, in other words, final results. The broader selection processes should also be considered, including other choices they may have had but did not make. Such overall results could better illustrate people's well-being. Putting Sen's argument to this study, I assert that admission data is not an accurate barometer of elite doctoral school access equality, as it says little about the unfair treatment applicants might encounter, the limited choices they have and the various constraints that exist in the context.

82

Thirdly, Sen rejects evaluations of equality based exclusively on resource distribution. He calls resources with an economic undertone as commodities and underlines that they are only the means to enhance people's advantage rather than advantage itself (Sen, 1999). People differ in their ability to operate the resources (commodities) due to personal, social or environmental factors. 'Differences in age, gender, special talents, disability, proneness to illness, and so on can make two different persons have quite divergent opportunities of quality of life even when they share exactly the same commodity bundle' (Sen, 1999: 69). 'The sources of interpersonal variations in conversion can be numerous and powerful' (Sen, 1992: 37). Hence, Sen (1992) claims that the missing part when we think from the resource-distribution perspective is how resources (commodities) are converted into achievements. Sen's CA makes up the missing part and offers a more comprehensive insight into interpreting and analysing human well-being.

Finally, Sen's concern relevant to human relations as a metric of equality was mainly on the existence of adaptive preference. He emphasised that unequal political, social and cultural circumstances may lead to unequal distribution of opportunities and choices among people. These external circumstances 'affect the inner lives of people: what they hope for, what they love, what they fear, as well as what they are able to do' (Nussbaum, 2000: 31). Hence, people's preferences are not rigid; they may adapt them in response to social context, consciously or unconsciously and accordingly accept their status within the social hierarchy as correct regardless the fact that they may not in their best interests. For example, long-deprived persons would not dwell in dissatisfaction or grief but cut down their desires to more modest ones and try to find comfort in small mercies (Sen, 1992). In other words, people tend to adjust their hopes to their probabilities, even though these processes may involve injustice or inequality. Consequently, their agency and well-being are diminished. Sen captured the phenomenon and wrote:

> The destitute thrown into beggary, the vulnerable landless labourer precariously surviving at the end of subsistence, the over-worked domestic servant working around the clock, the subdued and subjugated housewife reconciled to her role and her fate, all tend to come to terms with their respective predicaments. (Sen, 1985: 15)

In this regard, I argue that we should consider adaptive preferences when we analyse equality-related issues and try to generate more discussions and deliberations on how people mentally change their preferences as they view and experience the world in a restricted way. Hence, in this study, apart from exploring participants' actual lives, I also ask them to reflect on what is essential for elite doctoral school access in China and their relationships with those essential things. Also, during the data analysis process, I pay attention to the differences between the real advantages students enjoy and the satisfaction generated through adapted preferences.

3.1.2 Key concepts of the capability approach

Apart from providing an alternative to evaluating human well-being and equality, the CA also redefines various overarching ideas and utilises them to 'inform the language of capabilities' (Hart, 2018: 22). Some common concepts were adopted by Sen, each with a specific meaning in the context of the CA that is different from people's typical understandings. In this way, the CA draws people's attention to myriad complicated factors which impact individual advantage (Alkire, 2002). Hence, I argue that it is necessary to provide some explanations of these key concepts before discussing the application of capability as a metric of school access equality. In this section, Sen's ideas on some key concepts, including freedom, functioning, commodity and conversion process, which stand at the CA's centre, will be discussed. These key concepts are better interpreted in ration to one another instead of in isolation to comprehend the central notion: capability (Hart, 2018).

Freedom

Due to the plurality and incompatibility of human values, people hold different views on the meaning of freedom (Berlin, 1979). One of the most famous and influential works that discuss this topic is British scholar Isaiah Berlin's 'Two Concepts of Liberty', where he revolutionarily distinguishes the concept of negative freedom from that of positive freedom (Berlin, 1979). According to Berlin (1979), works on negative freedom mainly attempt to define the proper areas within which individuals can and should be left free to do things they want to do and be the person they can be without any interference. Such works insist that we should focus on law and discipline to analyse freedom and then draw boundaries around it. Alternatively, positive freedom shifts people's attention from law and discipline to the source of interference and control in real life. It emphasises that whether people are free to do things and live the life they value within the constraints matters more. Generally speaking, negative freedom pays attention to external constraints to define freedom, while positive freedom refers to internal restraint to interpret it.

The discussion on freedom also forms a central focus of Sen's CA. Instead of variables applied by traditional normative approaches such as material advantage, procedural liberty and utility, Sen (1999) insists that the substantive freedoms that the members enjoy could better evaluate a society's success. Although in economics, the tendency has been to explore negative freedom, which concerns 'constraints on one's choices in the markets' like coercion, hunger and poverty, Sen's definition of freedom is closer to its positive form (Gasper and Staveren, 2003: 139). Sen (2009) argues that people's capacities to make choices or attain desired ends matter, as such capacities can be quite different among individuals. Nevertheless, the definition of freedom in its positive form does not mean Sen denies negative freedom. He explains that positive freedom can only be achieved imposed by conversion factors under moral and legal protections (Sen,

1999). Positive and negative freedom do not conflict. In comparison, negative freedom is more fundamental. It offers the cornerstone for achieving our final aim—positive freedom (Sen generates the term capability to represent it).

Sen identified five instrument freedoms: political freedoms, economic freedoms, social freedoms, transparency guarantees and protective securities (Sen, 1999). Among them, transparency guarantees are closely related to this study. It stresses that people should be able to trust each other and be provided with reliable and honest information, which is essential for elite doctoral school access.

Functioning

Another central concept in Sen's framework used to inform the notion of capability is functioning, which denotes people's achievements, more explicitly, what they successfully manage to do or be (Sen, 1985: 10). Sen (1999) argues that there are various functionings, ranging from relatively basic ones, like being healthy and sheltered, to more complicated ones like being able to aspire and having self-respect. However, the CA suggests that looking at the functionings alone is not enough to evaluate human advantages, the opportunities and freedoms people enjoy to achieve functionings, which Sen terms as capability, is also (and even more) crucial. 'Our evaluation of equality must then take account of freedom in opportunities as much as observed choices.' (Unterhalter and Walker, 2007: 21). According to Sen (1999), capability represents people's ability to achieve their desired functionings; in other words, alternative combinations of potential and feasible functionings. It is 'a set of vectors of functionings, reflecting the person's freedom to lead one type of life or another' (Sen, 1992: 40). The distinction between capability and functioning reflects the differences between process equality and the equal outcome.

Sen (1980) underlines the distinction between functioning and capability, similar to achievement and freedom to make achievement, or outcome and potential. He provided an example: a rich person who is fasting and a poor person who runs out of food may reach the same functioning, but their capability varies substantially (Sen, 1999). The critical difference is whether they could choose to eat well. Likewise, this study focuses on elite doctoral school access and considers it as a functioning. The main aim is to explore the differences in people's capabilities and developments of capabilities as though the same functioning is achieved. In other words, it looks as if there is the same educational outcome, but behind it may lie different stories. These differences are the key to thinking about and evaluating school access equality.

Commodity

Sen's commodity is similar to what we call resource. He makes two main points about this term. Firstly, Sen emphasises distribution. He argues that when evaluating advantages, the tendency is to look at resource indicators, which may be the accumulation of wealth for individuals and a gross national product (GNP) for countries. However, such indicators are not illuminating as they do not consider distribution (Sen, 1999). 'Countries with similar aggregate figures can exhibit great distributional variations', similar to the situations between individuals (Nussbaum, 2005: 60). Therefore, when analysing equality, the equality of commodity allocation is crucial.

Secondly, Sen (1999) stresses that commodities can be means of human advantage, but not the intrinsic ends. It is insufficient for individuals to possess commodities alone as they cannot guarantee their advantages. They should also be able and free to utilise these commodities. Applying this point to education, commodities at students' disposal impact but do not determine their educational opportunities (capabilities). It is also important whether the commodities are to the students' needs. Hence, studies on 'what kinds of

inputs will shape particular opportunities to achieve desired outcomes' are not comprehensive enough (Walker and Unterhalter, 2007: 2). Another influencing factor, which is how those commodities are converted into capabilities, also plays its role in shaping students' well-being developments.

Conversion process

Finally, Sen's CA highlights another crucial concept in determining people's advantages: the conversion process, which refers to how commodities can be converted into capabilities (Sen, 1992). In a study about school achievements, Marjoribanks (2002) mentioned that students' educational successes were determined firstly by the amount and quality of encouragement, support and knowledge parents have about education and secondly by the extent that such resources are transferred to the students when they interact with their parents. Marjoribanks' (2002) study provides an example of the significance of the conversion process stressed by Amartya Sen. We should note that an individual may possess abundant commodities but still cannot develop valued capabilities because he or she lacks the ability or is forbidden (or constrained) to use these commodities effectively.

The notion of the conversion process is significant because it first makes the CA sensitive to social relations and arrangements' influence on people's lives. For example, people who value the capability for voice may fail to realise it due to the lack of a social environment that is sensitive to their ways of expressing themselves or provides them with chances for this. These people have the internal capacities as well as resources to express themselves, but the external conditions to achieve their relevant capabilities are missing or constrained. In addition, the notion of the conversion process also stresses the differences among people. Sen (1992: 37) comments: 'Once we shift attention from the commodity space to the space of what a person can, in fact, do or be (or what kind of life

they can lead), the source of interpersonal variations in conversion can be numerous and powerful.' Likewise, although not naming it the conversion process, Bourdieu (1986) also noticed this phenomenon and mentioned that: there are always distinctions between the possession and activation of capital. Capital of different forms alone cannot guarantee the desired achievements. Putting this to education, students may yield different profit rates from similar educational investments (Bourdieu, 1986).

Moreover, Sen (1999) suggests that converting commodities into human advantages (capabilities) depends on factors in intersecting dimensions, including the personal dimension and the social and environmental dimension. The personal dimension emphasises people's capacities and abilities. The social and environmental dimension, according to Robeyns (2011: 7), refers to 'factors from the society in which one lives, such as public policies, social norms, practices that unfairly discriminate, societal hierarchies, or power relations related to class, gender, race, or caste.' Such classification of conversion factors makes the CA sensitive to human diversity and the effect of social relations and arrangements on individual lives. This study follows Sen's suggestion and divides the conversion factors that will be explored into these two types. In the following, Bourdieu's notions of habitus and fields will be used to interpret social and environmental factors, while the concept of agency (emphasised by Sen and Bourdieu) will be applied to approach individual factors.

3.1.3 Capability as a metric of school access equality

The CA was initialled by a core question asked by Sen (1980): 'equality of what?'. He believes that the choice of metric through which to measure equality determines what type of human advantage we prioritise. For this question, Sen (1993: 30) argues that: what we should prioritise is capability, which he defines as 'a person's ability to do valuable acts or reach valuable states of being.' It is a form of substantial or positive freedom that

'represents the alternative combinations of things a person is able to do or be' (Sen, 1993: 30). The capability as the priority emphasises that people's life quality is determined not merely by their actual achievements but also by the options they have, and opportunities to choose. In Sen's (1999: 3) words, 'the freedom to achieve well-being is closer to the notion of advantage than well-being itself'.

The CA, which provides an alternative for evaluating human advantage, is relatively emergent. Research of the CA in sociology and sociology of education has an even shorter history but has evolved rapidly over recent years. Recent works from Robeyns (2003); Terzi (2005); Hart (2018), Unterhalter and Walker (2007), Biggeri et al. (2011) offer insightful contributions. Drawing on the CA, the evaluation space was extended beyond students' achievements to encompass what matters more intrinsically: their opportunities to achieve. The CA, therefore, offers a way to evaluate real educational advantage and its relevant issues such as equality, exclusion and marginalisation. Following Sen's advocation, instead of the admission system and policy, participation data, resource distribution and human relations, I will utilise capability as a metric to measure elite doctoral school access equality in this study.

Apart from Sen, I also found that Nussbaum contributed a lot by distinguishing different capabilities within the CA. Nussbaum (2005) distinguishes capability into three types: basic capability, internal capability and combined capabilities. The definitions of these capabilities can be found in **Table 3.2** below (Nussbaum, 2005). The distinction between internal capability and combined capability draws our attention to the relationship between individual capability and social arrangements. Nussbaum (2005: 85) argues that 'the distinction between internal and combined capabilities is not a sharp one', but it is vital to differentiate the internal readiness of individuals and the external social contexts and circumstances that support or hinder them. For instance, some students may meet the admission requirements (have internal capabilities), but if their parents object to their

PhD application (the constrained external conditions), they still cannot successfully access elite doctoral schools. In the following, when I mention capability, I mean combined capability according to Nussbaum's category.

Table 3.2 Definitions of three types of capabilities identified by Nussbaum

Type of capability	Definition
Basic capability	'the innate equipment of individuals that is the necessary basis for developing the more advanced capabilities, and a ground of moral concern'.
Internal capability	'developed states of the individual herself that are, so far as the person herself is concerned, sufficient conditions for the exercise of the requisite functions.'
Combined capability	'internal capabilities combined with suitable external conditions for the exercise of the function'.

3.2 Selection of basic capabilities

In this section, two questions will be discussed. The first question is, what capability list is appropriate for this study? To answer this question, I will compare different types of capability lists (in particular those proposed by Nussbaum and Sen) and argue that we need a context-specific basic capability list generated through democratic processes. The second one is how the capability list should be generated. This question is crucial because it affects a list's political or academic legitimacy. To answer this question, I will introduce Robeyns' procedure approach and how it could be used to satisfy the purpose of this study.

3.2.1 Types of the capability list

Although providing an alternative measurement of human advantage and relevant issues, Sen did not explicitly explain how to empirically use his CA for specified purposes, making it extensively criticised and controversial (Walker, 2006; Terzi, 2005; Hart, 2013). Nussbaum (2003: 33) criticised Sen's CA as 'too vague' and lacking 'commitments about substance', which means that its guidance in comprehending social justice and equality is

highly restricted. Nussbaum argues that we need to specify a capability list to achieve substance. Correspondingly, Sen (2004) also states that he is a supporter of the necessity to generate a capability list premised on understanding what we are doing, in particular 'that we are getting a list for a particular reason, related to a particular assessment, evaluation or critique' (Sen, 2004: 79).

However, there is an ongoing debate among proponents of the CA and those who believe we need a capability list over what capability list we need. Their views can be divided into two categories; one assumes the capability list should be universal, and the other argues it should be context-specific. The first group of ideas is represented by Nussbaum (2003: 33), who believes that although people may hold 'a wide range of divergent reasonable comprehensive doctrines' of what can be counted as good and valuable, we should 'specify a definite set of capabilities as the most important ones to protect'. Such specification is vital because truly human functioning could only be achieved through 'the proper function of government', which demands that it 'make available to each and every member of the community the basic necessary conditions of the capability to choose and live a fully human good life, with respect to each of the major human functions included in that fully good life' (Nussbaum, 1993: 265). 'We need to have some idea of what we are distributing, and we need to agree that these things are good' (Nussbaum, 1998: 314).

In 2000, grounded in analytic philosophy and political liberalism, Nussbaum (2000: 78) put her belief into practice and endorsed a list of ten 'Central Human Capabilities', which comprises life; bodily health; bodily integrity; senses, imagination, and thought; emotions; practical reason; affiliation; other species; play; and control over one's environment. She claimed that the ten capabilities are basic entitlements as well as 'a minimum threshold' for human beings in all societies to choose and live an entire life with dignity (Nussbaum, 2005: 43). The absence of any component on the list would fail human flourishing. With the capability list, Nussbaum draws people's attention to intolerable levels of human

suffering and conveys the issues of injustices and inequality worldwide. Although Nussbaum (2005: 58) concedes that her capability list was open-ended and humble and should always be contested and remade (she was unclear about who will do this and in what method), her main point, which makes her contribution unique, was that we 'need to have an account, for political purposes of what the central human capabilities are, even if we know that this account will always be contested and remade'. Nussbaum's list receives extensive criticism since it is highly prescriptive, universal and lacks the rigorous process of public deliberation (Robeyns, 2003; Sen, 2004). However, Nussbaum claims that her effort is an essential first step. Similarly, Clark (2005: 7) also argues that Nussbaum's capability list successfully provides 'a starting point for discussion'.

In contrast, Sen has made a broader and less specified claim. He robustly denies the possibility of specifying a definitive list of essential human capabilities that is universal and cross-cultural and argues that the capability list should be context-specific and aimed at a determined purpose. Although he admitted that Nussbaum's universal capability list was 'extremely useful' for fighting against deprivation, he also criticised it for being insensitive to the diversity of socio-cultural contexts (Sen, 2005). Different cultures may value different ways of living, so 'one canonical list, based only on theory and usable for every purpose, is problematic' (Sen, 2005: 335). Sen referred to his work with Dreze on public action and hunger as an example, in which he generated a list of capabilities to be developed through education and named it the human development index, which is suitable for the particular context of India. He argues that sometimes, 'for another practical purpose, we may need quite a different list' (Sen, 2005: 159). In other words, each practical application of the CA will require its own capability list. I align myself with Sen's view regarding the context-specific feature of the capability list. Accordingly, what I will do in this study is to ascertain what capabilities constitute elite economics doctoral school access in China and produce a working capability list on this determined context and specific purpose.

Another feature of the capability list underlined by Sen was finite and purpose-driven. Terzi (2005: 35) argues that scholars could merely indicate potential capabilities in practice with particular focuses instead of offering a 'complete and exhaustive' list. Terzi's argument echoes Sen's term of basic capability. Sen used the term to refer to the subset of all capabilities relevant to some essential beings and doings to satisfy 'certain crucially important functionings up to certain minimally adequate levels' (Walker and Unterhalter, 2007: 26)[9]. It is crucial when trying to generate a capability list to be clear about what the list is concerned about and what it is supposed to do. Putting this point into practice, in 2007, concerning education as one of the fundamental functionings to lead a good life, Terzi put forward a list and named it in Sen's term: the list of basic capabilities for educational functioning. In addition, Sen also generated a basic capability list to drive the issue of poverty. In that study, he referred to poverty as 'basic capability failure' (Sen, 1992: 109). Comparatively, I will address the Chinese students' elite economics doctoral school access as basic capability fulfilment in this study.

As for how to draw up a context-specific basic capability list, Sen (2005: 160) highlighted 'the productive role of public discussion, social agitation and open debates' and the significance of reaching collective and reasoned determinations. According to Sen, in matters of social justice and equality, the processes through which we arrive at an outcome are as crucial as the outcome themselves. Based on this fact, Sen (1997) distinguishes between the culmination outcome, the narrowly defined outcome and the comprehensive outcome, which includes aspects of the choice-making process and the identity of the decision-makers and argues that the second one is more critical. Putting this argument into practice, Sen claims that the democratic process is 'both valuable in itself and valuable for the subsequent scrutiny of policy implementation, its success and failures' (Walker and Unterhalter, 2007: 179).

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[9] Please note that Sen's basic capability is totally different from Nussbaum's basic capability we had discussed before.

Regarding the selection of basic capabilities, Sen does not believe that pure analytic theory could substitute for the processes of democracy or that a capability list could be generated irrespective of public values. Therefore, unlike Nussbaum, Sen's approach to selecting capabilities was grounded in participatory human development. Sen emphasises that people, in particular those affected by relevant policy and practice, should exercise their freedoms to participate in social decisions (if they so choose) and, more explicitly, decide on what counts as basic capabilities. In Sen's (1999: 242) own words, all the social members 'should be able to be active in the decisions regarding what to preserve and what to let go'. In this way, individuals' voices count, making them active participants in social change. Moreover, Sen (2004: 80) also mentioned that we should never insist on 'a fixed forever list of capabilities'. Societies are constantly changing over time, which requires the modification of the capability lists in light of the 'progress in social understandings' (Sen, 2005: 160). According to Sen, such 'negotiation and renegotiation' processes could also be achieved through public deliberation (Hart, 2013: 42).

The underlying logic of these arguments is that Sen (1999: 292) believes freedom is intrinsically significant 'in making us free to choose something we may or may not actually choose' through participating in social discussion and making public decisions. Real democracy is reached through a 'collective and reasoned determination of what are the best policies and capabilities' rather than 'pure theory analysis' (Walker and Unterhalter, 2007: 12). Inferred from this fact, the capability list could never be produced without consulting what the public comprehends and values. As Fabienne (2003) concludes from her analysis of Sen's work: 'taking people seriously as agents entail giving them a chance to be heard, and to be involved in collective evaluations and decisions'. Sen built his CA on his belief that equality and justice do exist in people's minds and could be achieved through 'systematic, cogent and effective use of the general [moral] concerns that people have' (Sen, 1999: 262).

3.2.2 Robeyns' procedure approach and production of the capability list

The previous discussion reveals one fact: Sen advocates that the evaluative space of inequality and injustice should be capabilities, and in order to do so, we need a context-specific basic capability list generated through fair and consistent democratic processes. Nevertheless, Sen did not stipulate actual capabilities to be considered or provide 'a fully justified account' of the methodology and method to do so (Walker and Unterhalter, 2007: 26). His CA, which is deliberately vague and underspecified, is an integrated body of thought and a normative tool instead of a fully fleshed-out theory, making its further specifications diverse (Robeyns, 2003). As was suggested by Kuklys (2005: 7), 'while theoretically attractive, Sen's approach is difficult to operationalise empirically'. Likewise, Sugden (1993) also expressed his worry about how far Sen's CA is operational. In a word, Sen did not clearly explain how to put his CA down to earth, which was where I found Robeyns' work helpful (Alkire, 2002: 87).

Robeyns (2005: 72) argues that the capability list should be 'explicit, discussed and defended' and always 'speak the language of the debate in which we want to get involved'. It should include 'all the important elements' that are 'not reducible to other elements' (Robeyns, 2005: 72). Robeyns (2005) puts forward five criteria and, based on them, the 'procedure approach' for identifying capabilities. The five criteria include the criterion of explicit formulation, the criterion of methodological justification, the criterion of sensitivity to context, the criterion of different levels of generality, and the criterion of exhaustion and non-reduction. Robeyns (2005) repeatedly stresses that producing the capability list requires careful attention and strategies to avoid androcentric and other potential biases. Due to this, she further initials a procedure approach for researchers to generate the capability list in a standardised and valid manner. Robeyns (2005) emphasises that because her procedure approach includes some but not many public debate processes, it is appropriate for measurement and evaluative issues rather than

policy or political decisions, as the latter purpose requires more complex issues to be discussed and deep disagreements to be solved.

Methodologically, Robeyns' (2005) procedure approach could be separated into four steps. The first step involves unconstrained brainstorming to draw up an ideal capability list without considering factors such as data limitation, research design and feasibility. The second step is to draft a more pragmatic capability list by engaging with practical situations and relevant data. This step helps to root the capability list in the local contexts and experiences of people engaged. Robeyns (2005) stresses that it is beneficial to engage those who were less familiar with this step, such as, in this study, working-class and female students. The third step mainly compares the generated capability list (through the second step) with other capability lists (including the ideal capability list generated in the first step and the capability lists initialled by other researchers). The last step involves debating and discussing the capability list with as many others as possible through the collective tutorials, seminars, academic conferences, publications, and hopefully, this thesis, and based on them, making subsequent revisions. Because this process requires long-term and continuous efforts, and some might happen in the future, it will not be discussed in depth in this thesis. The last two steps echo Sen's emphasis that we must reflect on our capability list by taking account of changing contexts and noting that a universal and fixed list 'would deny the possibility of progress in social understanding and also go against the productive role of public discussion, social agitation and open debates' (Sen, 2005: 160). This research follows Robeyns' procedure approach for generating the capability list for Chinese students' elite doctoral school access.

3.3 Bourdieu and the development of basic capabilities

After determining that the metric used to measure elite doctoral school access equality was capability and that a capability list would be generated through the procedure

approach, the next decision facing me was how to analyse the selected capabilities in the basic capability list and relate them to social class and gender issues. There were two possible choices. The first was to analyse the distribution of identified capabilities among different social classes and gender groups. The second was to analyse the different experiences in developing the identified capabilities among students of different social classes and genders. The former of the two emphasises outcome equality. The latter focuses on process equality, which was more in line with Sen's arguments in his CA. According to Sen (1993: 30), capability refers to 'the alternative combinations of things a person is able to do or be'. When interpreting topics such as freedom and equality, it is what people could achieve (people's capabilities) that must guide the analysis rather than what they actually achieved. In other words, Sen believes that we should concern more about process equality than outcome equality.

In general, what I wanted to do in this study was to compare students' experiences regarding the development of basic capabilities. Therefore, a tool that could depict and practically explain capability development processes was needed. I believe that a tool with the interpretive ability and meeting the above requirements must be context-specific. This point was also acknowledged by Sen (1999): since social contexts may be different from one another, the CA needs to be augmented with additional context-specific theories. Therefore, Bourdieu's social reproduction theory, particularly the concepts of capital, habitus and fields within it, attracted my attention (Mottier, 2002). I found Bourdieu's social reproduction theory appealing because it conceptualised resource and separated it into different forms, echoing Sen's notion of the commodity. In addition, Bourdieu also provided discussions on the accumulation, transmission and conversion of resources, which resonates with Sen's notion of the conversion process.

Bourdieu's notions of capital, habitus and fields are widely referred to in sociological and educational studies, and there exist different interpretations of these notions (indeed,

Bourdieu's interpretations of these notions were somewhat fluid). This section will provide an overview of these notions and their interpretations to facilitate the following discussions. Due to the depth and richness of Bourdieu's work, it is impossible to give a complete account of the social reproduction theory in this thesis. Hence, I will only concentrate on what is relevant to the research topic.

3.3.1 Capital

Bourdieu's conceptualisation of capital is similar to Sen's commodity that might be converted into capability. The difference is that Bourdieu (1986) went beyond the commonly understood resources and classified capital into different forms, including cultural capital, social capital and economic capital, which enriched people's understanding of social difference and human advantage in more complex terms. Through capital in various forms, Bourdieu emphasised that social structure is not a simple hierarchy determined by economic factors alone but a complicated space in which different resources work together to define people's social positions.

According to Bourdieu (1986), capital in various forms can potentially produce profits and self-reproduce in identical or expanded forms. More importantly, Bourdieu (1986: 241) stressed that capital is 'a force inscribed in the objectivity of things', making them unequally possible or impossible. The concept of capital has been widely applied in sociological and educational research. It is closely related to the topic of this study because its distribution strongly impacts elite doctoral school access equality.

Cultural capital

'It takes more than measured ability to do well in school' (DiMaggio, 1982: 189). Bourdieu (1986) initially put forward the notion of cultural capital to interpret the unequal academic achievements of students with different social class backgrounds. He noticed that the

profits students could obtain in the academic market are significantly different, and one of the main reasons behind this phenomenon is the unequal distribution of cultural capital. In Bourdieu's (1986) view, his notion of cultural capital was generated as breaking with the traditional wisdom that attributes educational success or failure to natural aptitudes like talent and intelligence.

According to Bourdieu (1986: 243), cultural capital means 'access to characteristics, knowledge, skills and forms of expression that are culturally valued'. It encompasses an array of orientations, preferences, linguistic competencies and manners, which, in Bourdieu's (1977: 82) terms, are 'subtle modalities in the relationship to culture and language'. In Bourdieu's (1979) view, cultural capital can be separated into three types: cultural capital in the embodied state, which corresponds to people's enduring dispositions and styles of the mind and body; cultural capital in the objectified state, which is relevant to the consumption of cultural goods such as books, pictures and instruments; cultural capital in the institutionalised state, which coincides with the processes through which cultural capital is materialised into formal educational certificates like academic degrees and diplomas and conferred on its holder some degrees of constant, conventional and legally guaranteed cultural value. Bourdieu (1996) later added that cultural capital in the institutionalised state is similar to distinctive signs in the classifiable practices or judgements, distinguishing one social class from others.

Bourdieu (1986) highlighted that the distinguished social classes not only could purchase cultural capital in the objectified state but also possess cultural capital in the embodied state to appreciate them. Moreover, Bourdieu (1986) pointed out that unlike monetary resources, property or even titles of nobility, cultural capital in the embodied state, as an integral part of people, cannot be exchanged, purchased, or transmitted instantaneously by gift or bequest. Although it could be acquired unconsciously without any deliberate inculcation, its accumulation requires specific pedagogical action from early childhood,

time and economic investment by parents and significant others and hired professionals to sensitise learners to cultural distinctions. In Bourdieu's (1984: 66) words, its accumulation depends on 'total, early, imperceptible learning, performed within the family from the earliest days of life'. The extent of these processes may vary depending on various factors, including but not limed to society, social class and period.

The application of Bourdieu's notion of cultural capital in educational research can be traced back to the study conducted by Paul DiMaggio in 1982, aiming to fill out the 'status attainment model' (DiMaggio, 1982). Following Max Weber's (1978) concept of 'elite status cultures', DiMaggio defines cultural capital as 'specific distinctive cultural traits, and styles of individuals who share a common sense of honour based upon and reinforced by shared conventions' (DiMaggio, 1982: 189). DiMaggio's study set the stage for various studies utilising Bourdieu's notion of cultural capital by linking cultural capital with prestigious, 'highbrow' aesthetic pursuits and attitudes (Lareau and Weininger, 2003). For instance, De Graaf (2000) measured cultural capital through 'familiarity with the beaux-arts'. Sullivan (2001) referred to it as students' familiarity with the dominant culture in the society, especially their ability to use 'educated language'. However, some other researchers believe that these understandings are too narrow and we need an expanded interpretation of cultural capital.

In his book Distinction, Bourdieu did relate cultural capital to familiarity with 'highbrow' culture when analysing how people's taste in music, paintings, and clothing differs in various fractions of French society. However, this book did not consider the educational process, nor did it provide evidence on the contribution of familiarity with 'highbrow' culture to school success. In another work that has inspired many researchers, Bourdieu employed measures of highbrow cultural participation, including museum visits, theatre attendance, and book appreciation, to indicate cultural capital in education. However, Bourdieu indicates that this understanding of cultural capital was developed in the French

context and could reflect only its peculiarities. We might need different interpretations when exploring other contexts.

Some researchers had understood cultural capital differently. McDonough (1997) considers cultural capital as 'first-hand' knowledge of the school admission process possessed by parents, particularly those that cannot be collected from school. Reay (1998) refers to cultural capital as parents' confidence to consider themselves as educational experts and effectively communicate with the teacher. Later, in another article, she added that students' confidence, certainty and sense of entitlement are a form of cultural capital (Reay *et al.* 2005). Blackledge (2001) discovers that the English level of immigrant parents in the UK is a type of cultural capital because it is crucial for those parents to have sufficient English language skills to meet teachers' standards for parent involvement. These definitions share a common focus: 'the standards that educators use to evaluate students or their parents' (Lareau and Weininger, 2003). These studies, concentrating on the strategies in which cultural resources facilitate families' compliance with institutional standards, point the way towards an expanded interpretation of cultural capital. Following these attempts, in a study carried out by Lareau and Weininger (2003: 2), they advocated that researchers should pay attention to the 'micro-interactional processes' through which students, parents and significant others' usage of knowledge, competence and skill come into contact with institutionalised criteria of evaluation as these people's abilities to deploy cultural capital can be powerfully gendered and classed. I heeded this advice.

However, cultural capital is not the only capital that plays its role in educational processes. It works in conjunction with other forms of capital, including social capital and economic capital, to constitute social advantage and disadvantage, which we will discuss in the following parts.

Social capital

Bourdieu's (1986) notion of social capital refers to the sum of actual or potential social resources accrued to people that can be used to promote their interests. It is made up of a durable network of institutionalised relationships of mutual acquaintance or recognition, which provides its members with entitled credentials and collectively owned actual or virtual resources (Bourdieu, 1986). In other words, social capital is the product of enduring efforts at the institutions, through which long-lasting and helpful relationships that can secure both material and non-material profits are produced and reproduced. According to Bourdieu (1986), social capital is generated through social processes between the family and broader society. It works within a specific social network in various forms, such as social obligations, symbols and exchanges to maintain and reinforce boundaries, define group membership, generate a sense of belonging and imply durable obligations subjectively felt (such as feelings of respect and gratitude) or institutionally guaranteed (rights) (Bourdieu, 1993).

In Bourdieu's (1986) view, the amount of social capital available to an individual is determined by the size of the social network they can mobilise and the volume of capital in different forms possessed (in their own right) by their connected people. It results from investment strategies that consciously or unconsciously aim to construct or reproduce social relationships that could provide benefits in the short or long term. One of the main features of social capital is that it transfers contingent relationships (such as neighbourhood, kinship and classmates) into durable relationships that are elective and necessary (Bourdieu, 2022).

This study will focus on guanxi, a variant form of social capital in China. Yang (2002) believes that guanxi is deeply rooted in Chinese culture and will be persistent regardless of institutional changes. In recent years, guanxi has been widely acknowledged as an exhilarating viewpoint to comprehend the Chinese way of life and therefore implemented

in an extensive range of educational and sociological discussions. For instance, in her study, Chang (2011) defines guanxi as a purposive network behaviour, seeing instrumental exchanges at its core. In Chang's view, guanxi refers to a series of network strategies to bridge social relationships of power, embed trust and reciprocity, and provide access to scarce resources. According to Chang (2011), forms of guanxi are constantly changed and adjusted, and new forms are legitimized in the changing institutional contexts. Chang's argument is consistent with recent findings in higher education access in China, showing that guanxi is playing an increasing role due to institutional uncertainties and fierce admission competition (Sheng, 2014; Xie and Postiglione, 2016). This fact lays the foundation for this research.

Economic capital

Bourdieu (1986) defines economic capital as wealth in various forms, including the most basic forms, like cash and money or more institutionalised forms, like property rights and assets. According to Bourdieu (1986), economic capital, either inherited or generated through exchanges between the individual and the economy, is at the root of other types of capital and is critical in producing and reproducing human advantages and disadvantages. Cultural and social capital can be derived from economic capital but at the cost of some degrees of transformation efforts (which will be discussed in the next section).

Transfer of capital

Bourdieu's notion of capital provides a method to explore the advantages that accrue to people: people might be more or less well off, depending on the types and amounts of capital they possess. The various capital portfolios also determine people's different living ways. Bourdieu (1993) provided the roulette game as an example: people with abundant

red tokens (cultural capital) while a few yellow tokens (economic capital) would not play with the same strategies as those with many yellow tokens while a few red ones. Usually, the more red tokens (cultural capital) they possess, the more they would stake on the red squares (the academic system). However, Bourdieu underlined that looking into the capital portfolio alone would be limited. We should also consider the processes of transfer related to it.

Firstly, Bourdieu envisages the processes in which one form of capital can be transferred into another. For instance, the cultural capital contained in an educational qualification could be transferred into economic capital by securing its owner a particular type of job. The social capital obtained through network activity could be transferred into economic capital through the business exchanges it generates. Moreover, Bourdieu (1986) highlighted that apart from the fact that people from all walks of life may accrue different amounts of different types of capital, what also matters is their differential ability to convert one form of capital into another. Bourdieu (1986) provided an example, two people who graduate from the same school may yield different 'rates of profit' from their similar 'scholastic investment'.

Secondly, Bourdieu (2010: 74) distinguishes between acquired and inherited capital and remarks that people who possess and inherit substantial cultural capital enjoy dual title to cultural notability: 'the self-assurance of legitimate membership and the ease given by familiarity'. Bourdieu's distinction draws our attention to the inter-generation transfer of capital, which combines capital volume with adult-child interactions. He stresses that capital accrued within the families alone is not sufficient. Parents' efforts to generate opportunities for their offspring to access family capital and utilise them to guarantee success are also crucial. For instance, well-educated parents might transfer cultural capital to the next generation by spending time reading with them, but busy or impatient yet well-educated parents might not. Moreover, the inter-generation transfers of capital

are not always positive. At the harshest end of the spectrum, they can also be harmful, such as those that happen in families which rely on the younger generations to support older members.

Most of the time, the two types of transfers work simultaneously. One form of capital might be cashed in for other forms of capital deemed valuable in a competitive field while transferring from parents to children. For example, parents might purchase books and other educational resources or pay for cultural-rich activities to convert their possessed economic capital into cultural capital and secure their offspring's academic success.

3.3.2 Habitus

As the most contested concept in Bourdieu's theoretical framework, habitus is criticised for being in danger of 'latent determinism and inaccessibility to empirical study' (Reay et al., 2005: 21). Likewise, I also found it challenging to find a universal definition for habitus. However, Bourdieu argues that the concept of habitus is central to his methodology of structuralist constructivism representing his attempt to reconcile dualisms of agency-structure and objective-subjective (Bourdieu, 1986). According to Bourdieu (1990), through the notion of habitus, the practice of agency is related to the social structure.

Bourdieu (1993: 88) describes habitus as 'a power of adaptation. It constantly performs an adaptation to the outside world which only occasionally takes the form of radical conversion'. Habitus shapes people's dispositions, which reflect the social and political contexts in which they are acquired. It emphasises a 'socialised subjectivity', which could be used to understand how social relations become constituted within the self and how the self is constitutive for social relations. According to Bourdieu (2010), habitus is a socialised and structured body operating 'below the level of calculation and consciousness'. It contributes to the comprehension of social variation, which Bourdieu (1990) considers a type of embodied social structure, a way of judgment and perception

derived from people's societal position. Such social variation, in return, impacts the formation of the habitus, which is manifested in people's durable ways of 'standing, speaking, walking, and thereby of feeling and thinking' (Bourdieu, 1990: 70). In other words, habitus is 'a system of lasting and transposable dispositions which, integrating past experiences, functions at every moment as a matrix of perceptions, appreciations and actions and makes possible the achievement of infinitely diversified tasks' (Bourdieu and Wacquant, 1992:18).

While habitus leaves space for individual agency, it stresses the predisposition of people towards specific ways of behaving. It can be internalised into people's dispositions, generating not only 'meaning-giving perceptions' but also 'meaningful practices' in an unseen or unconscious manner (Bourdieu, 2010: 166). Therefore, habitus can predict practices as an 'objective basis for regular modes of behaviour, and thus for the regularity of modes of practice'. Agents equipped with certain habitus will behave in certain ways under certain contexts (Bourdieu, 1990: 77). Meanwhile, improbable practices might be rejected as unachievable, and only a limited range of choices is considered thinkable. Regarding school access, the situation might be, for instance, that where a family has no higher education history, the members within it may have dispositions that predispose them to be unconfident and self-excluded. In this way, habitus offers a powerful thinking tool for the researchers to look into and understand the less visible and under-researched world of students' minds and choice-making processes.

In addition, by suggesting a degree of uniformity, Bourdieu made habitus possible to comprehend social class and gender issues. Although Bourdieu (1993: 46) admits that details of people's social trajectories might diverge from one another, in other words, 'just as no two individual histories are identical, so no two individual habituses are identical', he also mentioned that generally speaking, there are classed or gendered experience, which leads to the habitus of class or gender. Bourdieu (1990: 81) also makes efforts to

justify his collective definition of habitus and argues that interpersonal relations are never individual-to-individual relationships alone, as they are in appearance, 'the truth of the interaction is never entirely contained in the interaction'. Moreover, Bourdieu also refers to the habitus of class in his own study, such as his study of Distinction in French society in 1984.

Habitus is a complex interplay between past and present and should be understood with both personal history and the whole collective family and social history. It is acquired in earlier stages of socialisation and consolidated by people's subsequent choices in life (Robbins, 1991). To be more explicit, although habitus is produced from early childhood experience, especially from socialisations within the family, it is continually modified when people encounter the outside world (DiMaggio, 1982). From this perspective, in this study, Bourdieu's concept of habitus was developed and extended into familial habitus and institutional habitus, similar to what was suggested by McDonough (1997) and Reay et al. (2005). As was previously discussed, habitus is generated, realised and initially transmitted in the family setting. Hence, familial habitus refers to an aspect of habitus that predisposes individuals to unconsciously engage in the processes of reproduction at home (Bourdieu, 1990). However, as time goes by, schooling acts to provide another disposition. Such type of school effect, which can be viewed as the influence of a cultural group on people's behaviours mediated through organisations, is termed by some scholars as institutional habitus. According to Reay et al. (2005), institutional habitus also has a history and, in most cases, could be established over time. Due to its collective nature, it is less able to change than the other form of habitus. Bourdieu and Wacquant (1992: 134) explained the relationship between different types of habitus: habitus is permeable and responsive to the surrounding circumstances, 'current context is not just there to be acted upon, but are internalised and become yet another layer to add to those from earlier socialisations', hence familial habitus is at the basis of the structuring of

institutional habitus, and familial habitus and institutional habitus together are at the basis of all subsequent experiences.

3.3.3 Field

The last notion of Bourdieu this research focuses on, which is highly related to other notions we had discussed before, is field. The word 'field' comes from the French 'le champ', which refers to a land area, a field of knowledge or a battlefield. The last definition is closest to Bourdieu's notion of field among them. According to Bourdieu, field can be viewed as specific social settings where potentialities of the habitus are activated, ranging from particular ones like classrooms and workplaces to more abstract and broader concerns such as the field of politics or law (Silva, 2004). It allows researchers to analyse 'a configuration of relations' between individuals and the social world, which are essentially mediated by various forms of capital in a context-specific way (Bourdieu, 1993: 72).

Field is inseparably interrelated to habitus. In the view of Bourdieu (1990), habitus is activated when it is connected to the field, and a similar habitus can result in different positions or practices depending on the field. In return, the field becomes a meaningful world which is endowed with value and sense with the help of habitus. The struggle for privileges is joined when people establish rules and regulations in different fields, which Bourdieu terms habitus. All fields are internally structured regarding power relationships, in which people make efforts to gain dominance and avoid subordination. Bourdieu (2010) underlines two critical aspects of the habitus-field relationship: firstly, people's positions in a field are determined by their ability to perform appropriately and alignment with the recognised preferences or tastes associated with the field; secondly, people could benefit from their ability to differentiate and appreciate which preferences and tastes are representative of a specific field. Moreover, Grenfell (2008) stressed that habitus and fields

could produce a powerful synergy through which social reality exists twice, in fields and habitus, in things and minds, outside and inside social agents. Therefore, when habitus encounters the field in which it is produced, it is like a 'fish in water' who does not feel any weight and takes everything for granted (Bourdieu and Wacquant, 1992: 127). In contrast, when habitus encounters an unfamiliar field, it could result in transformation as well as ambivalence, uncertainty and insecurity.

In addition, field is also relevant to capital. Bourdieu (1992: 72) defined field as 'a configuration of relations' between agency and structure mediated by capital in various forms and argued that the effectiveness of capital emanates from the organisation of the social world into different fields. Fields are like games with specific rules, although 'much more fluid and complex than any game that one might ever design' (Bourdieu and Wacquant, 1992: 104). Capitals are crucial factors in playing these games, as well as the players' dispositions and comprehensions of the rules (Bourdieu and Wacquant, 1992). To be more explicit, whether or not people could apply capital in different forms for social benefits and the efficiency of such applications depend on their ability to understand unwritten rules of the field, as well as their confidence to deploy the capital within the field (Bourdieu, 1986).

Bourdieu (1990) argues that the interactions between habitus, capital, and field generate logic of practice. When habitus encounters a field of which it is the product, it is like 'a fish in water' (Bourdieu and Wacquant, 1992: 127). Nevertheless, when habitus finds itself in different fields or fractions within a field or when social changes affect the social field, there may be disjuncture which will generate transformation and change as well as ambivalence, insecurity, and disquiet at a conscious level to develop new judgements towards facts. Field is like a game with rules. People may have different capitals with which to play as well as diverse understandings of the rules of the game (Reay et al. 2015). Bourdieu (2009: 67) argues 'the earlier a player enters the game and the less he is

aware of the associated learning'. Field can be considered an arbitrary social construct and consensual variation based on collective belief in the game (Bourdieu, 2009). People's abilities to develop a sense of the game in a specific field differ due to their backgrounds. For those with privileged backgrounds, such collective belief commences since early childhood to ensure advantages.

3.4 Combining Sen with Bourdieu

In this section, I will highlight the ways in which Sen's CA and Bourdieu's social reproduction theory could be combined to enrich each other. The synthesis leads to the Sen-Bourdieu theoretical framework, a multidisciplinary model that illustrates the dynamic processes through which students successfully gain elite doctoral school access and through which relevant social class and gender inequalities are generated. The Sen-Bourdieu theoretical framework will be the primary conceptual tool in this study to make sense of the empirical data.

3.4.1 Sen-Bourdieu theoretical framework

The Sen-Bourdieu theoretical framework comes into play after the generation of the basic capability list. It is mainly used to answer questions such as: Are basic capabilities distributed equally and fairly between students with different social class and gender backgrounds? Do some students get more opportunities to obtain relevant resources and convert them into capabilities than others, and if so, how do they happen? In short, it is designed to explain the developments of basic capabilities and the effect of social class and gender on these processes.

The fundamental logic of the Sen-Bourdieu theoretical framework is that basic capabilities, which measure human advantages and relevant equality issues, are transformed from resources through specific conversion processes. This fundamental logic and the main

concepts on the logic chain, including resources[10], conversion processes and basic capabilities, originate from Sen's CA. Bourdieu's social reproduction theory can be integrated into this logical chain first because his conceptualisation of different forms of capital that people's families possess enriches the understanding of resources. Second, Bourdieu's concepts of habitus and fields offer a dynamic interpretation of the structural factors that could impact conversion processes. For some students, the field may operate in their favour where their habitus, tastes and position in the 'school access game' play to some degree of advantages. Contrarily, others may find themselves marginalised outsiders who confront strong resistance. In addition, another factor that affects conversion processes is the agency, which was mentioned by Bourdieu in his social reproduction theory and emphasised by Sen in the CA. I argue that Sen's CA and Bourdieu's social reproduction theory are not mutually exclusive but can complement each other to explain questions related to elite doctoral access equality in China. Please see **Figure 3.1** below for the Sen-Bourdieu theoretical framework.

Figure 3.1. Sen-Bourdieu theoretical framework
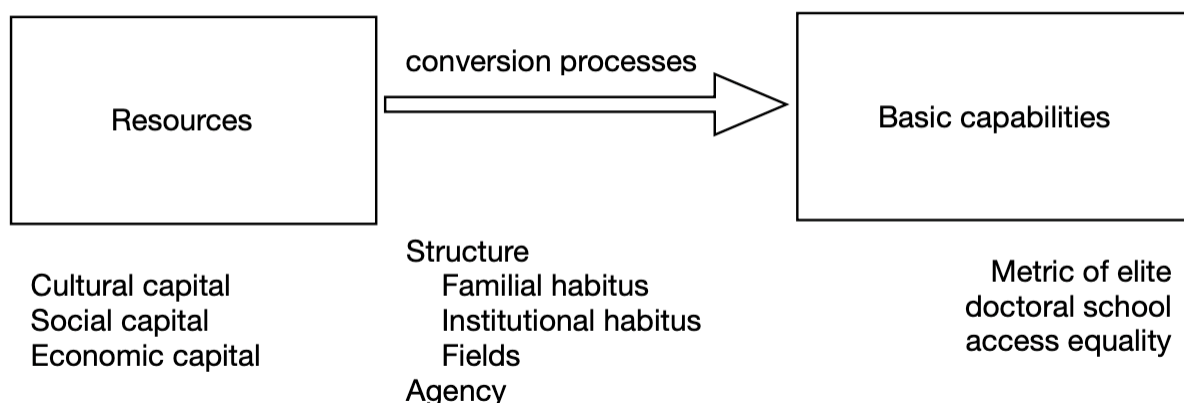
From the Sen-Bourdieu theoretical framework, we can see that the potential impacts that social class and gender have on the development of basic capabilities are twofold; first,

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[10] Sen's CA is formulated from an economic perspective. Hence his original term is commodities. The meaning is similar to resources.

they may impact the distribution of resources, and then they may impact the conversion of these resources into capabilities. Moreover, it is worth mentioning that the above-discussed dynamic processes are iterative and continuous. Sometimes the basic capabilities may, in turn, enhance the accumulation of resources. However, this study focuses only on time-based explanations of the development of the capabilities relevant to elite doctoral school access equality in China.

3.4.2 Discussion of the Sen-Bourdieu theoretical framework

In this section, the similarities and differences between Sen and Bourdieu will be discussed for the rationale of their synthesis and the development of the Sen-Bourdieu theoretical framework. Please first see **Table 3.2** below for a general overview.

Table 3.2. Differences and similarities between Sen and Bourdieu

	Sen	Bourdieu
difference	evaluate inequality	explain inequality
	recognise the role of culture	explain the role of culture
	more optimistic regarding the dynamic nature of agency	more pessimistic regarding the static nature of structure
similarity	concern about educational inequality	
	expand the meaning of resources beyond the economic	
	emphasise the conversion processes	

Similarities

Although Sen's CA and Bourdieu's social reproduction theory are rooted in different research fields, they share much in common, providing the basis for developing the Sen-Bourdieu theoretical framework. Bourdieu is a sociologist, and Sen is an economist. Unlike Bourdieu, whose social reproduction theory was designed to explore educational inequalities, Sen's CA was initially applied in the arena of human development. There is no doubt that at the beginning, education was under-theorised and under-researched in the

CA (Walker, 2006; Flores-Crespo, 2007; Terzi, 2005; Walker and Unterhalter, 2007; Biggeri et al., 2001). As was argued by Saito (2003: 17): even though Sen's CA has received substantial attention from 'philosophers, ethicists, economists and other social scientists, it has not yet been critically examined from an educational perspective'. However, in recent years, the potential of the CA has become more widely recognised. As a result, an increasing number of educationalists have applied it in the educational field and explored matters of equality. In conclusion, Sen's CA and Bourdieu's social reproduction have both dealt with educational issues and are concerned about inequality, shaping their first similarity.

Secondly, Sen and Bourdieu both expand the meaning of resources beyond the economic. According to Pogge (2002), a shared commitment between Sen and Bourdieu is that they both emphasised the intra-family distributions and resources available to individuals. Moreover, they did not mean economic resources alone when they mentioned resources. Traditional economic studies, influenced by Rawls' utilitarianism, tend to pay close attention to 'assumptions of maximising behaviour, market equilibrium, and stable preferences' (Becker, 1976: 5). However, Sen notes that 'income may be the most prominent means of a good life without deprivation, but it is not the only influence in the lives we can lead' (Sen, 2000: 3). Sen, therefore, specifies in his CA that it is the material and non-material resources together that shape the foundation for developing relevant capabilities. Likewise, Bourdieu also extends the economic views of resources and incorporates social and cultural capital as social resources in his theory.

The last similarity between Sen and Bourdieu is that they both emphasise the conversion processes. Sen (1992) demonstrates that the possession of resources is merely an indicator of human advantages rather than the advantages themselves; we should also consider the conversion processes through which resources are transferred into freedom to achieve well-being (capabilities). Correspondingly, although Bourdieu did not come up

with a clear concept like Sen, some researchers on the social reproduction theory also considered that analysing merely different forms of capital is oversimplified because it is insufficient to guarantee people's advantages (Laureau and Horvat, 1999; Marjoribanks, 2002; Hart, 2019). They suggest that we should also stress recognising the distinction between the possession and activation of resources. For instance, well-educated parents could pass on family capital to their children through relevant activities, but busy yet highly educated parents might not. Bourdieu argues that it is crucial to apply different forms of capital in different fields strategically. To be more explicit, knowing the time and method to deploy capital, and being confident to do so, requires understanding unwritten rules.

Differences

Meanwhile, Bourdieu and Sen's theories also have some differences, which enable them to complement and reinforce each other. Firstly, Sen's CA, which contributes mainly to evaluating and assessing inequality, is 'prescriptive and evaluative, rather than explanatory' (Carpenter, 2009: 355). It successfully provides some ethical principles and, thus, an alternative metric for measuring human advantages and the relevant issues of inequality. As Sen (2006: 50) stated, 'the capability approach is concerned with showing the cogency of a particular space for the evaluation of individual opportunities and successes'. However, simply measuring equality is far from enough to completely answer 'our normative questions' (Robeyns, 2003: 62). Although Sen indicates that it is crucial to consider the broader social-cultural contexts that affect the distribution of resources and the conversion of resources into basic capabilities, he does not provide a precise method for addressing this task. His notion of capability merely depicts conditions of allegedly persisting inequalities without explaining the reasons behind those conditions (Marcuse, 2009; Soja, 2010). In other words, Sen's CA is sociologically limited and did not provide much insight into how social relations were operated and how inequalities were generated.

It needs a descriptive, explanatory theory to be augmented, whereas Bourdieu's social reproduction theory provides an ideal partner. Grounded in the early and generally family and school-led socialisation stages and considering context, Bourdieu offers tools for explanations of educational inequality, which are finely grained.

Secondly, regarding education, Sen emphasises in his studies the role of culture and argues that teachers should draw upon it to transform rather than reproduce inequalities. To be more explicit, if teachers could become conscious of the dominant role of schools as well as themselves in privileging the cultural arbitrary[11] at the expanse of marginalised students' interests, then they may be able to help improve educational inequality. However, despite emphasising the influence of culture, Sen did not explain the mechanism behind it in depth. In contrast, as a result of its context-specific feature, Bourdieu clearly explains the processes through which culture impacts people's choices and values. According to Bourdieu and Passeron (2000: 9), in any society, some kinds of capital and habitus are valued, which creates a 'cultural arbitrary'. It is not determined by scientific logic but rather by the interests of the influential people and at the expense of the less powerful ones. The society then recognises the dominant culture as legitimate and the less dominant culture, often possessed by marginalised social groups, as illegitimacy. Skeggs (2004: 7) explained: 'legitimation is the key mechanism in the conversion of capital to power...capital has to be regarded as legitimate before its value is realisable'. According to Bourdieu and Passeron (2000: 42), the 'major trust of the imposition' of culture recognition comes from exclusion, which 'assumes the guise of self-exclusion' to generate symbolic force. Consequently, some people are excluded from particular opportunities (such as participation in elite economic doctoral schools) and gain a subtle form of disempowerment due to the inhospitable culture. Bourdieu (2000: 843) depicted the situation as 'they easily cross the borders, but with empty suitcases — they have nothing to declare.'

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[11] cultural arbitrary: arbitrary cultural beliefs that exist in a person's unconscious mind who belongs to a specific culture

Finally, Bourdieu's social reproduction theory emphasises 'the relationships between objective social structures and everyday practices' (Webb, Schirato and Danaher, 2002: 1). It foregrounds the static nature of structure and its subtle but still pervasive impacts on facilitating or hindering people's daily actions. According to Bourdieu, social structure, which implies how patterns of social life persist rather than change over time, empowers different groups of people differently. Thus factors associated with it, such as social class, gender and race, will always form the conditions of inequality. Hart (2019: 594) concludes that compared to Sen, Bourdieu is 'more pessimistic regarding the static nature of structural inequalities and the limited power of individuals to eliminate their unjust effects'. Regarding education, Bourdieu's most distinctive contribution was to uncover the processes of maldistribution and silencing through which educational opportunities are reproduced. According to him, the education system is the guilty party that purveys symbolic violence and perpetuates cultural arbitrariness. As was suggested by Naidoo (2004: 457): 'at the heart of Bourdieu's work on higher education has been his desire to expose higher education as a powerful contributor to the maintenance and reproduction of social inequality.' However, Bourdieu received some criticisms arguing that he had taken a deterministic stance and emphasised merely the power of structure, which tells much about the reinforcement of the enduring constraints but little about possibilities to transcend them. His social reproduction theory concentrates on social reproduction rather than social mobility, emphasising pre-reflective dimensions of action (Reay, 2004; Sayer, 2005). Bourdieu himself came from an unprivileged rural family in France. Nevertheless, his theory is limited to explaining his own success at the highest level of the French education system as well as other marginalised people's educational experiences, which rely heavily on another crucial factor: agency.

To be precise, Bourdieu mentioned in his social reproduction theory the concept of game-playing in the field, which indicates that changes in disadvantaged situations are possible

through consciousness, struggle and resistance. The concept emphasises dynamic rather than statistical power, which is close to the notion of agency. According to Hay (1994: 64), agency refers to 'human social action involving choice among the alternatives made available by the enabling features of social structure, and make possible by solid grounding in structure constraints'. Hay (1994: 66) extended it into 'structurally reproductive agency' and 'structurally transformative agency'. Between the two types of agency, Bourdieu's social reproduction theory, although with some degrees of 'transformative potential', is closer to the former, while Sen's CA stresses more on the latter (Mills, 2008: 79). In this thesis, I emphasis its structurally transformative feature when referring to agency and argues that each people is a responsible and dignified human being who is able to make his or her own choice in the light of meaningful goals, rather than being shaped or instructed the way of thinking or doing. The existence of agency allows people 'to be able to change and adapt, and to make good choices in navigating lives' (Walker, 2007: 177)'. Therefore, I concluded above that Bourdieu's interpretation of agency is limited.

In contrast, Sen's CA, which considers individuals as 'primary objects of moral concern' and focuses on their choices and freedom, looks beyond the impacts of structure (Brighouse and Swift, 2003: 358). Although Sen admits that individuals are placed in a social context, and their capabilities emanate from the surrounding environment, which underpins his argument that capability lists should be context-specific, his CA highlights the role of agency and the possibilities of non-reproduction ((Anderson, 2010; Robeyns, 2005). As Dreze and Sen (2002: 7) describe, the CA can be considered the 'people-centred view of economic development that focuses on human agency and social opportunities'. It argues that human beings are naturally free, regardless of any issues relating to power, and possess the capacity to eliminate inequality. The main point to realise this is the agency, which is impacted rather than determined by social norms and

structure. Concerning education, the CA offered a more optimistic view by emphasising the transformative and empowering space of schooling, a space in which social structures are contested and equalities can be formed. Like Bourdieu's social reproduction theory, Sen's CA has received considerable criticism. Some critics argue that the CA is too individualistic and pays little attention to the broader social context (Robeyns, 2005). There needs to be more attention given to how social regulations affect or restrict people's freedoms.

Sen (1999: 6) argues that there is 'a deep complementarity between individual agency and social arrangements'. 'Being free to live the way one would like may be enormously helped by the choices of others' (Sen, 1993: 44). Therefore, the CA needs to be augmented with 'context-specific theory'. In our real life, the actual capabilities, which according to Sen (1999: 6), are social commitments, depend not only on human freedom and agency but also on the nature of social and economic arrangements. Moreover, Bourdieu stressed that (1993) we should never move mechanically and simply from knowledge of production conditions to knowledge of the products because human beings always carry within themselves the genesis of new creative responses, making them capable of transcending the broader social conditions. Hence, the practical logic which defines his social reproduction theory is not the predictable regularity of modes of behaviour but rather the repertoire of possible actions 'that of vagueness, of the more-or-less', which leaves spaces for the individual agency to play its role (Bourdieu, 1990: 78). In general, Sen and Bourdieu's remarks above inspired me to build the Sen-Bourdieu theoretical framework, which reconciles the tensions between agency and structure, internal and external and substantially broadens the questions that could be answered.

3.5 Summary and research questions

In this chapter, I explained how the gap between normative evaluation and practical explanation of school access equality could be bridged by combining Sen and Bourdieu.

The Sen-Bourdieu theoretical framework suggested that we could use the capability as the metric to measure school access equality, and to put the metric into practice, we need to put forward a context-specific and purpose-driven capability list. After generating the capability list, we could then analyse how capabilities in it are developed differently between different people.

As for the development of capabilities, both structural factors and agency play their role. The structural factors, including the unequal distribution of resources and the unequal conversion of resources into capabilities, lead to social stratification. In contrast, the agency helps disadvantaged people succeed, explaining why we could still see some non-traditional students' elite doctoral school access.

Therefore, we have the following research questions in this study:

1. What are the basic capabilities for students' elite doctoral school access in China?

2. How do social class and gender impact students' development of basic capabilities?

    2.1 How do social class and gender impact the distribution of relevant resources?

    2.2 How do social class and gender impact the processes of conversion from relevant resources into basic capabilities?

    2.3 How does agency help to make up for the disadvantages caused by students' social class and gender backgrounds?

IV. RESEARCH GENRE, METHODOLOGY AND METHODS

To practically utilise the Sen-Bourdieu theoretical framework and answer the research questions, I carried out a case study focusing on the economics discipline. China's four most elite doctoral schools of economics (DSOE) were selected to form a single case for further exploration. They were the DSOE of Fudan University (FDU), Peking University (PKU), Renmin University (RMU), and Central University of Finance and Economics (CUFE). The two main research questions dealt with different types of issues (from general to specific ones) and, therefore, were answered sequentially. First, I conducted focus group discussions (four in total, one in each DSOE) and document analysis to answer the first research question. The focus group discussions were held face-to-face in the university's meeting room, each with eight PhD students as the participants. Questions related to what the participants perceived as essential for accessing elite doctoral schools in China were answered during the process. Next, I answered the second research question through semi-structured interviews. Apart from the thirty-two PhD students who took part in the focus group discussions, eight supervisors also participated. In total, there were 40 interviews. All of them were conducted online. Interviewees were invited to share their personal experiences related to the development of the basic capabilities identified before.

This chapter will first discuss the case study genre, justifying its employment, and how the single case constituting four elite DSOEs in China was selected. Then, in the methodology section, I will talk about my philosophical stance, research object, and positions during this study. Finally, I will discuss the methods used in this research. The processes through which focus group, document, and interview data were collected, analysed, and discussed will be presented and explained.

Although this chapter may look like decisions related to the research genre, methodology and methods took place one after the other, the actual situation was different. The

relationship between them is 'more akin to a spiral', with each decision influencing others and being continuously revisited and revised to maintain coherence (Hamilton and Corbett-Whittier, 2013: 2). There was an iterative progression rather than a linear process during this research.

4.1 Research genre: in-depth single case study

This part will first provide the rationale for employing the case study genre. Then I will explain the reason for selecting elite economics doctoral schools in China as a single case for in-depth investigation in this study.

4.1.1 The employment of case study genre

There seems to be terminological confusion in the literature regarding the case study (Adelman et al., 1975; Stake, 1995; Bassey, 1999). Lincoln and Guba (1984: 360) described that: 'While the literature is replete with references to case studies and with examples of case study reports, there seems to be little agreement about what a case study is.' However, as Elliott and Lukeš (2008: 88) suggested, 'definitional questions are appropriately about how one characterises a case as an object of inquiry.' Hence, instead of selecting one specific definition of the case study as the reference, I will highlight this research's unique features to justify the employment of the case study genre and illustrate why it is a valid response to the research questions.

The first characteristic relates to the amount of data collected and analysed. In other words, the number of cases investigated and the depth of investigation. A case is a unit of interest around which there are boundaries for researchers to fence in what they are going to study so that understanding its complexity is achievable. It is an integrated system that can be an individual, a programme, an institution, or a population that exists independently of and prior to the investigation processes (Smith, 1974; Stake, 1994). In

this research, I collected information from all the elite DSOEs that satisfied the standard. These DSOEs together were considered as a case. Usually, the fewer cases explored, the more detailed features can be captured about each of them. Unlike the survey, which investigates large representative samples, this research dealt with only one case, making it possible to gather and analyse a great wealth of empirical data across a wide range of dimensions. By focusing on in-depth information, this research attempts to understand how people operating within the boundary of the case view their world and the relationships, interactions and practices between the case and the wider world.

The second characteristic that builds this research into a case study is the type of data collected and analysed. Recognising the complexity of education settings and the diversity of individual experiences that enhance the complexity, this research formed an archive of qualitative data that is sensitive to the context to gain insights into students' attitudes, beliefs and practices and the meanings they ascribe to their processes of elite doctoral school access. Qualitative data is more robust in reality than quantitive data, which leads to thick descriptions of social life. It can better reveal the educational processes and the various experiences of students from different backgrounds. Furthermore, this research emphasised the holistic nature of the single case, considering it as a whole rather than a loose collection of traits and capturing it in its entirety. As a result, drawing on methods including focus group discussion, interview and document analysis, multiple sources of evidence were gathered to probe deeply into the various parts that constitute the case and the relationships between those parts (Cohen and Manion, 1989). In general, this research collected complex, holistic and multi-layered qualitative data for an inquiry into school access equality in China.

Finally, apart from the amount and the type of data collected and analysed, how these processes happened is also significant. Although it was my actions that generated this study, the whole process did not involve any randomised manipulation of variables to

measure their effects in artificially created settings (Gomm et al., 2000). In other words, instead of creating a single case under experimental conditions and sending out instruments for participants to collect decontextualised evidence, I constructed the case out of naturally occurring social situations where participants experienced the issue under real context. The participants were engaged directly in this study to construct descriptions of culture in which they were enmeshed and understandings of social life from their perspectives. In addition to this, the issues related to objectivity and uniqueness are also essential. Given that individuals have personal experiences and subjective attitudes that impact how they view the world, think of it, and act towards it, I believe that in order to generate knowledge of social life, 'the meanings assigned to it by its own actors' should be incorporated in the study (Hamel et al., 1993: 12). That is to say, 'all knowledge attempts are socially situated', which requires the due weight to be given to the individual experiences and meaning-making processes (Harding, 1992: 444). This argument makes the neutral position or pure objectivity unachievable. Instead, I practised strong objectivity, which viewed culture-wide beliefs as evidence during the research and acknowledged and utilised people's attitudes and values to generate 'socially situated knowledge' (Harding, 1992: 438). Besides, the single case of elite economics doctoral schools in China was portrayed in its own terms to capture the uniqueness. Efforts were made 'to see what others have not yet seen, to reflect the uniqueness of our own lives and to engage the best of our interpretive powers' (Stake, 1995: 136).

In the literature, confusingly, there exist subtle or not-so-subtle discrepancies regarding the nature of the case study and whether it is an approach (Yin, 1983; Stake, 1995; Pollard, 1996), method (Hamel et al., 1993; Gomm et al., 2000; Thomas, 2013), paradigm (Hamilton, 1980; Simons, 1996) or genre (Swales, 2004; Elliott and Lukeš, 2008). The decision related to this question was important because it provided the guiding principles for the research design and how it was conducted and determined where I decided to

locate this study. In this research, the case study was considered as a genre which involves assumptions about how questions about contexts, beliefs, practices, and relationships within the bounded units can and should be captured. The goal was to reconstruct, discover and document cases from sociological and educational perspectives (Stenhouse, 1979). However, the case study genre provided only the primary guidance. There were still innumerable possibilities with respect to strategies and methods for processing the research. The following parts of this chapter look critically at the decisions I made around the case study genre and how it was used to shape data collection and analysis.

4.1.2 Case selection

Selection of single case study

After deciding that this study was going to be a case study, another choice I made was what type of case study it should be. I finally decided that this study should be a single-case study for four reasons. First, a single-case study could better 'question old theoretical relationships and explore new ones' since it could provide a more comprehensive understanding of the subject (Gustafsson, 2017: 3). As Eisenhardt and Graebner (2007: 30) suggested, 'Somewhat surprisingly, single cases can enable the creation of more complicated theories than multiple cases because single-case researchers can fit their theory exactly to the many details of a particular case. In contrast, multiple-case researchers retain only the relationships that are replicated across most or all of the cases.'

Secondly, this research concentrates on a particular phenomenon (Stake, 1995). In other words, the focus of this research was the phenomenon of social class and gender inequality related to elite doctoral school access in China rather than the elite doctoral schools. The selected elite doctoral schools were examples of the studied phenomenon

rather than the primary concern of this study. Hence, they can and should be bundled and considered together as a single case.

Thirdly, there is some relevant literature regarding doctoral school access in China. Hence, although conducting a single-case study means that I could not understand the similarities and differences between cases to generate convincing findings, it was possible to compare the results with those in the relevant literature to make them more reliable. In other words, I considered the particulars of the findings in this study 'as opportunities to make further adjustments in an already crystallised understanding of reality' (Mariotto et al., 2014: 362). As Yin (1994: 31) suggested: for an in-depth single case study, 'a previously developed theory is used as a template with which to compare the empirical results of the case study. If two or more cases are shown to support the same theory, replication may be claimed'. This study aimed not to identify the general rules operated in a particular case but to provide a better explanation and view towards the studied phenomenon. Therefore, I referred to broader populations and compared the theory developed in this study with other pre-existing theories to make discussions.

Finally, this study concentrated on what is happening in a single case (a single discipline) because it could avoid the confounding effect of potential unobserved heterogeneity due to variations between disciplines. The single discipline was selected not because it could represent doctoral schools in China as a whole (although some fuzzy and naturalistic generalisations will be made, which will be discussed later) but because it was unique and particularly suitable for understanding the research topic.

Selection of economic discipline

There were several reasons for the selection of economic discipline that went beyond my personal preference and convenience. It was deemed appropriate firstly because an economic background is not necessary for access to elite doctoral schools of economics.

In contrast, applicants from outside the economic fields were extremely welcomed because they often bring different skills. As a result, many successful applicants were in other majors for their undergraduate or master's study. The elite DSOE had a high proportion of interdisciplinary[12] PhD students. To be more explicit, the PhD students within it were from diverse backgrounds, which could more accurately reflect the population of Chinese PhD students. For example, 46.9% of the participants in this study were with other majors before PhD (6.3% majored in liberal art, 25.0% majored in science, and 15.6% majored in engineering). As was suggested by Wilcox (2008), for all academic research, validity is closely related to the level of accuracy that the selected sample reflects the population of interest. The more diverse the backgrounds of the selected data, the better they could reflect the population of interest. Meanwhile, transferability was another significant factor, which depends highly on the similarity of the studied case with other cases. A case that contains people with various backgrounds is more likely to be similar to other (unstudied) cases.

The second reason for selecting the discipline of economics was that it could better answer this study's research questions. First of all, economic discipline best relates to the word 'elite', which was one of the main emphases of this study. Statistically speaking, the possibility for economics PhD students to become rich or powerful is much higher than those from other disciplines in China. In other words, accessing doctoral schools of economics is more closely related to the realisation of upward social mobility and becoming elite. In addition, although STEM (science, technology, engineering and mathematics) are famous for their misogynistic cultures, the gender gap in the economic discipline is even worse. Moreover, unlike the gender inequality in the STEM fields, which had attracted enormous attention, there was little awareness of what was happening in

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[12] According to The Catalogue of Disciplines for Degree Awarding and Talent Training (2011), there were 13 first-level disciplines and 92 sub-disciplines in China. The interdisciplinary students in this study referred to those who had changed between first-level disciplines.

the economic field and how slowly they were improving. Furthermore, economics is the only major where the proportion of graduates among total PhD graduates has dropped significantly in recent years in China, making the doctoral school access more competitive in the economic discipline than in other fields and easier to observe. For a detailed discussion of these characteristics of the economics discipline, which make it closely related to the topic of this study, please see **Appendix 3**.

Furthermore, due to the national development policy, China plans to devote extra resources to cultivate more PhD students in engineering, clinical medicine, education, and other professional fields in recent years. As a result, although the number of enrolled doctoral students is expanding and will continue to expand, the proportion of PhD students in the economics discipline will further decrease, making the economics doctoral schools even more competitive and an ideal case for in-depth investigation.

Considering the factors mentioned above, examining the case of the economics discipline is particularly interesting and appropriate for this study. Of course, in the qualitative in-depth case study, there does not exist any truly 'representative' case. Although it was typical to a certain extent, the elite economic doctoral schools could not fully represent elite doctoral schools as a whole. Each discipline is unique in some way. However, as Patton (2002) suggested, cases were chosen based on the aim of the study. I wanted to explore the impacts of social class and gender on students' access to elite doctoral schools in China. The doctoral students with different social class and gender backgrounds in elite economic doctoral schools showed considerable differences in their PhD access experiences, satisfying the research purpose. In this study, merely evidence that was relevant to the research topic was reported. Moreover, whenever it is possible, I also verified the independence of the findings and results.

Criteria of elite doctoral schools of economics

After deciding that the research object was the elite doctoral schools of economics in China, the next question was what the standards of the 'elite' were. There were 73 DSOEs in China in 2020 (China Statistical Yearbook, CSY; 2020). I utilised the fourth Chinese National Discipline Evaluation (NDE)[13] results in 2017 to select the elite DSOEs. According to the fourth NDE, economics was separated into two sub-disciplines: theoretical economics[14] and applied economics[15]. The two sub-disciplines were evaluated separately. This research considered doctoral schools with the sub-discipline reaching the top 2% (A+) as satisfying the elite criterion. In total, four doctoral schools were selected (see **Table 4.1** below). They were DSOE of Fudan University (FDU), Peking University (PKU), Renmin University (RMU) and Central University of Finance and Economics (CUFE).

Table 4.1. Elite doctoral schools of economics in China and their NDE rankings

Name of University	Location	NDE-Theoretical economics	NDE-Applied economics
Zhejiang University	Hangzhou	A-	
Xiamen University	Xiamen		A
Wuhan University	Wuhan	A-	
Nanjing University	Nanjing	A-	
Fudan University	Shanghai	A+	A-
Shanghai University of Finance and Economics	Shanghai		A

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[13] Nation Discipline Evaluation was organised by the Academic Degree and Graduate Education Centre in the Ministry of Education. Graduate schools and doctoral schools were eligible to participate. The first NDE was held in 2002, and the fourth NDE was held in 2017. In terms of the result, top 2% were A+, top 2%-5% were A, top 5%-10% were A-, top 1-%-20% were B+, top 20%-30% were B, top 30%-40% were B-, top 40%-50% were C+, top 50%-60% were C, top 60%-70% were C-.

[14] includes: political economy, history of economic thoughts, economic history, western economics, world economy and so on

[15] includes: national economics, regional economics, finance, international trade, industrial economics, statistics, quantitative economics and so on

Beijing Normal University	Beijing	A-	
Peking University	Beijing	A	A+
Renmin University	Beijing	A+	A+
Tsinghua University	Beijing		A-
University of International Business and Economics	Beijing		A
Nankai University	Tianjin	A	A-
Northwest University	Xi'an		
Central University of Finance and Economics	Beijing		A+
Dongbei University of Finance and Economics	Dalian		
Jiangxi University of Finance and Economics	Nanchang		A-
Shandong University	Jinan		A-
Xi'an Jiaotong University	Xi'an		A-
Zhongnan University of Economics and Law	Wuhan		A-
Southwestern University of Finance and Economics	Chengdu		A-
Source: MOE official website			

Given that all four doctoral schools of economics that met the standard of 'elite' were located in the most developed cities in China (three in Beijing and one in Shanghai) and shared a significant number of similarities (please refer to **Appendix 4** for more information), they were considered as a single case together for in-depth investigation.

Case selection and case analysis are always intertwined with each other (Jason and John, 2008). Hence, while choosing the single case, I also set out a plan for exploring it. The next part will discuss that plan.

4.2 Research methodology

To illustrate the processes by which this case study's conclusions were made, the tool used to collect and analyse data (method) and how I conceived the collection and

analysis (methodology) will unfold before the reader's eyes. Disclosing the methodology, which is an essential part of the study, demonstrates my assumptions and beliefs that impacted the decision-making and question engagement from topic selection to the final result dissemination. It also provides the context of justification, where I explain the method employed in this study. Although not easy to recognise, the methodology was like lenses through which the study was conceived and processed, and my thinking and actions were guided. Hence, to achieve methodological transparency, philosophical stance, research object and the researcher's positions will be discussed.

4.2.1 Philosophical stance

This part talks about the network of coherent beliefs held by me on the nature of reality (ontology) and how it could be understood (epistemology). It discusses whether the social world is 'patterned and predictable or constantly re-created by humans' (Leavy, 2017: 12). This assumption further informs how I enact my role during this study and understand my relationship with the participants. The philosophical stance is crucial because it helped me establish a fundamental worldview or so-called paradigm that informed decisions and filtered knowledge throughout this study. There is no definitive answer to the questions mentioned above, but a clear statement of the choices in this study demonstrates where I stood and helps to enhance this study's coherence and the quality of the findings. Also, it could help the readers to feel equipped to embark on the study on their own.

I established a standard baseline for considering the philosophical stance by reviewing the most popular paradigms that guide educational research in the UK. The positivist model is a solid and pervasive one, which considers the entire world as rationale and can be understood through scientific, experimental and quantitative methods. Stressing on the criteria of valid, objective and value-free, Positivism shapes people's expectations for 'legitimate', 'worthwhile' and 'justifiable' research in complete confidence. Relevant

research tends to have a realist ontological standing and seeks general principles that govern world phenomena. However, such studies omit the complexities and details of the circumstances and contexts which give them meanings and are expressed in a kind of absoluteness and certainty which is never the case. The case is that, as much of the educational research deals with the socially constructed world, statistical results are oversimplified, misleading, and not sophisticated enough to sufficiently account for the involved heterogeneous variations (Slee et al., 1998; Schutz et al., 1972). An effective way of exploring these social construction processes is to concentrate more on how organisation members construct and interpret their experience and less on 'the number or frequency of measurable occurrences' (Gioia et al., 2013: 16). As a famous remark goes, 'Not everything that can be counted counts, and not everything that counts can be counted' (Cameron, 1963).

Instead of accepting that the truth exists 'out there' irrespective of people's observation, I was more convinced by the argument that it is the observers who are 'out there' to construct the reality; hence, educational research should prioritise both subjective opinions and the complexity of social-historical contexts. This fundamental belief turned me to the interpretive paradigm, which suggests that people make and remake the social world by constructing and reconstructing meanings through their daily interactions. These people were knowledgeable agents who knew what they wanted to do and could describe their intentions, thoughts, and actions clearly. It also emphasises the significance of qualitative indicators and the role human consciousness plays in understanding and interpreting reality through the meanings assigned by people. Based on this emphasis, knowledge is embodied practices and subjects rather than neutral reality; educational research generates and advances it by describing and interpreting the relevant phenomena and establishing shared meanings with others, as language is an agreed symbolic system (Henry, 2003). In other words, I foregrounded the participants'

interpretations and considered myself a 'glorified reporter' whose primary mission was to give an adequate account of the participants' views and experiences and figure out patterns in their description and explanation that might escape the awareness (Gioia et al., 2013: 17).

Moreover, as the interpretive paradigm stresses the subjectivity of the people concerned, does it also include the researcher's subjectivity (in this case, my subjectivity)? It is undeniable that most of the researchers initially selected the research topic based on their personal beliefs, and the knowledge produced in the study might finally support some of their personal beliefs while refuting others. It is controversial whether their subjectivity, especially personal attitudes and feelings, should be included during the study processes. If so, how to avoid the cognitive distortion of data and ensure that the processes of deduction conducted by the researcher are logical and not biased? Some scholars suggested that the researcher's subjectivity should be held in check to ensure the quality and validation of the research findings. As was stated by Bryant:

> It will be necessary to crush out emotion and to discipline the mind so strongly that the fanciful pleasures of intellectuality will have to be eschewed in the verification process: it will be desirable to taboo ethics and values (except in choosing problems); and it will be inevitable that we shall have to spend most of our time doing hard, dull, tedious, and routine tasks. (1985: 138)

Nevertheless, I argue that the researcher's subjectivity has to intervene during the study processes; and such intervention does not signify the compromise of the required objectivity but instead helps generate its definition in a way that meets the methodological tactics and concepts (Hamel et al., 1993). In other words, the researcher's subjectivity was clearly stated and objectified as the sociological perspective by putting it into conceptual and operative terms. Regardless of the fact that these terms might impose the study's rigour, they legalised the intervention of the researcher's subjectivity.

Following this way, I argue that my subjectivity and objectivity both played their role during the processes of this study. As was incisively stated by Zonabend (1992: 53): 'we must be aware that the most rigorous objectivity is only possible through the most intrepid subjectivity.'

4.2.2 Research object

Research purposes

A clear sense of purpose is crucial because my ultimate goal would dictate decision-making throughout the research journal. Also, the methods of inquiry and analysis, which will be discussed later, depend highly on my purposes. Elliott and Lukes (2008: 88) explained that: 'methods need to be justified pragmatically in terms of their fitness for purpose.'

There were mainly two purposes for which this study was conducted. The first purpose was to make descriptions. I aimed to generate what was termed by Geertz as 'thick descriptions' of processes related to elite doctoral school access in China. Merriam (1998: 29) mentioned that thick description is 'the complete, literal, description of the entity being investigated'. Geertz (1973, b) further explained that human actions and affairs could only be understood through narrative accounts, which draw on contexts and the whole culture in which they occur. Based on these arguments, I provided in this study descriptions that were holistic, complex and 'involving a myriad of not highly isolated variables' (Stake, 1978: 6). The context, details and meanings from the perspective of people who were experiencing or had experienced the processes of elite doctoral school access, especially those concerning social class and gender inequalities, were included in these descriptions. Moreover, hopefully, this research could record and amplify the voices of people whose perspectives on and experiences with the studied phenomenon were neglected or suppressed.

Secondly, this study was conducted in an exploratory fashion. Elite doctoral school access equality in China was an under-researched topic, especially from the perspectives of Bourdieu and Sen. This fact could be confirmed by the absence of relevant literature. I framed this study from these unique perspectives and made in-depth explorations of the topic so as to generate new insights, extend the reader's experience, and fill the existing knowledge gap. Also, since this research was about to make explorations, it would not test any primary argument or hypothesis.

The purpose of description generated particular knowledge, which enabled the readers to learn about only the unique. The purpose of exploration resulted in generalisation (which will be discussed later), which transferred the findings from the single case in this study to a broader population. I believed that this was not an either/or choice. The two purposes, with different concentrations, complement each other and could be achieved simultaneously. Through 'thick description', a substantial amount of information was provided about the studied entity and its context, which created the potential of this study to be applied to other situations and generate understandings of the studied phenomenon.

Holding the belief that persistent attention to lawful regularities is pedantic, I try to describe and explore what is happening in China's elite economic doctoral schools. The impact of social class and gender on access equality is portrayed as it is without making any judgments or attempting to induce any change. Potentially, relevant stakeholders might use the findings of this research to generate change towards better equality or decide whether or not to try to generate change. However, I aim merely to make a comprehensive enquiry to inform understandings of elite doctoral school access equality in China and convey these understandings, their context and the evidence that led to these understandings to interested audiences with the hope to produce resonance and help them comprehend more fully the nature of their own situation and problems. These

understandings were generated through approximating the 'nature experiences acquired in ordinary personal involvement' (Stake, 1978: 5). I considered conveying them helpful because it accommodated and added the audiences' previous understandings, which were attained and amended through direct and vicarious personal experience. As was suggested by Dilthey (1910):

> Only from his actions, his fixed utterances, his effects upon others, can man learn about himself; thus he learns to know himself only by the round-about way of understanding. What we once were, how we developed and became what we are, we learn from the way in which we acted, the plans which we once adopted, the way in which we made ourselves felt in our vocation, from old dead letters, from judgements on which were spoken long ago....we understand ourselves and others only when we transfer our own lived experience into every kind of expression of our own and other people's lives (Stake, 2009: 20).

I deemed empathy and intentionality essential to comprehending educational issues, as are holistic and episodic information. One of the primary purposes of education research is to expand the reader's experiences and understandings. Therefore, this research capitalised upon people's innate ability to image themselves in others' places. It tried to match the 'readiness' individual has for improving understandings and adding experiences and made efforts to help its audiences to look at the world through the researcher's eyes and see things they otherwise might not have seen. It is similar to a heuristic that suggests possibilities rather than certainties.

Generalisation

Empirical educational research can be categorised into two types based on their function: predictive research, which mainly predicts what will happen and retrospective research, which interprets what has happened (Stenhouse, 1980). The former are usually studies of

samples, and the latter are studies of singularities. Stenhouse (1980) argued that these two types of studies are both significant to understanding educational issues and complementary to each other. This research belongs to the second category. The singularity, which was elite economic doctoral schools in China, was selected because it was both peculiar and typical. The peculiar characteristic encouraged me to pay attention to the subtlety and complexity of the singularity in its own right. The typical characteristic made me focus on the issue rather than the singularity. As a result, this research became an instrumental case study exploring an essential aspect of a particular case to contribute to an outside concern (Stake, 1995).

Yin (1994: 27) mentioned that: 'For case studies, theory development as part of the design phase is essential, whether the ensuing case study's purpose is to develop or to test theory'. As for generalising to produce theory, it was generally agreed that studies of samples usually make the statistical generalisation, which quantitively estimates the likelihood of something happening (for instance, 'there is a 10% probability that…'), and scientific generalisation, which stresses that research findings must be 'truly universal, unrestricted as to time and space' (Kaplan, 1964: 91). However, whether studies of singularities could make the generalisation, and if they could, what type of generalisation has been controversial. I believed that one could never confidently generalise from merely a single case to a broad population to which the single case belongs. But two types of generalisations could be made in this study. The first one was fuzzy generalisations (for instance, 'it is possible that…'), which were 'general statements with built-in uncertainty' (Bassy, 1999: 52). It is a form of prediction arising from empirical social and educational inquiries, which argues that something has happened (most of the time repeatedly happened) in one place and is likely to happen elsewhere, but its probability is not measured. Unlike statistical generalisation, which has zero tolerance for exceptions (once exceptions are found, the statement has to be abandoned or revised based on the

new evidence), fuzzy generalisation allows for the exceptions and does not need to 'withstand all attempts at refutation' (Bassey, 1999: 12). In certain circumstances, the statements and arguments of this study were factual, but the application of them to all circumstances was impossible and nonsensical. Hence fuzzy generalisation is suitable for this study which attaches great significance to human complexity. Together with it exists an invitation to 'try it and test if something similar happens for you'.

There seems to exist a paradox when making fuzzy generalisations in this study. Through exploring in depth a unique case, this study finally yielded understandings and knowledge that were in between unique and universal. The findings of this research (for instance, 'in the case of elite economic doctoral schools, it has been found that…') were turned into qualified general states (for instance, 'in the cases of other disciplines, it may be found that…') and such processes strengthened the paradox. However, I believe that the paradox mentioned above was the point of this research. What I could do was to live with, even embrace and make use of it rather than resolve the embedded tensions. It was mentioned by Bacon (1620) that there are two means of exploring and discovering the truth. The first one files from the particulars and sense directly to the most general axioms, and the second one derives axioms from particulars and sense, gradually increasing them by an unbroken ascent so that it could finally arrive at the most general axioms. With the paradox mentioned above, this research belongs to the second fashion, which was in line with the claim proposed by Simons (1996):

> To live with ambiguity, to challenge certainty, to creatively encounter, is to arrive, eventually, at seeing anew. (Simons, 1996: 225)

Moreover, unlike statistical and scientific generalisation, which supersede the role of individual judgement, fuzzy generalisation stresses that personal judgement is essential and cannot be superseded. With the involvement and privilege of interpretation in this study, I made assertions on a small-sized database.

The second type of generalisation made in this study was the naturalistic generalisation, which stresses that research conclusions could be drawn by the readers through the combination of assertions made publicly by the researcher and personal involvements in life's affairs (Stake, 1995). This type of generalisation emphasises the 'inside the head' processes through which individuals gradually obtain information and concepts and steadily generalise them to other contexts and situations as they learn more (Stake, 1995: 86). It was made through two types of processes: the researcher provides thick descriptions to create vicarious experiences so that the readers feel as if things happened to themselves; the reader takes assertions made by the researcher alongside their previous existing propositional knowledge and understandings to modify, extend or transfer them (Stake, 1995). I believe that the readers' knowledge of the studied phenomenon and ability to make reasoned judgements is sufficient enough to direct concerns to significant rather than superficial similarities and differences between situations, and they could make working hypotheses on the transferability of this study, which refers to the extent to which they could use the findings of this study to another situation. What I will do is provide sufficiently thick descriptions of the studied case and suggest some possible rules. The burden of decision-making and proof-providing is actually on the reader's side.

4.2.3 The researcher's positions

Apart from concepts of reality, my ways of relating to participants and interacting with the surrounding environment, which 'both influences and has been influenced by/in research processes', also played a significant role in shaping this study's philosophical stance (Thomson and Gunter, 2011: 17). Regardless of the research topic and the type of study, every researcher speaks from various standpoints and locations, which are of great significance. Hence, it is not hard to recognise in the literature where the researchers

'develop practices of reflexivity in order to address some of the blind spots that constitute partiality' and illustrate how their positions influence the research for better or worse effect (Thomson and Gunter, 2011: 17). Nevertheless, writings on the researchers' position often assume, either deliberately or fortuitously, their identity as stable, fixed and singular and present in the binary notion of insiders/outsiders (Piper, 2004; Sikes, 2006). Outsiders, as was suggested, are like 'flies on the wall'. It allows the researchers to understand others' experiences and feelings, which are different from their own, through 'fresh eyes'. However, it is hard for them to capture all the significant phenomena, thus might lead to misinterpretation of the meanings and practices (Rosaldo, 1993). On the other hand, insiders are familiar with the local knowledge, attitudes, values and contexts in a way that outsider researchers could never be. However, such familiarities might result in a lack of distance and perspective on taken-for-granted phenomena and events (Delamont, 2001). The terminology of outsider and insider in educational research promotes the illusion of stability, which is often different from our real-life experiences.

Given that both outsider and insider positions have their unique advantages and limitations, the multiple, unstable, and dialogical positions that challenge the outsider-insider binary to improve the research practice and discussions were applied in this research. It argues that there are no clear lines between the insider and the outsider, we are always outsiders to each other, and the insiders sometimes also have outsider perspectives and vice versa (Denzin, 2003; Peel, 2003; Sikes et al., 2008). Therefore, the traditional outsider/insider dichotomy could not fully represent the complexities of the ever-changing interactions and encounters between the researcher and the participants. As was suggested by Bauman (2000), a researcher's position or identity is never something singular that remains stationary from birth to death. Instead, it is like some tenuous, unsettled and context-specific positioning situated within a continuum 'with sometimes more than one at work at the same time' (Thomson and Gunter, 2011: 25).

Hence, I argued that I was neither a pure outsider nor a complete insider during this study; instead, I was engaged in continuously shifting positions.

The first factor that impacted my position was my situated knowledge, information and experience related to this study. The selection of the topic was on the basis of my insider knowledge with the belief that carrying out a study in the local contexts might lead to epistemic advantages — I was a Chinese researcher familiar with doctoral education in general, even though I knew little about doctoral education in China and the elite doctoral schools of economics selected in this study. With such insider positions with privileged information and knowledge, I enjoyed the benefits of conducting the fieldwork. As a Chinese citizen and PhD student, I found it easier to engage with the participants and establish trust. The shared language, culture and tradition also ensured smooth and effective communications as well as mutual understandings and resonances between me and the participants. Meanwhile, as a PhD student in the UK researching PhD access in China, I was doubted by the participants regarding my ability to understand what was happening and interpret their feelings and complaints, especially marginalised perspectives and subjugated voices. Moreover, my major was education; however, this study concentrated on economics. The lack of specialised knowledge led to specific difficulties, such as the participants' incredulity, difficulty comprehending economic terminology, and lack of understanding of the industry's outlook. However, these positions were unstable and fixed; with time passing, relevant knowledge and experience accumulated, promoting or reducing the factors mentioned above.

The second factor that shaped my position was the similarities and differences I shared with the participants due to our gender and social class identities. Realising 'historically marginalised groups had been rendered invisible in social research or included in ways that reinforced stereotypes' (Leavy, 2017: 27). I decided to include two underrepresented groups — female and working-class, in this study in a meaningful way. Moreover, as was

previously discussed, studies that utilise the interpretive paradigm are power-laden, which requires constant reflections on power relationships and the researcher-participant dynamics to define the researcher's positions (Pini, 2005). However, given that the participants and I performed multiple identities during the study, such reflections are hard to achieve (Rose, 1997). But an honest acknowledgement of the multiple roles of the researcher and 'a conscious breakdown of the relationships of power between the researcher-researched' is possible (Tarrant, 2016: 47). Next, I will discuss how different forms of identities, particularly gender and social class, influenced my position and helped to produce sound, trustworthy and valid data in this study.

Although the role gender plays in building and impacting field relationships has been an essential part of feminist-inspired concerns since the 1980s (Broom et al., 2009; Hopkins, 2010; Horton, 2001; Pini, 2005). At the outset of this study, I did not expect my gender to be a significant issue. I assumed that as a female PhD student from the same country, it would not be challenging for me to establish rapport and trust and communicate with other PhD students regardless of gender. Nevertheless, the relationship-building and communication processes were far from smooth. I gradually learned that I need to be flexible in terms of my performance of female identity and utilise different strategies to adapt to different participants and situations. When facing participants of the same gender, I found myself to be an insider with similar experiences and feelings who was easier to be accepted. As was suggested by Thurnell-Read (2016: 37), the shared gender between I and the participants would develop a kind of privilege with 'a particular ease of interaction and a freedom from worry about other troubles concerning fitting in that would not be so readily available to others'. Comparatively, when researching men in this study, I was more likely to be an outsider who was 'less powerful and therefore less privy to understandings of manhood' (Tarrant, 2016: 47). It was found that the male participants were harder to recruit and unwilling to disclose their feelings and emotions. These

findings accord with many other female researchers, who demonstrated how they were situated as outsiders of study and men attempted to exert control and power over them (Winchester, 1996; Schwalbe and Wolkomir, 2001; Pini, 2005; Allen, 2005; Butera, 2006). Nevertheless, some male participants mentioned that I was different and unthreatening due to my female identity, which led to their expression of exquisite emotions they would never share with male researchers; this makes my gendered outsider position an advantage.

Furthermore, I noticed that discussing gender issues was as easy with female participants as with male participants. It was not hard to recognise the ways women were treated unequally and the male-dominated culture through methods such as focus group discussions and interviews. I anticipated before the study that once addressing these issues directly, male students might tend to 'become stifled and almost taboo' (Thurnell-Read, 2016: 27). However, the results turned out to be unexpected. With 'stoicism' being closely associated with masculinity, men had few opportunities to get things off their chest, especially when the topics were related to gender (Calasanti, 2004: 39). Hence, they enjoyed and cherished the rare opportunity of communication with me.

Apart from gender identities, social class identities were also significant. Skeggs (2004: 14) suggested 'perspective is always premised upon access to knowledge'. Similarly, Creaghan and Mannay (2016) also stressed that how people access knowledge, and their identifications and dis-identifications during the research processes are significant. Some scholars recognised that individuals usually switch among three statuses: role embracement, when the authentic back-stage selfhood guides what they think and do; role performance, when they tactically construct outward displayed selves to subjectively distance themselves from the membership roles, regulatory reach and dominations associated with factors like culture, commitment rituals and empowerment; and role distancing when their front-stage selves are detached from back-stage attitudes, feelings

and emotions, which might take different forms such as humour, scepticism, cynicism and irony (Pratt, 2000; kunda, 2006; Costas and Fleming, 2009). In other words, the role embracement is related to people's inner selves, which are considered genuine. Role performance refers to whom they have to be in the real world, which is 'counterfeit, performed and mere pragmatic pretence', and role distancing indicates the moments when people attempt to overcome the tensions between role embracement and role performance and seek for relieves, sincerity and self-determinations under pressure (Costas and Fleming, 2009: 354). Notwithstanding, I admitted that pure role embracement, which might lead to full authenticity, was unrealisable in real life and the role distancing, which provides only temporary protection, was a form of reality-escaping; I still believe that they were indispensable for the complete and comprehensive understandings of the participants. This belief accorded with Mills's argument:

> Much of human life consists of playing ... roles within specific institutions. To understand the biography of an individual, we must understand the significance and meaning of the roles he has played and does play. (1959: 161)

However, this study was conducted in school settings, where 'power relations and hierarchical tensions shape both the learning experiences and identities for all students' (Stahl, 2016: 146). Hence, students were more likely to habitually engage in the role performance processes when they had conversations with me, making the relationship-building particularly important to reveal the role embracement and the role distancing processes. In terms of establishing rapport, I found Powell and Takayoshi's (2003: 406) suggestions helpful: 'We as researchers would be wise to do more than "invite" our participants to share with us; in order to build truly reciprocal relationships, we must be equally willing to share with them, to give them control over the spaces and forms in which they see us.' Following this suggestion, I also shared my own experiences

and feelings on PhD application with the participants. Such self-disclosure elicited resonance and led to mutual self-disclosure in this research.

Apart from self-disclosure, I also tried to be open, honest, respectful and a reflective listener to reduce the effects of the hierarchical dynamic, especially on working-class participants who were usually noticed to be 'not verbally adept, perhaps unused to exploring their views and feelings with a stranger (McDowell, 2000: 209). Another interesting thing is related to the dressing style. It was a significant turning point when one day, I wore a T-shirt purchased from the university shop and a trainer due to heavy rain. I did not wear that style before as I believed it would be too casual and unprofessional, and I could not show my respect for the participants. Nevertheless, on that day, with a T-shirt and trainer, I felt that I was more welcomed and closely connected to the participants. I was closer to an insider in this research, and the power tensions between me and the participants, especially working-class ones, were less apparent.

Besides, during the pilot study, I noticed that after learning the main concerns of this research were social class and gender, the participants tended to pay special attention to the relevant questions; this often reminded them to engage more in the role performance processes. In other words, they were more likely to unconsciously perform or talk about what they believed was appropriate or expected by me when the questions were social-class or gender-related. However, such attention and engagement were problematic as these could lead to lies and false data. Hence, during the formal fieldwork, in order to capture more about the role embracement and the role distancing processes, I did not stress the theme of social class to the participants before the conversion; instead, this was explained after finishing the interview.

Additionally, intersecting with gender and social class identities, other factors such as age, marital status, and work experience also impacted my position and relationship-building in this study. Around one-fourth of the participants were ten years older than me;

this appeared to 'lend a leitmotif of paternalism' to the established relationships (Thurnell-Read, 2016: 33). Sometimes they unconsciously perform or talk like a wise sage during the interviews. Moreover, some senior participants, particularly married ones, doubted my ability to comprehend the type of life I had yet to experience as unmarried and without any work experience. Hence, they tend to unconsciously or consciously avoid spreading out some topics such as marriage, parent and career and replace them with sentences like 'you will understand in the future', 'you are still too young to feel this'. Under such circumstances, I had to repeatedly express my interests and keep asking them to share more.

There were also some moments when the boundaries between the outsider and insider were not clear. For instance, one of the four elite doctoral schools was located in my hometown, where I also finished my undergraduate study. However, I had never been to the DSOE before; hence, unacquainted with some of the internal factors like PhD admission policy, institutional culture and school atmosphere. Overall speaking, I was neither completely familiar nor totally unfamiliar with that doctoral school. Another example was related to access to the selected case. I knew some supervisors and admission officers before this study. So while I was an outsider, I was not any outsider — I had already successfully established personal relationships and affiliations with the supervisors and admission officers and obtained some internal information and suggestions from them. In other words, the appointment with the doctoral schools as an outside researcher was based on insider social relationships and institutional knowledge. Sikes et al. (2008) stated that sometimes the researcher is both an outside insider and an inside outsider who can observe and change the study site.

4.3 Research methods

This study drew on diverse data collected in elite economics doctoral schools in China. All four economics doctoral schools that satisfied the standard of 'elite' discussed above were included to form a single case for in-depth investigation. Yin (2003) suggests that to balance the potential vulnerability of single-case studies against misrepresentation and bias, the researchers should maximise their access to empirical evidence. Lincoln and Guba (1984) also put forward the term prolonged engagement to stress that researchers should spend enough time on a case so as to be immersed in the studied phenomenon. Therefore, after obtaining permission from the doctoral schools, I collected multiple types of data over two phases. Firstly, to ascertain basic capabilities and generate a capability list related to elite economics doctoral school access, I collected qualitative data from the literature, admission documents and focus group discussions. Then, I interviewed PhD students and supervisors to understand the role social class and gender plays in developing identified capabilities. In addition, before the two phases, a pilot study was carried out with mock interviews and focus group discussions being conducted (please see **Appendix 5** for the research timeline and **Appendix 6** for the discussion of the processes and results of the pilot study). Comprehensive records were maintained throughout the study to provide a transparent chain of evidence for the assertions in this study.

The following section will provide an accessible text that illustrates how I systematically executed the data collection and analysed the deeper issues surrounding them. In general, the process was far more than picking the quotes, contriving some meaningful interpretations and slapping labels on them (Gioia et al., 2013) (please see **Appendix 7** for an interview transcript to assess the material and evaluate the data selection independently). All the research methods utilised during the process were informed by the previously discussed research genre, research methodology and research questions, as

well as more practical issues such as time constraints, access to research settings to generate data and my skill set. They were selected and applied for their ability to capture the studied phenomenon and its contexts sufficiently, address the two research questions, and chime with the theoretical framework combining Sen and Bourdieu. Moreover, ethics, which referred to the standards of conduct that distinguish between acceptable and unacceptable practice, were intertwined with all the processes discussed later to ensure that this study was not harmful (please see **Appendix 8** for the ethical considerations in the approved ethical form). I will highlight all the moments in the research processes in which ethics had a bearing on decision-making.

4.3.1 Research methods for the selection of basic capabilities

The first two steps of Robeyns' (2005) procedure approach was involved here to answer research question one: What are the basic capabilities for students' access to elite doctoral schools of economics in China? Firstly, I generated an ideal capability list by brainstorming. Secondly, I tried to draw up a pragmatic capability list sensitive to the research context through the triangulation strategy. The triangulation strategy was selected because it could enable the validity and reliability of the data and reinforce the legitimacy of research findings (Yin, 2018). The combination of two forms of data (archives and focus group discussion) ensured that multiple sources of evidence were collected to strengthen the confidence of the findings. The ideal and pragmatic capability lists were later used for further discussion to generate our final basic capability list.

Unconstrained brainstorming

The source of this part of the data was myself. Robeyns (2005) suggested that the first step in obtaining a capability list is to eliminate all external impacts, such as measurement design, data limitations and research feasibility, and build an ideal capability list through

the researcher's own brainstorming. To achieve this, I spent three days during which all the potential capabilities that came to mind were recorded on a piece of paper. Afterwards, I reviewed the capabilities on that paper, deleted what was unnecessary, categorised similar ones, and finally generated my own ideal capability list.

After establishing the ideal capability list, the next step was to consider all the constraints mentioned above and generate a pragmatic capability list rooted in the local contexts and experiences of the students concerned through document analysis and focus group discussions. This step engaged knowledge in different spheres of life and constituted a much more substantial part of the work in this study than the last step. I will discuss this step in the following part, including how relevant data was collected and analysed.

Document and focus group data collection

Prior (2003: 60) argued that 'a university is in its documents rather than its buildings, the charter together with other documents names the university'. Hence, after identifying the four elite economics doctoral schools, I first browsed their official websites to collect archival data, including university-level and doctoral school-level admission documents over the past three years. In total, I gathered forty-two admission brochures at this stage. These documents were later analysed with the data collected through the focus group discussions and relevant literature to generate the basic capability list and answer the first research question.

I then contacted the doctoral schools to ask permission to conduct this study. My personal networks undeniably played a significant role in this stage, enabling me to enter research settings that an outsider would never be able to access. After obtaining permission from the first doctoral schools, I asked for an email list of current PhD students and sent out invitations directly using her school email address. After one week's wait, the response rate was low (5%), and most of the responses were rejections. I then

tried to contact some of the supervisors in person and invited them to this study. Three supervisors accepted my invitation and helped send recruitment emails, including the participation information sheet and consent form (please see **Appendix 9 and Appendix 10** for their translated versions), using their email addresses. The response rate then increased to one hundred per cent, and more than two out of three students accepted to contribute to this study and sent the signed consent form back. Afterwards, I copied the success of the first doctoral school to the other three, recruiting one group of eight PhD students from each of them. In total, thirteen supervisors from four elite economics doctoral schools accepted the invitation. They helped recruit four groups of PhD students. All of them had a balance established between male and female and working-class and middle-class participants (see **Table 4.2** below for the composition of each group). How the participant's social class (which had already been indicated in their signed consent form) was classified is discussed in **Appendix 11**.

Table 4.2. The composition of each focus group

Total (8)	Middle-class (4)	Working-class (4)
Female (4)	2	2
Male (4)	2	2

In each doctoral school, there were around two hundred PhD students and one hundred supervisors. The numbers were large enough to ensure that the participants would not be recognised. All participants and some of their supervisors were invited to attend the focus group discussions for the first research question and the following semi-structured interviews for the second research question.

I then conducted four focus group discussions, one discussion in each elite DSOE. Because of fear that it would pressure students and affect their expression of ideas, the supervisors were not invited to the focus group discussions. Hence, the participants were merely PhD students. All four focus group discussions were conducted face-to-face in

China. Separate meeting rooms were hired with only the participants and me present. During the focus group discussions, participants were encouraged to discuss and identify basic capabilities related to what they had experienced: the elite economic doctoral school access. Please refer to **Appendix 12** for information on the process of focus group discussions.

All the focus group discussions lasted around 3-5 hours and were conducted in Chinese, the participants and my mother tongue. They were audio-recorded, which allowed me to make field notes to manually record supplementary (observational) data such as personal gesture, posture, environment, and context and analyse the substantive contents and the interaction between the participants later. I transcribed all the records verbatim by myself. Transcripts and field notes were analysed together with the admission documents to generate an initial basic capability list. Moreover, all the participants were anonymous during the transcription processes (which were carried out by me manually to ensure that nothing was disclosed to any outside party). They were given pseudonyms randomly selected from the Book of Family Names in China.

Document and focus group data analysis

This part discusses how I progressed from raw documentary and focused group data (transcripts and field notes) to an initial basic capability list in a defensible and credible fashion. To imbue the induction of basic capabilities with qualitative rigour while still maintaining creative potential, I primarily adopted the Gioia approach for qualitative content analysis. Meanings circulated in documents and transcripts, and the context in which they were created, were explored, identified and organised into first-order concepts and second-order themes, followed by aggregate dimensions (capabilities), constituting the initial capability list.

The first thing I did was data preparation and organisation. The transcripts of four focus group discussions, the forty admission documents and their relevant field notes were organised in a repository for easy access and then imported into the Nvivo. I read through all available data for the initial data immersion and developed a sense of the big picture through this effort. Reflexivity field notes were taken during this process on my impressions and ideas, which were also included as a source of data for the following analysis. Moreover, the initial data immersion helped me prioritise the data for analysis by noting which ones could best help answer the research question.

Then, I conducted the first-order data analysis, which adhered faithfully to the terms that existed in the original texts and were particularly cautious about distilling categories. As a result, the sheer number of categories was overwhelming when I finished this stage. I had to admit that I felt lost and had no idea about 'how to make sense of all these data that don't seem to hang together' and was encouraged by the argument 'you gotta get lost before you can get found' (Gioia et al., 2013: 20).

With all the documents and transcripts being initially reviewed and categorised, I moved on to the second-order data analysis and started comparing the categories, grouping the similar ones, attaching them with labels or phrasal descriptors (preferably remaining original terms in texts) and considering the potential array. This process, which was in the theoretical realm, reduced the number of categories identified previously into a workable set of concepts and themes. During this second-order data analysis, I made efforts to ensure that the emerging themes suggest concepts describing and explaining the basic capabilities relevant to elite economics doctoral school access.

Next, I tried to distil the emergent first-order concepts and second-order themes into aggregate dimensions (basic capabilities) and construct a data structure. This step was pivotal as it allowed me to configure the archive and focus group data into a sensible

visual aid and provided a graphic representation of the processes from raw data to basic capabilities, which demonstrated rigour in this qualitative study (Tracy, 2010).

I found Gioia's approach with the ultimate goal of constructing 'a vibrant inductive model that is grounded in the data' helpful because it compelled me to think about the data not only methodologically but also theoretically (Gioia et al., 2013: 22). The data structure balanced the embeddedness of the archive data and PhD students' views in living the phenomenon with the theoretical insights required for a rigour doctoral study and clarified all related data-to-theory/data to capability connections. The analytical discipline and systematic conceptual applied here led to credible interpretations of documentary and focused group data and a defensible initial basic capability list.

4.3.2 Research methods for understanding the development of basic capabilities

I conducted semi-structured interviews with PhD students and their supervisors to answer the second research question: How do social class and gender impact the development of basic capabilities? Thematic content analysis methods were applied to generate theoretical models related to the development of each capability.

Interview data collection

The semi-structured interviews were conducted to explore further PhD students' and supervisors' perceptions and experiences in developing basic capabilities and how different complexity drivers come into play to impact their elite economics doctoral school access. Retrospective accounts by those who had experienced 'the phenomenon of theoretical interest' were gathered (Gioia et al., 2013: 19). Extraordinary voices were given to the participants, who were considered knowledgeable informants.

The semi-structured interviews involved 40 informants, 32 were PhD students who had participated in the focus group discussions, and eight were their supervisors (two from

each doctoral school). Given that PhD students had already signed the consent form before, in this stage, only supervisors were asked to sign a consent form before the interview (see **Appendix 13** for the sample consent form). Although overall, in China, the proportion of female and working-class students in elite DSOEs is much lower than that of male and middle-class PhD students, this study involved the same number of men and women, as well as middle-class and working-class participants. Because instead of analysing the unequal distribution of basic capabilities among different groups of students, this study aims to explore and compare the experiences of students who had successfully developed basic capabilities.

Apart from social class and gender backgrounds, I also gathered other backgrounds of PhD participants in semi-structured interviews, including their major before doing PhD, marriage status, and type of undergraduate and master university[16]. This information was collected to facilitate the reader's understanding of some aspects of students' experiences. **Table 4.3** below illustrates the relevant information.

Table 4.3. Other backgrounds for PhD participants in semi-structured interviews

	Middle-class/ Female (8)	Middle-class/ Male (8)	Working-class/ Female (8)	Working-class/Male (8)	Total (32)
Major before doing PhD					
Liberal arts	1	1	0	0	2
Science	2	1	1	4	8
Engineer	1	2	1	1	5
Economics (or related)	4	4	6	3	17
Marriage status					
Married	1	3	3	6	13
Unmarried	7	5	5	2	19
Type of undergraduate university					
National (985)	5	6	2	5	18

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[16] Three of the participants were bachelor-straight-to-doctorate students. Hence the 'type of master university' was not applicable for them.

Provincial (211)	0	1	3	1	5
Ordinary	3	1	3	2	9
Type of master university					
National (985)	7	7	3	5	22
Provincial (211)	1	0	3	2	6
Ordinary	0	0	1	0	1
Not applicable	0	1	1	1	3

The focus group discussion and semi-structured interview involved the same group of PhD students because it was time-saving and easy to operate. More importantly, focus group discussions and semi-structured interviews were conducted with different aims and to collect different types of information. The focus group discussions facilitated the generation of a basic capability list. Hence students generally made their points on what were basic capabilities for elite economics doctoral school access. They expressed more about their opinions. In contrast, the semi-structured interviews explored the development of (identified) basic capabilities, concentrating more on PhD students' private feelings and personal experiences.

Each semi-structured interview lasted approximately 60-min. Before conducting the interviews, I designed two protocols (one for PhD students and the other for supervisors) around the basic capability list created when answering the first research question. The protocols were piloted, refined and discussed with my principal supervisor, subordinate supervisor, and upgrade examiners to ensure that it was thorough (covered all the anticipated issues worth exploring), feasible and concentrated on the second research question. Please refer to **Appendix 14 and 15** for information on the two protocols.

The semi-structured interviews were initially designed to be conducted face-to-face. However, due to the impact of Covid-19, they were finally carried out online. The interviews covered a broad range of questions around each capability and follow-up questions, which allowed me some degrees of control over the discussion while still

providing a considerable amount of freedom for the interviewees. Also, the preparation of interview questions standardised the study, making it easy to analyse and compare. All these questions did not have a predetermined set of acceptable answers, like true or false. To ensure respondent validation, I tried to summarise the key points the participant was making when she felt unsure and asked for confirmation of the synopsis (for instance. Did you mean…?). Moreover, although I had designed interview protocols, I was always 'sharp and prepared to adjust on the fly' based on informant responses (Gioia et al., 2013: 20). Instead of adhering to the argument that the interview conduction must be standardised to ensure consistency of this research, I followed the interviewees to wherever the research question could be answered. This attitude led to the formulation of more pertinent questions and the revision of the interview protocol during the interviews. As a result, the 'subsequent interviews pursue subjects that are increasingly focused on concepts and tentative relationships emerging from the interviews to date' (Gioia et al., 2013: 20). In addition, I also backtracked to prior participants and invited them to add answers for the new questions that arise from the subsequent interviews. In total, I conducted fifteen returned interviews. Each lasted approximately ten minutes.

Moreover, I considered carefully the language I used in my interactions with the participants so that I did not offend anyone. Culturally and politically sensitive terminology was used during the interviews to demonstrate an ethic of respect and caring. Also, I tried to establish rapport with the interviewees and pick up on markers through active listening, show my interest in the conversation through gestures and eye contact, and seek clarification or elaboration through the probe.

All the interviews were audio-recorded and transcribed verbatim. Transcripts were returned to the participants for checking before data coding and analysis. Some participants found through this process that they had not said what they meant to say. Under such circumstances, short discussions were conducted to allow them to put the

transcript straight. Moreover, during the conduction of semi-structured interviews, field notes were maintained to document my actions, feelings and thoughts (see **Appendix 16** for their guidelines). All the study data will be stored securely on my laptop with password protection until the exam board confirms the results of my dissertation.

Interview data analysis

This process helped create intelligible accounts of interview data, including transcripts and field notes. It included six steps; each step was critically discussed with my supervisors, classmates, and relevant people.

First of all, similar to the analysis of documentary and focus group data when answering the first research question, I also generated the first-order concepts, second-order themes and third-order aggregate dimensions. I first marked unfiltered data with distinct codes extracted from the text or generated by me using informant-centric terms. A myriad of these codes emerged early in this study, earlier than the start of formal data analysis. Hence, the interview and data analysis processes were overlapping, which was consistent with the arguments of some researchers (Lincoln and Guba, 1984; Locke and Golden-Biddle, 1997; Langley, 1999). Then I grouped the codes according to their related capabilities. In the following stages, the codes related to each capability were analysed separately.

Secondly, to make the codes more coherent and manageable, I sought the similarities and differences among them and grouped them into first-order concepts, which were general, less specified notions capturing features that portray or demonstrate the phenomenon of theoretical interest. In other words, the first-order concepts were like precursors for me to make sense of the analysed data. Then the first-order concepts were further grouped into more established sub-categories and categories, which were second-order themes and third-order aggregate dimensions. In this step, I mainly

concentrated on nascent concepts and themes without adequate theoretical reference in current literature or existing concepts and themes with new twists to produce new insights. This 'presentational tactic' foreshadowed the essential issues to be addressed in **Chapter 6** (Gioia et al., 2013: 24). Given that the data coding process was iterative, some codes, concepts, themes and aggregate dimensions were combined or evolved with time. Meanwhile, I evaluated the concepts, themes and aggregate dimensions by returning to the initial text, guaranteeing that the codes belong together and that internal homogeneity[17] and external heterogeneity[18] were achieved.

Thirdly, I returned to the transcripts to see where the codes and first-order concepts came from. Given that this study concentrated on social class and gender differences, the codes and concepts that came from (or mostly came from) PhD students with a particular gender and(or) social class background were picked out and tagged. Meanwhile, the codes and concepts that came from supervisors or doctoral students related to social class and(or) gender difference were also selected and marked. Other concepts and themes were considered not impacted by social class or gender, which were irrelevant to the aim of this study.

Fourthly, I reviewed the tagged concepts and second-order themes and their relationship with Bourdieu's social reproduction theory and Sen's CA to construct a data structure (similar to the data structure built when analysing documentary and focus group data). To achieve this, I first identified Bourdieu's and Sen's key notions, including cultural capital, social capital, economic capital, institutional habitus, familial habitus, fields and agency. Then, I looked at the second-order themes and related them with relevant Bourdieu's and Sen's key notions. The data structure presented a persuading account to prefigure the construction of the theoretical models later. Steps two to four were carried out through Nvivo, lauded for its reliability, efficiency and capability to handle large amounts of data.

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[17] which means the combined codes were similar

[18] which means the coordinate codes were distinct

However, even with powerful functions, Nvivo was just a tool. It was me that was instrumental in the data analysis processes.

Fifthly, after constructing a data structure, I combined it with Bourdieu's social reproduction theory and Amartya Sen's CA and their integrated theoretical framework discussed in **Chapter 3** to build dynamic theoretical models related to the development of basic capabilities. The theoretical models were accounts of social realities that were grounded in data but extended beyond those data. They were developed through logical inference to locate and explain what goes on within the studied case and presume some broader societal context when it was possible. I made efforts to ensure that they were both explicit and sound.

Although inspired by the Gioia approach, which emphasises the prevalent first-order and second-order findings, I did not treat it as a 'formula' or 'template' to reproduce the fixed format of the data structure (Gioia et al., 2013: 25). Instead, the Gioia method was viewed as a flexible orientation towards the rigorous demonstration of connections between data and theory that was open to innovation. Hence, relying on the various conceptualisations of data and the benefits of qualitative case studies' flexibility in applying particular methods to fit specific research questions, the interview data analysis and documentary and focus group data analysis were designed differently (see **Table 4.4** below).

Table 4.4. Differences between the analysis of various types of data

	Analysis of document and focus group data	Analysis of interview data
Final results	static data structure	dynamic theoretical models
Types of analysis	pure inductive and data-driven	both deductive and inductive; data-driven but also impacted by the theoretical framework
Aggregate dimensions	capabilities generalised from data	anything appropriate generalised from data

The development of dynamic theoretical models shaped the first critical difference between the interview data analysis and documentary and focused group data analysis.

The analysis of interview data considered not only all the emergent concepts, themes, and aggregate dimensions related to the research question and theoretical framework but also the dynamic relationships among them. It ended with dynamic theoretical models that describe the phenomena and deeper processes identified by me. In comparison, the analysis of documentary and focus group data ended merely with a static data structure that did not capture interrelationships among various concepts. The main reason for this final-result difference was that the data were analysed to answer different types of research questions (the documentary and focus group data were analysed to the answer research question started with 'what' while the interview data were analysed to answer the research question framed in 'how'). Then how to account for the dynamic interrelationships between the emergent concepts, themes, and aggregate dimensions and 'set everything in motion' (Nag et al., 2007: 829)? The primary method was to speak in 'classic boxes-and-arrow terms', assembling a series of boxes with a particular focus on the arrows (Gioia et al., 2013: 22). Through this intimate connection with the data, deeper theoretical insights that inspect more than static data structure was achieved.

Another difference was that documentary and focused group data analysis was pure inductive and data-driven. In comparison, the interview data analysis was both deductive and inductive. The data were firstly coded in an inductive way to generate codes, first-order concepts, second-order themes and aggregate dimensions. Then the codes, concepts, themes and aggregate dimensions were related to Bourdieu's social reproduction theory and Sen's CA and fitted into the theoretical framework discussed in **Chapter 3** in a deductive manner. The main aim of such deductive processes was to generate new theoretical models in terms of the development of basic capabilities through proving, disproving, and revising existing theories. The new theoretical models were put forward based on the combination of the adequacy of underlying theories, the whole corpus of relevant knowledge of the studied phenomenon, and the particular

instance. The last difference was that the aggregate dimensions of the document and focus group data analysis were capabilities generalised from the data. In contrast, for the interview data analysis, they could be anything appropriate.

Eventually, to finalise the data analysis, the difference in my interpretation of some terms and passages was considered. To deal with this issue, I invited two critical friends (one was also a researcher in the higher education field, and another was a researcher in another field) to revisit the data, pick out controversial codes, concepts and themes, make mutual discussions, reconcile disputes and develop consensual interpretations. After several rounds in two months, the two critical friends and I agreed upon the final data structure and theoretical models. After this process, all the findings were shared with the participants for further revisions.

4.3.3 Research methods for discussions

In addition to collection and analysis, data was also discussed to answer the question 'So what?'. In this way, I extended the findings beyond my data and made them useful in other contexts. Moreover, discussions also contributed to the research validation and authenticity, which referred to the extent to which the findings were what they were claimed to be and the extent to which this study's findings could be repeated under similar circumstances separately.

As was discussed above, I strived to generalise a particular set of findings to a broader theory, which could be tested and legitimated through replications of the findings in more situations. In other words, a possible way to validate the generated theory was to identify that the same results had occurred. However, this study was based on only one case, which means that I could not compare the findings between cases to identify the differences and similarities within the scope of this study. However, there are some studies with similar concerns conducted by other researchers. I argue that the potential

limits and sometimes even failings caused by the fact that this was a single case study could be moderated by comparing its findings with the findings of other studies. If the results were also (repeatedly) pointed out by other researchers, then the 'judgements of their typicality can justifiably be made' (Flyvbjerg, 2001: 73).

The discussion was conducted until all the data collection and analysis processes for a particular research question were finished because engaging with the relevant literature intimately too early would lead to prior hypothesis bias (Gioia et al., 2013). Although the venerable orientation of social and educational research, which emphasises the progressive extensions of existing knowledge to generate new knowledge, dominated the field for a long time. I believe that what is already known sometimes delimits what can be known. This belief resonated with Gioia et al.'s (2003: 24) argument that if the researchers could 'zero in' the research questions, they would be more likely to identify the most attractive and incisive parts for exploration and emphasis. Nevertheless, as I had already reviewed some of the previous works on Bourdieu's social reproduction theory and Sen's CA for the justification of the research topic, literature review and construction of theoretical framework, I was not utterly uninformed about relevant research findings when collecting and analysing data. Hence, the willingness to suspend personal beliefs and ignore previous knowledge played a role in data collection and analysis processes.

The discussions were conducted around the two research questions. For the first research question, I compared the context-specific capability list generated through document analysis and focus group discussions with the ideal capability list created by myself and some capability lists generated by other researchers in order to decide on the final basic capability list relevant to elite doctoral school access in China. For the second research question, relevant literature was identified and compared with the findings of this study to illustrate the impact of social class and gender on the development of basic capabilities. It is worth noting that because the first research question of this study is the

basis for the second research question, the data analysis and discussion processes are carried out separately for the two research questions. More explicitly, after completing the data collection, analysis and discussion of the first research question, the data collection, analysis and discussion of the second question was started.

Compare with ideal capability list and other capability lists

To answer the first research question, I compared the capability list generated through document analysis and focus group discussions with two types of capability lists: the ideal capability list initialled by me and the capability lists initialled by other researchers. The first type of comparison, which distinguished between the ideal and the empirical, was crucial because external environment and constraints, such as knowledge boundary, research method limitation, and political or economic feasibility, might change over time. Sometimes empirical data sets might contain limited information on some truly significant capabilities. Under such circumstances, comparing with an ideal capability list might alter the analysis and sometimes even the results. Another potential case is that individual and social biases might limit empirical data and the capability list based on them. The comparison with the ideal capability list could help identify and reduce such biases.

As for the second type of comparison, Gioia et al. (2013: 24) suggested that the data structures and theoretical models are meaningful 'only if they can be related to what we already know'. Hence, coinciding with the archive and focus group data analysis, I cycled between emergent concepts, themes, aggregate dimensions (capabilities) and other capability lists to draw out their relationships and revelations. This process examined not only whether the identified capabilities had precedents but also whether I had discovered new concepts or themes of already existing capabilities. I selected eight studies for comparison (see **Appendix 17** for the capability lists within these studies). From each of them, apart from background information including author(s) and year, resource and

language and the research context and purposes, I mainly extracted two types of descriptive information: (1) the capabilities that might be relevant to this study and (2) the definition of relevant capabilities.

Moreover, in the final list, I did not rank the capabilities as I align myself with Williams' (2022) suggestion that it is hard to show the same respect for everyone while claiming that inequalities regarding some capabilities are more significant than others.

Compare with other studies to understand the development of basic capabilities

The studies utilised for the comparison to understand the development of capabilities were selected from multiple frequently used bibliographical databases, including three English ones: ProQuest, Springer and Google Scholar and two Chinese ones: China National Knowledge Internet and Wanfang Database. A range of keywords that were driven by the research question and research findings was used for the search[19]. These keywords were later extended by 'synonyms, abbreviations, alternative spellings, and related terms' (Xiao and Watson, 2019: 104). Given that most of the search engines here allowed the application of Boolean operators, I constructed the search strings through Boolean 'AND' and 'OR'[20]. Furthermore, grey literature like degree theses, conference proceedings and reports was ruled out due to their inferior quality. Two types of publications written in English and Chinese were selected: journal articles and books (or book chapters). Only publications within the last decade were included because they were closely related to the present situation and provided more valuable insights.

The initial literature search focused on titles and abstracts for a coarse sieve to weed out publications unrelated to the research question or dissatisfied with the inclusion criteria. I then read either the conclusion parts or full texts to decide whether the publications

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[19] The keywords were designed with the degree of precision increasing. At the early stage, I utilised relatively specific keywords for inclusive and exhaustive results. However, with the study going on, I improved the precision of the search to rule out irrelevant publications.

[20] Boolean 'AND' was applied to join the main terms while 'OR' was utilised to add synonyms

should be included for discussion or not. Both similarities and differences between the findings of this study and those of other studies were identified to increase the research accuracy concerning its validity and reliability.

4.3.4 The single case study — individual doctoral schools dilemma (SID)

Although considered a single case, data in this study were collected in four different elite doctoral schools of economics in China. In this study, I named this 'single case study-individual doctoral schools dilemma (SID)'. After completing the data collection and coding processes, I analysed the data in light of the first and second research questions on both the single case study basis and the doctoral school by doctoral school basis. In terms of the latter, while some differences existed across the individual doctoral schools, the result showed that there were mainly strong similarities overall. Moreover, a comparison between the contexts of the four elite doctoral schools of economics was conducted, further confirming that there were more similarities than differences between individual doctoral schools (see **Appendix 4**). Therefore, given that the main aim of this study was to explore the impact of social class and gender on elite doctoral school access in China at an overall level. I believe that it would be more appropriate for the main parts of the context, findings and discussion chapters to focus on the single case rather than on the individual elite doctoral schools of economics and the differences between them, albeit without ignoring any valuable results about the latter that could be discerned. This point will be further illustrated later in the context and findings parts.

This study collected mainly qualitative data, which were subjective perceptions of individual PhD students and their supervisors. These data could not, as a whole, be considered as representing any objective truth in any straightforward sense. Instead, they just comprised a palette of subjective construction. Based on this, I did not think analysis on a doctoral school by doctoral school basis could make too much sense. This belief

was subsequently verified by the fact that there were much more similarities than differences when data and contexts were analysed and compared between individual doctoral schools. Therefore, in the following part of this thesis, research findings and discussion will be presented mainly on a single case study basis.

4.4 Summary

This chapter discussed how the empirical part of this study was carried out. I first justified my empl51oyment of the case study genre and selection of the discipline of economics as a single case. Then, I illustrated my belief in such an in-depth single case study genre. Philosophically speaking, I support the interpretive paradigm. Therefore, the purpose of this study was to describe and explore the phenomenon of elite doctoral school access equality with fuzzy generalisations being made. I was then engaged in continuously shifting positions during the research to realise this purpose. Finally, how different data in this study was gathered, analysed and discussed to answer two main research questions separately was explained. The following chapters will present the results of such empirical data analysis and discussion.

V. FINDINGS AND DISCUSSIONS: SELECTION OF BASIC CAPABILITIES

This chapter represents findings and discussions related to the first research question. A provisional, situated list of basic capabilities related to elite doctoral school access in China was generated. The findings present in this chapter primarily came from admission policy and four focus group discussions. In addition, comparisons with the ideal capability list generated by me and other capability lists identified in the literature were also conducted to justify the selected capabilities. I followed Robeyns's (2003) criteria for the selection and tried to make it explicit, public, and method clear.

Before discussing the contents of the basic capability list, I want to make two points. First, the basic capability list discussed in this chapter is a working capability list specific to this study rather than universal for all contexts. It offers some purchases on what Chinese students need to access elite doctoral schools of economics. If some or all of these capabilities are absent, students cannot succeed in their PhD application. Second, the basic capability list emphasises social class and gender equality, which, as revealed by the research data, are interwoven. I argue for the development of identified capabilities as the equality metric in this study.

5.1 The SID: basic capability lists in four elite doctoral schools of economics

The focus group and document data used for answering the first research question were collected in four different elite DSOEs. When all these data were collected, I first analysed them on a doctoral school by doctoral school basis to see whether there exist differences. This section discusses the results of this attempt, which justifies my final decision on the analysis of data collected from four different doctoral schools together on a single case study basis.

Table 5.1 below indicates the approximate strength with which each capability was identified in the admission documents in the four elite DSOEs. There was a considerable degree of commonality regarding the contents of admission documents that indicated different capabilities, with merely two differences identified. The first difference lies in the capability to aspire, which was caused by the fact that the DSOE in the FDU was the only one that admitted part-time students when this study was conducted. However, given that this study was concerned merely with full-time students' experiences, this difference was not considered crucial. The second difference was related to the capability to obtain information. Among the four elite DSOEs, the CUFE was the only one that provided a reference list for its applicants. Due to this fact, the requirement of the CUFE on its applicants' capability to obtain information was slightly lower. However, when this thesis was written, the CUFE had already stopped providing a reading list. In general, there was a high degree of similarity between elite DSOEs regarding the capabilities identified in their admission documents. This fact resonated with my claim when the contexts of the four elite doctoral schools of economics were discussed that there is a high degree of convergence in their admission policy due to the centralised governance and management of the Chinese government (see **Appendix 4**).

Table 5.1. Capabilities identified in four doctoral schools' admission documents

	PKU	CUFE	RMU	FDU
Capability to aspire	✓✓	✓✓	✓✓	✓
Capability to be respected	✓	✓	✓	✓
Capability to establish guanxi	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Capability to obtain information	✓✓✓	✓✓	✓✓✓	✓✓✓
Capability to acquire knowledge and competency	✓✓✓	✓✓✓	✓✓✓	✓✓✓

Notes: ✓, ✓✓, or ✓✓✓ = estimates of degree of support for the indicated category

Moreover, **Table 5.2** below shows what participants of the four focus group discussions considered necessary for successful elite economics doctoral school access. It is noticeable that there were more similarities than differences between individual doctoral schools regarding the identification of basic capabilities by their PhD students. Some of the subtle differences seemed caused by participants' distinct ways of expression. With different words being selected, they expressed similar things. For instance, hope, expectation, and aspiration, as well as skill and ability, had similar meanings, especially in the Chinese language.

Table 5.2. Capabilities identified by focus group discussions

PKU	CUFE	RMU	FDU	Capability list
Expectation and aspiration	Hope, expectation and aspiration	Expectation and aspiration	Hope and aspiration	Capability to aspire
Practical reason	Practical reason	Practical reason	Practical reason	
	Expression of expectation and aspiration	Expression of expectation and aspiration		
Respect	Respect	Respect	Respect	Capability to be respected
Recognition and acceptance	Inclusivity	Inclusivity	Recognition and acceptance	
Time-autonomy		Time-autonomy	Time-autonomy	
Guanxi	Guanxi	Guanxi	Guanxi	Capability to establish guanxi
Information	Information	Information	Information	Capability to obtain information
Knowledge and competency	Knowledge and competency	Knowledge and skill	Knowledge, competency and skill	Capability to acquire knowledge and competency

Moreover, some items listed by different focus group discussions were reconcilable and could be merged into one capability. For instance, expectation and aspiration, practical reason, and expression of expectation and aspiration could be summarised as the capability to aspire. Respect, recognition and acceptance, and time autonomy could be added together to form the capability to be respected. More evidence that some items

could merge will be discussed further in more detail in the following part of this chapter. Meanwhile, several items were missing in some doctoral schools merely because the levels of detail of their generated capability lists were not the same. There were no fundamental differences regarding what capabilities contribute to the successful elite doctoral school access perceived by participants in different doctoral schools.

The above findings militated against paying too much attention to the differences among the four doctoral schools and supported my final decision to put all the collected documents and focus group data together for the in-depth analysis on a single case study basis.

5.2 Capabilities in admission documents

I had identified four capabilities in admission documents: the capability to aspire, the capability to establish guanxi, the capability to obtain information and the capability to acquire knowledge and competency. The following part will provide discussions on these capabilities.

5.2.1 Capability to aspire in admission documents

Regarding the basic requirements for doctoral applicants, I found the first and most crucial one in the admission documents was to contribute to national development. In other words, Chinese doctoral schools expect that applicants' PhD aspirations come from their desire to improve the country and society. For instance, DSOE in PKU's Summer Camp Admission Guide in 2019 wrote: 'We welcome students who desire to devote themselves to national rejuvenation and prosperity to make applications.' Likewise, the CUFE's Doctoral Admission Guide in 2017 also stressed: 'Applicants should be willing to serve the socialist modernisation construction in China.'

This requirement conformed to a Chinese tradition that the main aim of learning is 'to ordain conscience for Heaven and Earth, secure life and fortune for the people, continue lost teachings for past sages, and establish peace for all future generations'. This pursuit inspired countless ancient wise men in China for thousands of years and continues to inspire the current generation. In addition, another related tradition that came with economics was that its learners should make efforts to 'govern the state and benefit the people'. By exploring the laws of economics, Chinese economists strive to contribute their knowledge and abilities to society and integrate their ambitions to benefit the vast majority of the people. In almost all doctoral admission documents, requirements for such pursuits were mentioned. Although it was unclear how this point could be tested (I assume that related questions would be covered in the interview, and this assumption was later confirmed during the interview), having a similar aspiration was undoubtedly necessary for the applicants to succeed.

Apart from the willingness to contribute to national development, applicants were also required to be 'interested in economics' and be 'interested in scientific research and academic career'. For instance, DSOE in FDU's Summer Camp Admission Guide in 2019 mentioned: 'Applicants should have a strong interest in economics, have scientific research potential, and are interested in academic research in the field of economics.' I argue that relevant assessments were mainly carried out through the review of the student's research proposal and the interview, as similar keywords appeared in the related interpretation clauses:

> The interview will examine the applicants' mastery of economic knowledge and understanding of cutting-edge research. (CUFE, Application-Assessment Admission Guide, 2019)

Please introduce the applicant's academic experience, future research and study plan, and career expectations in the research proposal in around 3000 words. (PKU, Research Proposal Template, 2019)

In addition, the elite doctoral schools emphasised in their admission documents that applicants who had transferred their majors should attend some extra economics-related courses after a successful application. This additional requirement further filtered out applicants who have a genuine interest in economics and are willing to put in the effort or even go the extra mile for their interests.

Another requirement related to students' capability to aspire was being able to be fully involved in and afford doctoral study. When this research was carried out, three doctoral schools admitted merely full-time PhD students. All these doctoral schools required that 'The personnel files of candidates to be admitted must be transferred to our school before formal admission.' This requirement means students must give up their jobs before enrolling in doctoral schools. Moreover, as the only doctoral school that recruited part-time PhD students, the DSOE in the FDU also controlled the percentage of part-time students to a low level.

A full-time doctoral study means an entire investment of time and energy and requires the applicant to be able to afford their life without a job for several years. The phenomenon that most elite DSOEs in China only recruited full-time doctoral students has undoubtedly raised the price to be paid by applicants to obtain a doctoral degree. Only highly determined students who were willing to pay enough price could be admitted, which was consistent with my argument that the capability to aspire is critical for students' elite doctoral school access in China.

5.2.2 Capability to establish guanxi in admission documents

Document analysis has identified three types of guanxi crucial to students' elite doctoral school access in China. The first type was guanxi between the applicant and their supervisor, both the potential doctoral supervisor in the future and the current undergraduate or master supervisor. Guanxi between the applicant and their potential doctoral supervisor in the future was crucial first because of the ambiguity in enrolment numbers. Usually, doctoral schools announce the number of PhD students they will admit that year in their admission brochure, often released on their official websites. The number announced is the total number of students they will admit for all doctoral programs. At the same time, the doctoral school publish the list of students who have already been admitted[21] (through the summer camp system). There are three opaque points in this seemingly transparent process. The first point is that the total number of students the doctoral school will admit is not precise. We can see this point from some descriptions in the documents:

> The planned number of enrolments is just for the applicants' references. Adjustments may be made according to the final enrolment policy issued by the Ministry of Education, the status of the student source and the department's development strategy. (CUFE, Doctoral Admission Guide, 2018)

The second point is that the number of students planning to be enrolled in each doctoral program is unknown. The reserved number of expected enrolment is unreliable because it includes the number of students that will be enrolled in the successive master-doctoral program and the regular doctoral program. The number of the latter is adjustable:

> Doctoral admission will be fair, impartial and transparent. If the number of students admitted to the regular doctoral program is lower than the planned number, the

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[21] Enrolment through other methods will only start after the completion of enrolment through the summer camp system each year.

remaining planned enrolments will be automatically transferred to the successive master-doctoral program. (CUFE, Doctoral Admission Guide, 2017)

The number of students admitted to the regular doctoral program by each doctoral school will be adjusted according to the actual situation. (FDU, Doctoral Admission Guide, 2019)

The third point is that the applicants cannot learn about the reserved number of expected enrolments for each supervisor. The officially realised documents did not include information on which supervisors have already enrolled students through the summer camp model. This information is vital because supervisors who had already enrolled students through the summer camp model cannot or are less likely to enrol more students through other models. For instance, the RMU pointed out in its admission documents that: 'In principle, each doctoral supervisor recruits one doctoral student every year. Doctoral supervisors who have already recruited successive-master-doctoral students or bachelor-straight-to-doctoral students will no longer recruit more regular doctoral students.' Therefore, detailed information needs to be obtained separately from supervisors, which requires guanxi between students and supervisors. For students without guanxi, it is possible that their interested supervisor does not have the enrolment quota, but they were unaware of that. As a result, they may not be admitted, or even if they are admitted, they are unable to be supervised by the supervisor they want. Because the supervisor's expertise significantly influences PhD students' learning experience, they may have an unpleasant PhD journey.

Moreover, all doctoral schools emphasise in their admissions brochures that for applicants who majored in economics before, 'there is no need to contact a supervisor and obtain his or her permission before making application' (PKU, Doctoral Admission Guidance, 2019). However, the reality is that few students would choose to apply for a doctoral school without a specific supervisor in mind and some degree of connection with that supervisor.

Similarly, supervisors are also unlikely to admit students they do not know in advance or have had contact with before. This phenomenon will be further discussed when we talk about interview data.

In addition, for applicants who majored in other subjects before and want to apply for the successive master-doctoral program, it is clearly defined that they need to obtain consent from the supervisor and the department manager. For instance, the DSOE of PKU's Admission Brochure wrote, 'Applicants should obtain written consent from the supervisor who intends to accept their application and the manager from their applied department. The supervisor should ensure that they agree to accept the applicant under the condition that the applicant will take some extra courses in economics.' Due to this and some other stringent requirements (the applicants also need to obtain consent from their master's supervisor and have extremely outstanding academic performance and high research potential), such applicants are rare.

In addition to guanxi between the applicant and their potential doctoral supervisor in the future, guanxi between the applicant and their current undergraduate or master's supervisor is also crucial, particularly when they are applying for the successive master-doctoral or bachelor-straight-to-doctoral program because one of the prerequisites for making such applications was to obtain previous supervisor's consent. For successive master-doctoral applicants, they should 'fill in the successive master-doctoral program application form, which the applicant's master supervisor should sign' (FDU, Admission Guidance, 2018). It is worth mentioning that the master's schools usually require that each supervisor could sign a limited number (usually one) of application forms every year. Moreover, the bachelor-straight-to-doctoral applicant also needs their undergraduate supervisor's agreement to obtain the university's recommendation. Combining the university's recommendation with the doctoral schools' offer, they could finally be enrolled as a PhD student.

Another critical guanxi identified in the admission documents was guanxi in economics and related fields. All programs in the elite DSOEs required at least two recommendation letters written and signed by academics who work in the economics department or those who work in other fields with equivalent professional and technical titles. Because there is a limited number of experts that meet such requirements in China, and it requires a certain level of familiarity between applicants and their recommenders to be able to write the letter, it is not easy for applicants to find proper ones to make recommendations for them. Usually, applicants who majored initially in economics would invite their undergraduate or master teachers to make recommendations. However, establishing such guanxi is much more challenging for students who majored in other subjects before.

Finally, guanxi between academic institutions is also essential. For bachelor-straight-to-doctoral applicants, recommendations from the undergraduate university are necessary for their access to elite doctoral schools. However, only a few universities with a good reputation in China could gain acceptance from these elite doctoral schools of economics and then be eligible to recommend students. Guanxi between universities, therefore, plays its role by providing influence, in other words, a mutual affirmation and recognition:

> The bachelor-straight-to-doctoral program only accepts applications from national-level key universities. (FDU, Admission Brochure for Bachelor-Straight-to-Doctoral Program, 2019)

In addition, I collected and compared the backgrounds of students admitted to the successive master-doctoral program and found that almost all of them continued their studies within the same university. Although the admission documents clearly state that successive master-doctoral students from other universities can be recruited under certain circumstances, the actual cases were limited. However, I noticed that some applicants had changed supervisors during this process (but still stayed in the same department at the same university). From these facts, we can see that guanxi within the university is almost

necessary for successive master-doctoral programs aiming to save students' and supervisors' time and energy through continuous training. In contrast, guanxi between the applicants and supervisors is something negotiable.

5.2.3 Capability to obtain information in admission documents

Regarding the acquisition of information, the DSOEs emphasised in their admission brochures that applicants should always pay attention to the notices and documents released by them on their websites and other official channels:

> Under the principles of fairness, openness and impartiality, the School of Economics will announce the doctoral recruitment methods, the list of candidates for re-examination and the list of candidates to be admitted through its official website. Applicants are requested to check by themselves. We also welcome supervision and guidance on the entire admission process from Peking University. (DSOE in PKU, Admission Brochure, 2018)

> Before making an application, please carefully check the relevant documents realised online. The candidates themselves shall bear the consequences caused by information omission. (RMU, Admission Brochure, 2019)

As for the information that the applicants were suggested to know, the first and most basic was the enrolment method. Relevant information was crucial because, in recent years, with the decentralisation of decision-making power, the doctoral schools, rather than the central government, designed the enrolment method. Therefore, different doctoral schools may have different PhD admissions methods. For instance, from 2017 to 2019, the PKU and the CUFE utilised the application-assessment model for the regular doctoral program, while the RMU and the FDU applied the written-test model. Such distinctions require applicants to keep abreast of the latest news.

In addition, the admission documents also advised where the applicants could find the background information and contact details of the supervisors recruiting students that year. Although many of them stated that it was not necessary for the applicants to have an expected supervisor in mind or contact supervisors before making applications, the provision of relevant information means that they encouraged applicants to at least know about the supervisors and, if possible, contact them in advance. This argument was further validated through the interviews conducted at the following stage of this research.

Another information stressed in the admission documents was for the candidates who had already submitted their applications; these students were required to track the progress of their applications promptly:

> After making an application, candidates should check its progress online promptly. Please pay particular attention to the material review status and whether the online payment is successful. (DSOE in FDU, Admission Brochure, 2019)

> Some notices will be sent via SMS or WeChat Message. Please fill in your mobile phone number correctly and turn it on all the time (except during examinations). (RMU, Admission Brochure, 2019)

As for the information that was not officially provided but still identified as essential through the analysis of admission documents, the first one was the written test sample and reference list. Relevant information was particularly vital for applicants to the regular doctoral program because a written test was included regardless of the admission model. The policy showed that, unlike the entrance of undergraduate or master's studies, the written test for admission to doctoral studies in China was designed individually by the doctoral schools rather than uniformly by the MOE. Usually, each doctoral school has its fixed style and structure when designing written examination papers. Knowing this information would save a lot of time and energy for applicants from doing useless jobs. Furthermore, if applicants could obtain information related to the members of the

examination design team and their expertise, it would be much easier for them to make preparations. However, apart from the CUFE, which provided the lists of reference books for the professional knowledge test, the other three doctoral schools did not give any relevant information on their official channels. For example, the RMU Doctoral Admission Brochure emphasised: 'We do not provide tutorial classes, sample examination papers and reference lists for applicants.' Even for the CUFE, the written test sample and the reference list for the English test were also not provided:

> We do not provide written test samples. Apart from the already given ones, other
>
> subjects will not give any reference list.[22] (DSOE in CUFE, Admission Brochure, 2018)

Another type of information that I found crucial was detailed information on the interview. According to the admission documents, the interview was conducted by an expert group. For instance, the DSOE in FDU mentioned: 'The expert group is composed of staff with associate professor titles or above. Each group contains no less than five people.' Usually, questions related to the participants' proposed research and economic acquaintance were asked to test a range of their abilities and competencies:

> According to the cultivation aims, the interview comprehensively examines the
>
> applicant's professional knowledge, logical thinking competencies, innovation ability,
>
> understanding of the discipline's prospects, and English skills. (DSOE in PKU,
>
> Admission Brochure, 2018)

We could see that the above descriptions were very general. Information like who will be in the assessment team and how different abilities and competencies will be tested and scored was not mentioned. Like the written test sample and reference list, such information needs to be obtained by the applicant through unofficial channels. Here, I want to emphasise the keyword 'unofficial' because there were a lot of regulations and restrictions on what type of information could be provided and who could provide them:

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[22] Here the already given ones mean the reference list for the professional knowledge test; other subjects mean English.

It is strictly forbidden for any department and staff within the doctoral school to organise or participate in the enrolment counselling activities. Students are not allowed to hold or participate in exam-related activities such as cheating and false promotion. If family members or related people apply for the PhD, relevant staff should avoid engaging in the recruitment process that year. (PKU, Doctoral Admission Guidance, 2019)

5.2.4 Capability to acquire knowledge and competency in admission documents

I noticed that some knowledge and competencies were stressed in the doctoral admission documents. The first type of knowledge was professional knowledge, as was stressed by the CUFE in its Admission Brochure in 2019: 'We require applicants to have a relatively high level of knowledge in economics and have taken courses such as Intermediate Microeconomics and Intermediate Macroeconomics with excellent grades.' Further analysis showed that professional knowledge was the primary concern for all doctoral admission methods, including material review, written tests and interviews. For material review, all doctoral schools required applicants' transcripts, especially professional course transcripts, to learn about their mastery of professional knowledge. Moreover, although the proportion and content of each section were different, a typical written test was composed of professional knowledge and English sections. As for the interview, professional knowledge was also the main object of investigation throughout the process. In addition, two types of untypical applicants were required to take additional professional knowledge tests to obtain application qualifications: applicants with equivalent academic ability and trans-major applicants, illustrating the high significance that doctoral school had placed on professional knowledge:

Applicants with equivalent academic ability are required to take additional tests on political and professional knowledge. Those who have not taken the additional tests or

have not passed any of the additional tests will not be admitted. (PKU, Admission

Brochure, 2019)

Trans-major applicants are required to take two examinations on professional

knowledge organised by the doctoral schools. (RMU, Admission Brochure, 2019)

In addition, English was another type of essential knowledge. Similar to professional

knowledge, evaluating applicants' English was also included in all doctoral admission

methods. Whichever admission model it was, applicants were required first to submit some

materials to prove they could master and use English proficiently. Taking the PKU as an

example, the accepted proofs in 2019 are listed in **Table 5.3** below.

Table 5.3. Accepted materials to prove applicant's English skills by PKU (2019)

Type of material	Requirement
PKU-GATE	60 or above
TOEFL	90 or above
GRE	310 or above
GMAT	650 or above
College English Test Level Six	580 or above
Professional College English Test Level Four or Eight	Passed result
IELTS (band A)	6.5 or above
Degree obtained in English-speaking countries	
Source: PKU, Admission Brochure, 2019	

Moreover, English was the key content to be examined for both the written test and the

interview:

The written test will have three sections: one English section and two professional

knowledge sections. (FDU, Admission Brochure, 2019)

Interview: The full score is 100 points, including the English listening and speaking

ability test (10%) and the scientific research potential test (90%). (CUFE, Admission

Brochure, 2019)

The third type of knowledge identified was political knowledge. In all admission documents supporting the leadership of the Communist Party and socialist system, having the right political attitudes and being patriotic were crucial. However, I argue that political knowledge was vital for applicants with equivalent academic ability because they were required to pass a specially designed examination before continuing with their applications.

The last type of knowledge was mathematical knowledge. Although typical applicants for a PhD in economics should have studied in a related field before, doctoral schools clarified that they also welcome applications whose previous majors were science and engineering or similar subjects. For instance, the CUFE Admission Brochure mentioned: 'Applicants should be good at math, and have taken advanced courses such as calculus, linear algebra, probability theory and mathematical statistics, with excellent grades.' Likewise, the PKU Admission Brochure also said: 'Applicants who did not major in economics and management must be good at math.' We can see from the above citations the importance of mathematical knowledge.

As for competency, the most mentioned one in the admission documents was research competency. It was primarily examined through material review and interviews. For the material review, all doctoral schools first required applicants' thesis (both degree thesis and other types of thesis), published (or sometimes unpublished) academic papers and proofs of other research results to be provided. In addition, applicants were also required to submit a research proposal. Although each doctoral school had different formats and word limits (ranging from 3000 to 5000 words) for research proposals, their focus was on the applicant's understanding of economic research and future research plans. For the interview, according to the documents, a large part of the discussion was concentrated on the applicants' previous research experiences and future research plans:

The applicant will communicate with an expert group composed of doctoral supervisors. The communication will focus on the applicant's scientific achievements and the doctoral-stage research plan. (Bachelor-Straight-To-Doctoral Program Admission Brochure, PKU, 2019)

Apart from the research competency, some other competencies were mentioned in the admission documents, including but not limited to innovation ability, the ability to express and critical thinking ability. However, the admission documents did not clarify the specific way of examining these abilities. Nevertheless, there was no doubt that doctoral schools hoped to recruit applicants with compound skills and talents.

5.3 Capabilities in focus group discussions

Apart from the four capabilities identified in the admission documents, the focus group discussion mentioned another capability: the capability to be respected. Therefore, there were five capabilities in focus group discussions, which will be discussed in this part.

5.3.1 Capability to aspire in focus group discussions

All four focus group discussions agreed that establishing PhD-related expectations is the first and the most challenging step to elite doctoral school access:

The first step is always difficult. A student should have PhD related expectations in order to succeed. (Hua, middle-class, female)

I think we must first dare to think about it. This is the hardest step. (Jiang, working-class, male)

Some participants, especially working-class ones who were the first generation within their family to enter universities, described their PhD access as unconventional and bold. They owed their success firstly to their capability to aspire. Chu (working-class, male) mentioned: 'It was hard for people like us to imagine alternative choices to that of our

183

family members; no one in our family even attended universities. Dare to expect something that seems far away was important to us.' Likewise, Jin (middle-class, male) underlined: 'The key that restricts some people's success, especially those with disadvantaged family backgrounds, is not their ability but their way of thinking. Jumping out of the familiar track and choosing something unusual is not easy.' Also, Miao (working-class, female) pointed out: 'Many people are very talented and suitable for doing a PhD, but this choice is less conventional and, therefore, never have the opportunity to emerge.' Many people are talented and suitable for PhD, but this choice is unconventional, and hence never have the opportunity to emerge.

The practical reason was emphasised in the focus group discussions to facilitate the development of PhD-related aspirations:

> Practical reason is essential. People need to look at their situation rationally and comprehensively and understand their inner hearts to determine that the PhD is the right choice. (Kong, working-class, male)

> After all, doing a PhD is not an ordinary choice. It requires the ability of analysis and reasoning to know whether this choice is correct or not. Only if people have firm confidence in what they are doing can they ultimately succeed. (Li, working-class, female)

Regarding developing the ability of practical reason, there was a disagreement among focus group participants. Most of them think that education, especially formal school education, has made a significant contribution, as was suggested by Bai (middle-class, female): 'A significant function of school education is to help us analyse and solve problems, which is similar to the processes of practical reason.' However, some participants disagreed: 'School education only teaches us to analyse some impractical issues. The keen judgments of what is possible and impossible in our lives, what is appropriate and inappropriate for us, do not come from this' (Han, working-class, female).

Similarly, Kong (middle-class, male) argued: 'Education is undoubtedly helpful, but it is by no means decisive. Life experience, personal horizons, and even talent are essential.'

It was also agreed in the focus group discussions that through verbal, written or other forms of expression, students' capability to aspire could be strengthened:

People need supports of others to determine their choice. If they cannot express their thoughts and aspirations, their freedom to choose what they want is likely to be compromised. (Lu, working-class, male)

The support of others can strengthen aspirations because most people need the outsider's approval to determine their choice. (Chang, middle-class, female)

5.3.2 Capability to be respected in focus group discussions

However, unlike in the admission documents, the focus group discussions strongly emphasised the capability to be respected. This difference means that the capability to be respected has high practical significance but was not valued by PhD admission policymakers in China.

The focus group discussions all reached a consensus that despite the significant progress, China is a country where women are still systematically less valued than men and not viewed as fully human. The sexist, masculine and paternalistic culture still rules today. Therefore, the capability to be respected is hugely important for elite doctoral school access, especially for female applicants, regardless of their social class backgrounds. Dou (middle-class, female) argued:

I think the pressure faced by female students in the application process is far greater than that of male students. A large part of this pressure comes from traditional culture and ideological prejudice. It is imperative for female students to be respected and affirmed.

Also, Hua (middle-class, female) mentioned:

It's the 21st century now, but I found many people's thinking still stays in the past, believing that women don't need to receive too much education. It's their job to take care of their husband and children.

Some male participants also expressed similar views. For instance, Feng (middle-class, male) and Jiang (working-class, male) indicated:

There is still a long way to achieve true equality between men and women in China. It is far more difficult for female students to be recognised and respected than male students.

Women are still a disadvantaged group in terms of this issue, and it is often considered unnecessary for them to have too much education.

For some female participants, what was essential to their success was that 'we were not forced by anyone else and were free to be whomever we wanted to be and do whatever we wanted to do' (Bai, middle-class, female). Similarly, Cao (working-class, female) pointed out: 'It was important for us to be given the right to say I do not want to do this and I will do that based on our willingnesses'. Comparatively, Lang (middle-class, female) was more straightforward and said: 'I think the right to say no is valuable. Freedom is not about doing what you want but avoiding things you don't want to do.'

Domestic labour was mostly mentioned by female participants regarding what they did not want to do. They argued that they did not want to do all the housework for their family as their husband 'also has one head, two arms, two legs and everything' (Cao, working-class, female). 'Both spouses share the responsibilities of the family, and housework is not the obligation of one person (Chang, middle-class, female). These arguments were significantly different from those of the older generation in China. It was emphasised in the past that the husband should work hard to develop their career and the wife should undertake housework. As was commented by Chen (middle-class, female): 'In the days of our parents, married women tended to focus on their family and could not receive more

education. However, we now live a different life. Even if we are married, no one except ourselves can tell us what to do. I was so delighted that no one forced me to leave school and be a full-time housewife, which allowed me to fulfil my PhD dream.' Chen (middle-class, female) then added: 'I think we should all be grateful for the changes of the times. In the past, women could only be domestic workers, but now society has given us a variety of possibilities. Our value is now recognised, and we are treated more fairly.'

Apart from domestic labour, child-caring was also highlighted:

It is the responsibility of both father and mother to take care of the children, but in most cases, the father plays a very distant role in China. (Dou, middle-class, female)

Mothers who have the child should have the opportunities to pursue what they want instead of devoting all their time and energy to caring for the child. (Pang, middle-class, female)

Together with these rejoicing remarks related to the allocation of domestic work and child-caring responsibility, gendered social traditions, norms and expectations were also constantly mentioned during the focus group discussions. Ge (middle-class, female) indicated:

For the majority of Chinese parents, it is still less likely for them to encourage their daughters to do a PhD compared with sons. My parents were like this. Their disapproval was not caused by economic factors but due to traditional norms.

Likewise, Han (working-class, female) pointed out:

Many Chinese parents believe that marriage is the most important thing for women, far more important than their education or career development. Many people's judgment and evaluation of a woman is mainly based on her marriage rather than her achievements. This trend makes it more difficult for female students to apply for a PhD, which is unfair.

And also, Li (working-class, female) indicated:

Chinese society's acceptance of women's education is gradually improving, but as the highest level of education, PhD requires more time and financial investment, which many people will consider unnecessary. Therefore, the challenges faced by women regarding PhD access are more significant than those faced by men.

We could notice from these arguments that female students still feel alienated from PhD applications due to Chinese traditions and norms. Even the winners had experienced and overcame far more hardships behind their success than male students, a more detailed discussion of such differences will be provided in the next chapter.

5.3.3 Capability to establish guanxi in focus group discussions

Nearly all of the participants in the focus group discussions believed that guanxi continuously plays a crucial role in facilitating PhD applications in China.

China is a guanxi society. There is no doubt that guanxi always has an impact on doctoral application. (Bai, middle-class, female)

Many people may not have noticed or are unwilling to admit that guanxi did play a significant role in their application process. (Peng, middle-class, male)

Furthermore, a substantial proportion (around half) of the participants mentioned that, especially in recent years, when the PhD application changed from the written test to the application assessment and summer camp systems, the impact of guanxi had increased significantly:

After turning into the application assessment and summer camp systems, PhD admission has become more subjective. It is no longer an absolute standard to determine who is admitted, so the influence of guanxi was getting stronger. (Cao, working-class, female)

The change of enrolment method may not have much impact on particularly excellent applicants, but for ordinary applicants with similar abilities, who is admitted and who is

not depends on the judgements of the supervisors. At this moment, guanxi is critical. (Jin, middle-class, male)

These comments conform to some scholars' prediction that the prevalence of guanxi would increase with a higher degree of institutional uncertainty (Chang, 2011; Bian and Zhang, 2014). Moreover, some focus group participants also stressed that under the changing context, forms of guanxi exist in PhD application processes had adjusted, and the new nature and mechanism of guanxi had been legitimised:

With the changes in enrolment methods, the role of guanxi in the entire admission process has changed. (Fang, working-class, female)

The admission process is different. Hence, what types of guanxi work and how these guanxi works must be different. (Feng, middle-class, male)

I then asked the participants their definition of guanxi and noticed that the most mentioned concepts included 'exchange of resources and benefits' and 'bond of favour and interest'. Qian (middle-class, male) explained: 'Guanxi refers to the bond of favour, a channel for mutual exchange of benefits.' Similarly, Kong (working-class, female) defined: 'Guanxi means the process of facilitating each other through the exchange of resources.' Ge (middle-class, female) also mentioned: 'Guanxi is the interpersonal communications established by the bond of interest.'

Apart from being a type of social exchange or bond, another characteristic of guanxi mentioned by the participants was culture-specific. Some students stressed that guanxi was not translatable to a simple English phrase equivalent because it was unique to China and closely related to the Chinese philosophy of life:

I think what do we mean by guanxi in Chinese is different from what do we mean by social connection or social relation in English. The meaning of guanxi may be more complicated. (Chen, middle-class, female)

Although Western society also has the term such as social connection or social contact, their meanings are not the same with guanxi. Guanxi is a vocabulary with Chinese characteristics. (Lu, working-class, male)

At first thought, I considered guanxi a bit similar to the old boy networks in western countries, but later I found that the two were quite different after careful thinking. I think the main reason is the cultural difference. For example, Chinese people may pay more attention to the notion of face, which is unique to China. (Hua, middle-class, female)

It was further explained by Lu (working-class, male) that: 'The guanxi in China is more like a family-based responsibility and bondage. It exists in all aspects of life and has a strong impact on every Chinese people.' Meanwhile, Qin (middle-class, male) mentioned: 'Guanxi is equivalent to power, and power is inseparable from the distribution of scarce resources in China.' Moreover, Shen (working-class, female) underlined: 'It is easier for us to build trust with whom we have a relationship, and this trust could bring us more opportunities.' From their words, we could see that guanxi is crucial to Chinese people, both in terms of their daily life and also when they are in crisis; and for many participants, elite doctoral school access is no doubt a kind of crisis:

We spend time and energy establishing and maintaining guanxi to provide help at critical moments, and PhD application is such a moment in life beyond all doubt. (Dou, middle-class, female)

Students would all try their best to use available guanxi for the PhD application because this is a crucial moment in their life. (Su, middle-class, male)

5.3.4 Capability to obtain information in focus group discussions

Information was another significant factor related to elite doctoral school access derived from the focus group discussions:

There is an old Chinese saying that we should not fight unprepared battles. It is essential to have sufficient information before application. (Chang, middle-class, female)

The doctoral application should be divided into different stages. The first stage should be the information collection and collation stage. (Cao, working-class, female)

It was generally agreed that multiple forms of information are required for elite doctoral school access. Tao (working-class, male) explained: 'A single source of information is not enough. Students need to collect different and comprehensive information from multiple channels to stand out from the PhD competitions.' Likewise, Wang (working-class, female) argued: 'Diversity is an essential feature of the information required for doctoral applications. Comprehensive information can bring more assurance.' Information was divided into two categories by some participants based on whether guanxi is required. As was suggested by Shen (working-class, female): 'There are two main types of information, information that needs guanxi and information that does not need guanxi.'

Furthermore, it was mentioned in all three focus group discussions that students with different backgrounds have different abilities to obtain information, which leads to information asymmetry:

Some types of information can be collected through personal efforts. Others need guanxi to obtain. The latter is often more helpful and could cause differences between different groups of people. (Sun, working-class, male)

I think the main reason for the difference regarding information collection is guanxi. Some people's families are more related and can obtain valuable information that others cannot. (Bai, working-class, female)

Moreover, the fact that the doctoral enrolment method had changed from the written examination to an application assessment system contributes to the 'opacity rather than

transparency' of PhD application (Ball, 2020: 10). It was against the background of enhancing complexity that applicants were collecting relevant information:

> The application assessment system utilises more diversified standards to evaluate the applicants. To understand all these standards, students need to acquire more information. (Su, middle-class, male)

> The new enrolment system has higher requirements for information acquisition. In the past, it was only written examinations, and the scores were everything. But now, we also need to attend the comprehensive quality evaluation and the interviews, and the standards are very vague. (Lang, middle-class, female)

5.3.5 Capability to acquire knowledge and competency in focus group discussions

Focus group discussions also verified the importance of the capability to acquire knowledge and competency. Many participants described it as the foundation of success:

> After all, a PhD is a process of learning and research, which requires relevant knowledge and abilities. Only on this basis, everything else makes sense. (Wang, working-class, female)

Discussions on changes in enrolment methods still exist in this section. It was widely agreed that based on the examination of knowledge in the previous recruitment method, the new application assessment and summer camp systems had added the test of ability:

> The written test only the participants' mastery of relevant knowledge in the past, while the current system examines knowledge and abilities. (Wu, working-class, female)

> Enrolment methods are becoming increasingly complex. More and more things are investigated, from mere knowledge in the past to the knowledge and abilities at present. (Xie, middle-class, male)

Participants believe that most of the required knowledge can be obtained through formal school education. Xu (middle-class, male) argued: 'The knowledge that the doctoral

application examines, such as English and professional knowledge, is all taught in the school.' Comparatively speaking, the abilities are harder to get. Yan (working-class, male) explained: 'Cultivating the abilities valued in the PhD application processes is not an easy task. It cannot be achieved overnight and requires years of accumulation.'

However, the participants said that they were 'not very clear' about what specific abilities are valued and examined during the PhD application processes:

> The enrolment guide is too simple to describe the requirements of abilities, which is often very confusing. (Chen, middle-class, female)

> Understanding the required abilities depends entirely on applicants' feelings, and the official explanations are too general. (Jin, middle-class, male)

A divergence in the focus group discussions was whether the assessment of abilities could be more clarified and standardised. Some participants thought this could be achieved. For instance, Qin (middle-class, male) mentioned: 'I think the doctoral schools can list which abilities will be examined and what are their expectations for these abilities.' Likewise, Tao (working-class, male) said: 'The doctoral schools can at least describe the required abilities in more detail so that candidates have a deeper understanding of them.' However, some others consider this unachievable. Shen (working-class, female) argued: 'The evaluation of abilities is inherently a more subjective matter, and it is difficult to quantify it with a unified standard.' Regardless of such disagreements, there is no doubt that knowledge and abilities are essential for PhD applications in China.

5.4 Comparison with other capability lists

The analysis of the document and focus group discussion data revealed that five capabilities are essential for elite doctoral school access in China. I then compared the five capabilities with capabilities in other lists to justify her selection of them to form the basic capability list.

5.4.1 Comparison with the ideal capability list

Compared with the final basic capability list, the basic capability list initialled by me did not include the capability to establish guanxi. Such a difference may be related to my personal experience. Although I come from China, I have not experienced Chinese doctoral applications. I assumed that the significance of guanxi for doctoral admission is not high based on my understanding of China's undergraduate enrolment (which I had experienced before). However, subsequent parts of this study have found that admissions at different educational levels vary widely in China, which explains why I missed this capability in my capability list.

Besides, the capability to afford school lives financially was included in my capability list but not selected for the final basic capability list. This distinction was also caused by my misunderstanding towards doctoral education in China. As a self-funded doctoral student in the UK, I thought that economic factors primarily affect doctoral admissions. However, during the following part of this study, I learnt that scholarships and grants in China cover almost every student, significantly reducing the economic factors' impact on students' PhD access.

In addition, some capabilities on my capability list added details to the capabilities on the final capability list. For example, my capability list contained the capability to plan for the future. This capability was eventually combined with other capabilities to become the capability to aspire. Another example was the capability to be treated with dignity and the capability to be treated equally. These capabilities were later integrated into the capability to be respected on the final capability list.

5.4.2 Comparison with other capability lists in the literature

Capability to aspire

A significant number of researchers also stressed the capability to aspire. Appadurial (2004) emphasised that the capability to aspire constitutes a resource for people, especially disadvantaged ones, to context and change their welfare conditions. Walker (2007: 266) defined the capability to aspire as 'motivation to learn and succeed, to have a better life, to hope' and stressed that 'aspiration produces new possibilities' and is something 'on which other capabilities can all build'.

In Walker's (2007: 263) research, which focused on gender equality in South Africa, girls stressed the reflective choices they could have for diverse forms of good and valuable lives. Based on that, Walker (2007: 262) put forward the term 'thin autonomy', which included independent and critical thinking, reasoning, reflection and the learner's agency and responsibility for learning. The 'thin autonomy' was later developed into 'capability of autonomy', which was defined as being able to acquire relevant information, make choices, and plan a life independently (Walker, 2007: 262). Likewise, Schuller et al. (2004: 190) explained that autonomy enables 'people to have a sense of a future for themselves, for their families and perhaps also for their communities, which they can to some extent control or influence' and through it 'the notion of choice is present in ways which did not previously exist, and horizons are extended beyond what might have been imagined'. Meanwhile, Walker (2007: 265) also put forward the capability to aspire, which he viewed as 'commensurable with autonomy and planning a life'. Walker (2007) argued that the capability to aspire is a vital capability related to education in itself, entirely not reducible to any of the other capabilities. Therefore, in Walker's (2007) capability list, the capability of autonomy and the capability to aspire were separate capabilities due to their critical importance in girls' education. However, in this study, the capability to aspire is developed through the capability of autonomy. Therefore, in this study, the capability of autonomy was incorporated into the capability to aspire.

Other capabilities that added details to the capability to aspire were the capability to hope, the capability for voice and the capability of practical reason. As was pointed out by Hage (2001: 3): 'Hope is not related to an income level. It is about the sense of possibility that life can offer. Its enemy is a sense of entrapment, not a sense of poverty'. With hope, people develop new aspirational possibilities and expand their horizons for life. Apart from hope, voice also nurtures and supports the capability to aspire. If a person knows how to express himself or herself, he or she could make significant changes. Walker (2007) defined voices as the capability to inquire, debate, contest, and participate critically. Moreover, I also found that Nussbaum (2000) and Terzi's (2007) capability of practical reason contributes to the capability to aspire, as it enables people to develop a vision of the good, critically think about and plan their life and reflect on 'the relation between means and ends' (Unterhalter and Walker, 2007: 40). Nussbaum (2000) stressed that it is the practical reason that makes human beings responsible agents who are able to determine their destiny. Similarly, Sen (1992) put forward the notion of reason to value, which emphasised that people should scrutinise their motivations to value particular lifestyles. It is no doubt that interpreting critical reason processes tell us more comprehensively about the development of the capability to aspire.

Finally, I found that the capability to aspire is also related to Nussbaum's (2000) senses, imagination and thought, a 'creative, ethereal concept' that emphasises the ability to think from others' perspectives and develop informed and compassionate understandings of their emotions and desires (Hart, 2013: 79). In contrast, the nature of the capability to aspire is different. Though related to senses, imagination and thought, the capability to aspire is more pragmatic as it is 'both goal-oriented and concerns the future of the self or the agency of the self in relation to goals concerning others' (Hart, 2013: 79). Whereas Nussbaum's senses, imagination, and thought are significant factors contributing to the capability to aspire, they are not substitutes.

Figure 5.1 below summarises the capabilities identified from the other capability lists that added details to the capability to aspire. The five capabilities on the left form part of the meaning of the CTA in this research.

Figure 5.1 Capabilities from other capability lists that added detailed to the CTA
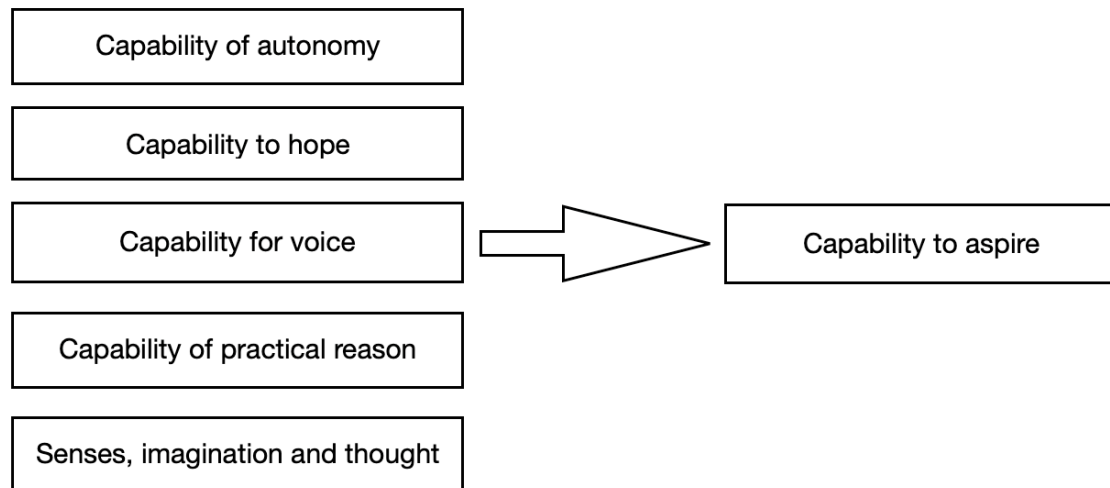
Capability to be respected

Walker (2007: 262) defined respect as 'constant affirmation of their worth', 'being treated with dignity', 'not being diminished or devalued because of one's gender, social class, or race' and 'being able to act inclusively'. He also stressed that girls should be equipped to pursue opportunities they deserve and value. Similarly, Robeyns (2003: 79) considered respect as 'enjoying the freedom to be respected and treated with dignity'.

I also noticed that some capabilities drawn from other capability lists could be added to the capability to be respected. The first one was Alkire's (2002) 'empowerment', defined as solving problems and making decisions by themselves. Then there was 'emotional integrity and emotions', both mentioned by Nussbaum (2000) and Walker (2003), which stresses not having one's emotional development blighted by negative mental states, such as worry, fear, loneliness, anxiety and restlessness. It was noticed in some studies that women suffer more from emotional issues than men, and this phenomenon is not biologically caused (Lahelma et al., 1999; Fuhrer et al., 1999). In this study, I argue that

this fact is closely related to the difference between men and women regarding their capability to be respected.

Apart from 'empowerment' and 'emotional integrity and emotions', Robeyns's (2003: 71) 'time autonomy' and 'domestic work and non-market care' were also related. For Robeyns (2003), 'time autonomy' refers to people's ability to allocate their time freely and independently and be free from time-related stress, which contributes to the capability to be respected. It was argued by Robeyns (2003) that time autonomy was a significant social issue in many Global North countries and generally to women's disadvantage. I noticed in this study that similar situations also exist in China. Women have less freedom than men regarding their time arrangements. Moreover, Robeyns (2003: 72) defined 'domestic work and non-market care' as 'being able to raise children and to take care of others', which I believe should be revised into 'being able to raise children and to take care of others together with other family members, especially husband' in the context of China. Similar to Robeyns (2003), I also found that domestic work and non-market care are one of the primary resources for gender inequality in this study.

Capability to establish guanxi

As was discussed in the previous section, guanxi is a type of social relation peculiar to China. Although the capability to establish guanxi has never appeared in any capability list, the social relations similar to it have been mentioned a lot. For instance, when generating a capability list on gender equality in education, Walker (2007: 261) defined social relations as being able to establish friendships with others, solve problems and tasks together, and create a sense of belonging and stress students 'capability to be a full participant in society' and explained that:

> In the context of schooling such social relations might take the form of an institutional culture, supportive teachers, and care from and to peers in learning arrangements.

198

Another example was the capability list generated in 1965 through the Swedish approach to welfare. In that capability list, people's command over resources in the form of social relations was stressed and summarised as the capability of 'family and social integration' (Erikson, 1993: 72).

Likewise, Robeyns (2003: 78) also included 'social relations' in her capability list and emphasised the importance of people's ability to form, nurture, and enjoy social connections. Robeyns (2003) stressed two dimensions of social relations: social networks and social supports. Social networks concern the number of people in one's network, the level of intimacy, and the frequency of contacts. Social support concentrates on the type and amount of support people could get. Similar to Robeyns's arguments, the empirical data of this study also indicates these two dimensions.

In addition, Nussbaum (2000: 78) used the word affiliation to express a similar meaning and defined it as 'being able to live with and toward others, to recognise and show concern for other human beings, to engage in various forms of social interactions'.

Capability to obtain information

The capability to obtain information was not listed as an item in any other capability list. Although it was constantly mentioned when describing other capabilities. For example, Walker (2007: 274) argued that 'having information on which to make choices' is essential for the development of the capability of autonomy. However, I believe it is crucial for elite doctoral school access and deserves to be emphasised separately.

Capability to acquire knowledge and competency

Knowledge and competency existed in many of the other capability lists. In Robeyns's (2003: 79) proposed capability list for gender inequality assessment, she mentioned 'education and knowledge' and defined them as 'having the freedom to be educated and to

use and produce knowledge. In the capability list developed through the Swedish approach to welfare, people's possession of educational resources and command over knowledge was also viewed as an essential capability that impacted their standard of living (Erikson, 1993). Also, in Alkire's two capability lists, one for universal use and the other for educational processes, knowledge was both mentioned.

It was mentioned by Walker (2007) that knowledge and competency have two functions: to enable people to make future choices and to delight people with their intrinsic good. This research stressed the first function and argued that the capability to acquire knowledge and competency expands people's agency, opportunities and freedom. With the accumulation of knowledge and competency and the power that accompanies it, students form their understandings and views towards the world (Thomson, 1999).

5.5 Summary and the basic capability list

Based on the multidimensionality of the CA, I argue that all the capabilities and the dimensions discussed above are essential for students' elite economics doctoral school access. Therefore, we now have a basic capability list for the elite economics doctoral school access in China (see **Table 5.4** below).

Table 5.4 Capability list for the elite economics doctoral school access in China

Capability to aspire: being able to think and reason critically to develop hope and expectations and express and realise them properly.
Capability to be respected: being able to act inclusively, be treated with dignity and pursue deserved opportunities.
Capability to establish guanxi: being able to connect with valuable others through social networks and to provide and receive social support.
Capability to obtain information: being able to collect, process and apply useful information.
Capability to acquire knowledge and competency: being able to be educated, to master and make use of the required knowledge and competencies.

All the capabilities on this provisional capability list, however revisable, are important and valuable for the evaluation of social class and gender equality in China and the exploration

of the topic of this study. In other words, we now have a conception of what capabilities count for China's elite economics doctoral school access. If any one of them were not present or being developed, students were unlikely to gain access successfully.

Some capabilities on the list could also be interpreted as the resource of others. For instance, the capability to be respected is 'a valuable state of being in itself', but it could also be considered as a prerequisite for the capability to aspire (Robeyns, 2003: 76). Also, the capability to establish guanxi is a significant capability while also a vital source for acquiring information. I agreed with Robeyns's (2003) argument that as long as these capabilities are important in their own right, it does not matter whether they are simultaneously resources for other capabilities.

In the next chapter, I will present findings related to the second research question: How do social class and gender impact the development of basic capabilities? Factors that impact the development of five capabilities in the capability list, as well as social class and gender equality, will be addressed.

VI. FINDINGS: DEVELOPMENT OF BASIC CAPABILITIES

To further disentangle the complicated mechanisms by which social class and gender inequalities regarding elite doctoral school access happen in China, this chapter talks about findings related to the second research question: How do social class and gender impact students' development of basic capabilities? Drawing on the Sen-Bourdieu theoretical framework and the results of empirical data analysis, the capability development process was achieved firstly by distributing relevant resources and then converting these resources into basic capabilities. Accordingly, the factors discussed in this chapter can be separated into two groups. The first group of factors were related to the unequal distribution of resources, while the second group were relevant to the unequal conversion of resources into basic capabilities.

This chapter will discuss all the identified factors and their impacts on Chinese students' elite doctoral school access. All these factors were affected by social class or gender and were related to one of the five capabilities in the basic capability list. Moreover, although these factors will be discussed individually, they played their part simultaneously instead of separately in the actual capability development process.

6.1 The SID: development of basic capabilities in four elite doctoral schools

In this section, I explain why I chose to analyse and present empirical data relevant to the second research question on a single-case rather than doctoral school-by-doctoral school basis. This study concerned both structure and agency to interpret students' development of basic capabilities. Accordingly, the identified factors can be divided into two groups: social factors and personal factors. Social factors foregrounded resources, social norms, policies and power relations. All the social factors discussed in this chapter were unequally distributed either between students with different social-class backgrounds or those with different gender backgrounds. Personal factors stressed

participants' physical or mental attributes. I identified them to explain why a small number of disadvantaged students could still succeed.

In this study, I first analysed the interview data on a doctoral school-by-doctoral school basis. Regarding the social factors, results indicated that although the impact of social class and gender on certain factors was weaker in some doctoral schools than others, overall, the differences between the four elite doctoral schools were minor (see **Table 6.1** below). Such minor differences will be pointed out when related factors are discussed. As for the personal factors, the results showed that the four doctoral schools were highly consistent. These preliminary results supported my decision to analyse and present the interview data on a single-case basis.

Table 6.1. Capability development in four elite doctoral schools (structural factors)

	PKU	CUFE	RMU	FDU
Parents' expectations	Social class	Social class	Social class	Social class
Family economic conditions	Social class	Social class	Social class	Social class
Sense of future	Social class	Social class	Social class	Social class
Expression of aspiration	Gender	Gender	Gender	Gender
School supports	Social class	Social class	Social class	Social class
Sense of certainty	Social class	Social class	Social class	Social class
Household duties	Gender	Gender	Gender	**Weaker**
Supervisors' preferences	Gender	Gender	Gender	Gender
Social values and expectations	Gender	Gender	Gender	Gender
Types of guanxi	Social class	Social class	Social class	Social class
Embedded resources	Social class	**Weaker**	Social class	Social class
University guanxi	Social class	Social class	Social class	Social class
Information strategy	Social class	Social class	Social class	Social class
Primary concerns	Social class	Social class	Social class	Social class

Information behaviour	Gender	Gender	Gender	Gender
Study habits	Social class	Social class	Social class	Social class
School learning atmosphere	Social class	Social class	Social class	Social class

Notes:
Social class (or gender) means the listed item in the particular doctoral school was impacted by social class (or gender)
Weaker means the impact of social class or gender was weaker than in other doctoral schools.

6.2 Capability to aspire

Seven factors were found to be relevant to the development of the capability to aspire (see **Figure 6.1** below): parents' expectations, family economic conditions, sense of future, expression of aspiration, school supports, sense of certainty and persistence and perseverance. The first two impact the distribution of resources, and the rest affect the conversion of resources into the capability to aspire.

Figure 6.1. Factors related to the development of capability to aspire

Distribution of resource:
Parent's expectations
Family economic conditions

Conversion of resource into capability:
Sense of future
Expression of aspiration
School supports
Sense of certainty
Persistence and perseverance
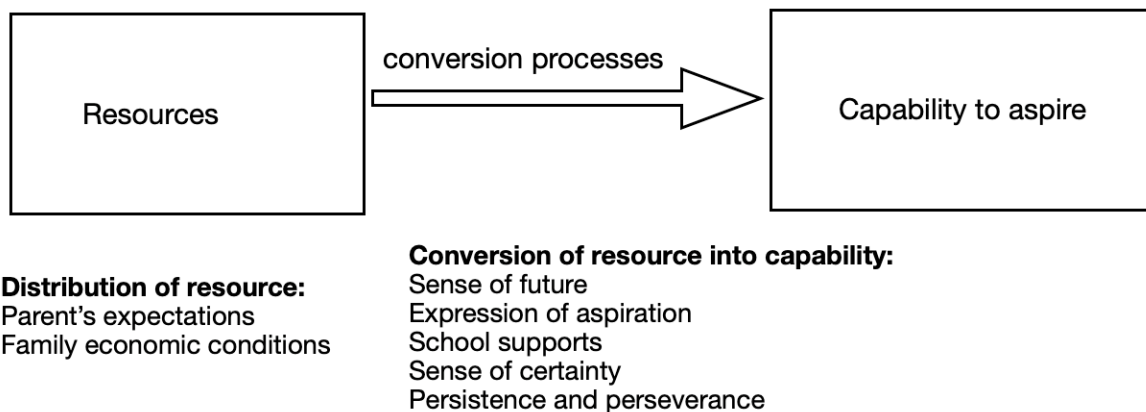
6.2.1 Parents' expectations

This study found that parents' expectations substantially impacted PhD students' elite economics doctoral school access, and such impacts worked mainly on the development of the capability to aspire. The interview data showed significant differences between parents' expectations regarding their children's PhD access across social classes. Overall,

middle-class parents, especially those with excellent educational achievements, tended to have high expectations regarding their children's PhD access and were more likely to strategically promote their children's capability to aspire. In contrast, working-class parents were often in conflict when it came to this issue and consequently could not contribute to or even impede their offspring's development of the capability to aspire. Parents' possession of cultural capital primarily dominated such differences.

The interview data illustrated that the expectations of parents, in particular middle-class parents, played a significant role in students' desire to pursue a PhD degree:

My parents had always expected me to get a doctoral degree. To live up to their expectations was an important motivation for me. (Bai, middle-class, female)

I think the expectations of my parents were also part of the reason. I wanted to be their pride. (Hua, middle-class, female)

Furthermore, it seemed that many middle-class parents in China, especially those with advantaged educational backgrounds, tended to have high expectations regarding their offspring's PhD access. Impacted by their academic success, they usually expect their children not only to entry to a doctoral school but also to entry to an elite doctoral school to maintain or surpass their current social status and live a better quality of life:

My mother is an undergraduate graduate, and my father is a master graduate. They got the chance to move from a small town to a big city and live a high-quality life because of their academic success, so they always hoped that I could step forward to a better life and higher status through education like them. A doctorate from an elite university was no doubt a good choice to ensure that I would achieve similar success. (Chang, middle-class, female)

I applied for the PhD twice. I was admitted by an ordinary doctoral school the first time. But my parents both graduated from prestigious universities. They thought that I started my life from a higher point than them and should do my PhD at a better

university, so I applied again to get my chance to study here. (Dou, middle-class, female)

I found that Bourdieu's concept of cultural capital could be used to explain the phenomenon mentioned above. Different volumes of cultural capital families possess strongly impact parents' expectations regarding their children's PhD access. Middle-class parents, especially those with successful educational experiences, were with high levels of cultural capital. This advantaged cultural capital was translated into high expectations regarding PhD access and facilitated students' capability to aspire through different methods. The first one was to provide role models, for example:

My father has a PhD degree from a top university. He and my mother always told me that they also wished me to do a PhD in an elite university and encouraged me that my father had already done it as a powerful example and I could do it as well. (Lang, middle-class, female)

For students like Lang, their parents' successful educational experiences have provided them with examples to follow, which shaped their attitudes towards and expectations of PhD education. Besides providing role models, providing guidance was another way to transmit family cultural capital into high expectations. Parents' successful educational experiences enable them to instruct their children in planning their future life and become the person they want to become:

My parents have university degrees, so they have the means and skills to help me better plan my life. They expected me to do a PhD when I was very young, so they were cautious in choosing my schools and majors at each stage. Consequently, I did my undergraduate and master studies in the most prestigious universities. As a result, it was natural for me to develop the aspiration of doing a PhD. (Hua, middle-class, female)

Importantly, whether through providing role models or guidance, the intergenerational transmission of cultural capital described above occurred naturally. Parents' expectations only affected their children rather than forcing them. Consequently, middle-class students tended to describe their development of aspiration as independently:

In the end, it was my decision. Nobody made my mind up for me. (Bai, middle-class, female)

My father did mention that if I need any help, just ask. However, I don't think I asked him for help. I was pretty independent, and my father was not particularly involved, although I knew that he was right there whenever I wanted. (Jin, middle-class, male)

Compared with middle-class parents who had unbreakable faith and high expectations regarding their children's PhD access, working-class parents' attitudes were more complex and uncertain. The interview data showed that working-class parents were always conflicted regarding their offspring's PhD access. Influenced by family tradition or personal experiences, they knew the significance of education:

The family members of my grandparents' generation were all well educated traditional intellectuals. However, my family declined in my father's era for various reasons, and my parents became peasants. Luckily, the family tradition of valuing knowledge and education has survived. Education has always been a crucial thing in my parents' minds. (Jiang, working-class, male)

My parents are peasant workers. They left home to work in the big city when I was young. They suffered a lot because of the lack of education and knowledge, so they always told me that I should learn their lessons and study hard to change my life. (Miao, working-class, female)

However, around half of working-class participants mentioned their parents were sceptical about the value and necessity of PhD due to their lack of relevant experience:

While acknowledging the importance of education, my parents had a relatively negative attitude towards the PhD. A large part of the reason was that they had no relevant experience themselves. They thought that undergraduate or master degrees were far more than enough and did not understand what spending an extra few years for a doctoral degree meant. They strongly advised me to work first and see before making a decision. (Miao, working-class, female)

Both my parents are primary school graduates. They had no idea what university was like, let alone the PhD. They through that even though education was important, I had already spent enough time on it. I should try to find a job rather than continue to study. (Sun, working-class, male)

The example above of Miao and Sun provides an insight into how inferior cultural capital negatively impacted working-class parents' attitudes regarding their children's PhD access. As a result, the PhD application processes for working-class students were struggling and wobbly. Only those with a strong mind and independent thinking could succeed:

As my parents weren't very supportive, I didn't discuss much with them about this. I knew for sure that the PhD was what I wanted to do, so I made my own decisions independently. (Sun, working-class, male)

It is worth mentioning that a majority of those working-class participants pointed out that such negative attitudes from their parents only occurred when they applied for the PhD. They did not experience the same thing when making their undergraduate or master's applications:

They were only sceptical when I applied for my PhD, and before that, they had been very supportive of my study. Maybe they thought I had stayed in school for enough time and shouldn't go on. (Miao, working-class, female)

My parents were very supportive when I applied for undergraduate and master studies, but they felt it was unnecessary for me to do a PhD. (Lu, working-class, male)

For another half of working-class participants whose parents did not doubt the meaning of the PhD, they still did not feel that they were highly expected. It was more a case of such students informing their parents about their PhD application than trying to 'meet parents' expectations' or 'fulfil parents' wishes'. Their parents were neither opposed nor supportive and tended to leave it to them to make decisions:

> I don't think my PhD application has much to do with my parents' expectations. Because they didn't go to university, they knew very little about PhD. They just let me make my own decisions. (Tao, working-class, male)

> My parents had very little influence. They knew nothing about PhD. So, everything was on my own. (Kong, working-class, male)

We could see from the quotations that those students felt their parents' expectations did not affect them, and they also felt that they retained freedom regarding PhD-related aspirations (like their middle-class counterparts but for a different reason), although I later found that this perceived freedom was set within a range of limitations.

6.2.2 Family economic condition

As demonstrated by the results of interview data analysis, doctoral students' family economic condition was significantly associated with their development of the capability to aspire. Compared with working-class students with low family incomes, middle-class students were more likely to evolve PhD-related aspirations. Advantaged family economic capital provided them access to supports they might not otherwise have and thought beyond basic material needs for other spiritual pursuits. Pang (middle-class female) explained why she wanted to do a PhD during the interview. Her parents were successful entrepreneurs, and after getting her master's degree, she worked at one of her family's companies:

I like fresh and challenging things. But my life at that time was effortless and comfortable. There was no pressure as well as any sense of achievement. I felt that I couldn't get any spiritual satisfaction from that kind of life, so I wanted to do a PhD.

Some other middle-class participants also expressed similar things:

I hoped that PhD study could make me more spiritually rich. I always believe that spiritual pursuits are far more crucial than material pursuits, as the joy of wealth could only be temporary while spiritual satisfactions were eternal. (Feng, middle-class, male)

I wanted to do something meaningful other than earning a living, and doing a PhD seemed to be such a thing. (Su, middle-class, male)

In comparison, working-class students suffered a lot from economic constraints, limiting their development of the capability to aspire. It was discussed in **Chapter 1.3.3** that the elite doctoral schools provide sufficient grants and scholarships for PhD students, which could cover their tuition fees and basic living expenses. However, the interview data indicated that working-class students' family economic conditions still negatively impacted their development of PhD-related aspirations. Lu (working-class, male) explained in the interview why with excellent academic grades and achievements and the support of his schoolteachers, he was still hesitant to apply for a doctorate:

Although the doctoral school provides sufficient financial support, it is only during the doctoral study. My problem was with the cost of the doctoral application. I needed to pay various fees, such as application and materials fees. More importantly, I needed to go to other cities to participate in the written test and interview, which required transportation, accommodation and other expenses. All these together were a lot of money for my family.

Lu's friend finally lent a helping hand:

In the end, it was a friend of mine who lent me some money to pay for the application. I then worked the whole summer after my master's graduation and gave the money back to him.

Similarly, many other working-class students also described how the costs during the application had constrained their development of PhD-related aspirations. They were all potential and talented for doing the PhD, for example, with 'high GPA', 'outstanding academic performance' and 'numerous influential publications'. However, given their low family economic capital, they had perceived the PhD application as mediated by costs and were struggling to give it a try:

Although the cost during the PhD study was not too worrying, the expenses during the application process was a big problem for me. (Fang, working-class, female)

I had no money and was embarrassed to ask my parents for help with my PhD application. It was not easy for them to make money, and they didn't have much savings. I felt that I had already brought too much burden to them due to my undergraduate and master studies. It should be time for me to repay them. (Wei, working-class, male)

Those students either sought financial help from friends or classmates, like Lu or compromised to make the second-best choices, for example, applying for the local doctoral schools to cut costs or working first for a few years to save some money:

My financial condition was limited, so even though my favourite supervisor was not here, I still chose to apply to my master university because it could save application expenses such as transportation and accommodation fees. (Wei, working-class, male)

Likewise, Yan (working-class, male), who was invited for an interview by another doctoral school, which was far from the university he had attended for the master's study, passed up the invitation due to a similar reason:

I didn't want to ask my parents for money, which meant I had to pay for the application fee, transportation, and accommodation by myself. I was busy with my master studies and felt overwhelmed at that time. So I ended up choosing to apply to doctoral schools in the same city.

Jiang (working-class, male) took another path, he worked for two years to save some money before making his PhD application:

I didn't have enough money to support my PhD application, so I chose to work as a financial analyst after my master graduation. I had some savings after two years of work and found that a PhD was still what I wanted to do, so I gave up my job and continued my doctorate.

Students who could be interview participants were lucky enough to find someone to help them or were able to choose the second-best options. Many similarly gifted working-class students were defeated by the exigencies of their economic circumstances and eventually failed to generate PhD aspirations.

In addition, economic distress also made working-class parents wary and pessimistic about their children's PhD applications. Lacking economic capital and relative experiences, those parents wondered whether their children should take a risk and invest more time in PhD study, especially in the reality that it was easy for them to find a job after obtaining a master's degree:

I did have some excellent job opportunities at the time and could get a decent income. My parents did not support me to continue to study under such circumstances. They didn't think it was necessary. (Tao, working-class, male)

My parents thought that the ultimate goal of learning was a good job and a high quality of life. I had to admit that having a master degree in economics meant that it was already effortless for me to find a job, so they didn't quite understand why I wanted to spend a few more years to do a PhD. (Han, working-class, female)

The primary expectation of many working-class parents for their children was to find a stable job and earn a decent income; other foci, which the middle-class participants constantly mentioned, like contributing to human development and getting spiritual satisfaction, took second place. Moreover, for some students from extremely low-income families, work could make it possible for them to support their family, and pursuing a doctoral degree meant that they lose such opportunities:

> While I didn't need to ask my parents for money during my PhD study, I could not support them. My younger sibling was still studying these years. Therefore, my parents' burden was heavy. If I work, I could significantly reduce their pressure. (Han, working-class, female)

Han's worry and self-blame, 'I could not support them' was particularly poignant, suggesting heavy family financial responsibilities she had to consider. Similar concerns were not there in the middle-class participants' narratives. Likewise, Tao (working-class, male) also presented a notable case, as his negotiation of the irresponsible, selfish feelings exemplified the tensions between doing a PhD and contributing towards family expenses: 'I was struggling. I was not young. It should be time to make my parents' lives better through my efforts. But if I chose to do a PhD, I could only take care of myself.' We could see from Han and Tao's words that their PhD aspiration formations were contingent on their family contexts in which they were emotionally and financially connected.

However, if we take a closer look at what happened to middle-class participants, we could find different stories. It was discussed in the previous section that middle-class parents usually had high expectations regarding their children's PhD access. In this section, I further noticed that those parents' high expectations had been built up based on their privileged economic capital. Instead of waiting for their children's support, middle-class parents could support themselves as well as save extra money to invest in their children's

PhD education. Consequently, middle-class students tended to feel unproblematic and confident towards the cost related to their PhD:

My parents were very keen on my PhD study. They had even saved some money as funds for it. So I had no financial pressure and could apply for PhD with confidence. (Bai, middle-class, female)

Both my parents have stable jobs and sufficient income and don't count on my financial help. Therefore, I could apply for my PhD without any worries. (Peng, middle-class, male)

6.2.3 Sense of future

This study found that PhD aspiration, as an unconventional aspiration, was closely related to students' sense of future. Many participants mentioned that they chose to do a PhD because of the academic career and specific lifestyle it could bring:

I wanted to work in academia. I liked the way of life here. I think it is relatively steady and simple, which makes me feel relaxed. (Li, working-class, female)

Doing a PhD means that I could have more free time and less pressure and do challenging and innovative things. I thought this was the life I wanted. (Qian, middle-class, male)

Even though some senior students mentioned that they might have other jobs in the economic field, they still admitted that their initial aspirations for the PhD applications were to work in academia, but some subsequent experiences changed their minds. Xie, a fourth-year PhD student, explained: 'I wanted to work in academia when I made my application, but my PhD experience was so hard and tortuous that I am exhausted physically and mentally now. My enthusiasm is gone.' Similarly, another fourth-year PhD student, Xu, underlined: 'Now I gradually realised that my original idea was too naive. Although works in universities are good, the competition is extremely fierce. Even if I have

a doctoral degree, there is only a small probability of taking up a career in it.' Cao (working-class, female) also pointed out: 'Although I still love academia, I had to give up the idea of working in it because it requires extraordinary achievements and powerful guanxi, which is not something that a person like me could reach.'

Overall, it seemed that PhD aspirations were often associated with applicants' interests in academic works, which were featured with 'steady', 'free time', 'challenging and interesting tasks', 'simple relationship' and 'less pressure'. Nevertheless, when asked if a PhD means more income, almost every participant provided a negative answer:

> For economics students, a master degree is enough to find a high-paying job, and the income after working for a few years is much higher than PhD graduates. So it is not wise to choose to do a PhD for the sake of earning more money. (Qian, middle-class, male)

> Most people choose to do a PhD because they want a specific lifestyle rather than making more money. If a person wants to make money, he should work and gain experience instead of doing research. Especially in economics, a PhD does not mean higher income. (Shen, working-class, female)

However, students with different social class backgrounds seemed to have diverse attitudes towards the fact that a PhD was linked to academic work and a particular lifestyle and could not contribute too much to their future income. For working-class students, doing the PhD meant being educated outside of their own class and pursuing the future that they felt undesirable and were unlikely to be assimilated. It seemed that they were struggling with a habitus divided against themselves:

> Doing a PhD doesn't seem to be a common choice for people around me, and I was worried about whether I could fit in and enjoy the life that the PhD would bring. (Shen, working-class, female)

When I returned to my hometown during the master's summer vacation, I deeply felt that I had no common pursuit or language with my former friends. Doing a doctorate could only make this phenomenon more serious. I had a feeling of being detached from the environment in which I was born and raised. (Sun, working-class, male)

From Shen, Sun and Yan's narratives, it could be seen that social class remained a crucial element of their identity and sense of future. Doing a PhD involves living a life different from the rest of their family and most of their peers. Therefore, it seemed that working-class students were hesitating between pursuing the future brought by the PhD and holding on to the cohesive selves that retain an anchor in their previous life and experiences. Although the lifestyle relevant to PhD was what they liked, those students' working-class past and disadvantaged familial habitus made their development of PhD aspiration prohibitive.

In contrast, referring to the lifestyle and future related to the PhD education, Lang, a working-class female student, pointed out: 'My father works at the university and has a PhD degree, so I am familiar with academia. This fact was the main reason I chose to apply for a PhD. I thought I belonged here, and in this doctoral school, I feel rooted.' Likewise, Qin (working-class, male) also mentioned: 'Many of my family members and friends have higher education and even PhD experiences, so the academic world is not remote and unfamiliar to me, and I could easily fit into it.' Instead of negotiating tensions between staying in the working-class comfort zone and making efforts to fit in another new world, middle-class students' PhD aspirations were backed up with familial habitus that generated a sense of familiarity and belonging. Consequently, they paid more attention to the potential that doctoral education could contribute to maintaining and surpassing their current identity and lifestyle:

I had no worries. Many of my classmates and friends had chosen to do the PhD, so everything related to it was familiar to me. My parents had always told me not to have

too many concerns. Earning money is not everything about a qualified life. It's also essential to do something meaningful, contribute to the world and be respected. (Peng, middle-class, male)

I was determined when I made my application. If I could not be accepted by a domestic doctoral school, I would try overseas. Both my parents were undergraduates, and they always hoped that I could get superior education and live a life with more quality and meaning than theirs. (Su, middle-class, male)

There were traces in the above narratives that the pursuit of qualified life and the reproduction of current social status were foremost for the middle-class participants. It was discussed in **Chapter 1.1** that China is a transitional society. All middle classes are newcomers with precarious positions and concerns about the social status of their next generation. As a result, they paid more attention to the cultural and social privilege that the PhD degree could bring, which shaped a key feature of their middle-class familial habitus:

It can be said that education changed the fate of my parents, giving them their current social status and quality of life. So they expected me to go their way and considered acquiring a PhD degree from an elite doctoral school as the gateway to privileged resources and high-status social position. (Hua, middle-class, female)

My parents were from rural areas, and they earned the life they live now by studying hard on their own. They were the first generation to reach their current social status, so they were not secure. They had always expected me to receive the highest education, which in their words, could guarantee my future status to a certain extent. Other benefits, such as financial benefits related to the PhD degree, took second place. (Lang, middle-class, male)

6.2.4 Expression of aspiration

During the interview, many participants, particularly female participants, agreed that aspirations could be reinforced by sharing them with others:

> If you speak out your thoughts and aspirations, people around you can supervise and encourage you so that occasional slack will not lead to abandonment. (Wang, working-class, female)

> I feel that if I speak my thoughts out, it is easier to stick with them, and I can better ask for help when things get tough. (Chen, middle-class, female)

> It is highly beneficial to share aspirations with others. First, the process of sharing is also a process of strengthening one's own beliefs. In my experience, it is difficult for a person to follow through on something without seeking outside supervision. Secondly, I believe only by sharing my thoughts can I have the opportunity to hear others' opinions and change in time when I am doing something wrong. For example, I consulted many people before applying to my current doctoral school, which I now found an appropriate choice. If I didn't share with them my PhD aspiration, I would not have had the opportunity to obtain their suggestions. (Bai, middle-class, female)

However, the data of this study revealed that male students were less likely to express their aspirations than their female counterparts. This fact put them in a relatively disadvantaged position. As for why male students rarely expressed their PhD aspirations, it seemed to have something to do with Chinese people's image of men. In Chinese culture, men are often expected to be poised and always keep their word. So few of them were willing to share their aspiration before getting things done because it may risk damaging their social image and decreasing their credit. For example, Qin (middle-class, male) indicated during the interview that he was reluctant to express his PhD aspiration to people around him. As for his reason for doing so, he told me: 'I didn't think it was necessary to say too much before passing the application because it would be okay if I

succeeded. But if I failed, others would only think I was a person whose words were suspect and whose credit was low.' Like Qin, another male participant, Sun, also mentioned his unwillingness to express PhD aspirations before being admitted by his current doctoral school: 'Every time someone asked me what I'd been up to, I answered vaguely. I didn't want too many people to know that I was preparing for the PhD application, at least not until I succeeded.' The reason Sun gave for his reluctance was similar to Qin: 'I was unsure I could get it, so I didn't want to tell others. Telling too many people before it was done would help nothing but add stress to me and put me at risk of losing my credit.' Some other participants also expressed similar ideas:

> I have been taught since childhood that I should be a man who walks the talk. I believe the best way to maintain my credibility is to make careful promises and not to tell others my plan until there is sufficient certainty. (Qian, middle-class, male)

> Chinese tradition is like this. Men must be responsible and committed. Sharing aspirations with too many people can be considered naive. (Jiang, working-class, male)

In contrast, the female interviews rarely mentioned similar constraints imposed by traditional Chinese culture and gender identities. Instead, most female participants argued that they could share their aspirations with others freely without worrying about negative consequences. For instance, Lang (middle-class, female) admitted that she had shared her decision to apply for the PhD with 'many close friends and relatives'. When asked if she was worried about failing her application, Lang replied: 'Isn't it normal to fail? They all have a good relationship with me, so they won't laugh at me for failing. They will comfort me instead.' Another female participant, Li, also highlighted: 'I don't think failure is something shameful. People who truly care about me will offer unlimited support and trust and won't change their attitudes towards me because of my failures.'

Additionally, this study found that Chinese women seemed better at or better used to expressing themselves than men. Many male participants claimed they did not share their thoughts and aspirations with others because they did not know how to tell them or because the way they communicated with others did not allow them to do so. For instance, Qin (middle-class, male) mentioned: 'My parents have always embraced the principle that results are more important than the processes. As a result, I'm used to telling others the results directly without mentioning any details. Sometimes even if I want to share some of my inner thoughts with others, I don't know how to express them.' Tao (working-class, male) also stressed: 'I've rarely shared emotions, feelings or thoughts with my parents or friends because I don't think that's what a man should do. Men should always talk less and work more.' Likewise, Qian (middle-class, male) underscored: 'I feel like I'm inherently not good at expressing myself, and so are most of the men around me. If I want to do something, I won't go around telling people my plan. I think it's more practical to take action directly.'

As for female students, expressing their PhD aspirations seemed an easy and natural thing to do. Miao (working-class, female) stated: 'During that period, most of my time and energy was devoted to the PhD application, so it was natural to bring it up when I chatted with others.' Another female participant, Bai, mentioned: 'I have a strong desire to share, and I am very fortunate to have a lot of good friends and careful family members with whom I can share whatever I want, from big decisions to tiny wishes. PhD aspiration is definitely the thing I told others. I felt it was a fantastic idea and couldn't wait to share it the first time it emerged in my mind.' Likewise, Pang (middle-class, female) said: 'Why should you hide it if you have an idea, especially a good idea like applying for a PhD? At least for me, it is much easier and happier to share them than to hide.'

6.2.5 School supports

The interview data showed evidence that many participants' PhD aspirations were developed under the support of the schools, which could be depicted as 'institutional habitus' drawing on Bourdieu's social reproduction theory and 'conversion factors' on Sen's CA. Some students mentioned that their school teachers had guided and encouraged them towards making PhD applications:

> I think that teachers sometimes know students better than others. One of my middle school teachers thought I was a good thinker and had the talent to do a doctorate. He always encouraged me to try, which greatly facilitated my success. (Su, middle-class, male)

> I didn't know what I wanted and could do after my master's graduation. One of my teachers suggested that I had been doing well academically and could consider applying for a PhD. (Shen, working-class, female)

Apart from teachers' guidance and encouragement, many students also mentioned that their experiences in prestigious schools were also advantageous for developing PhD aspirations. The first reason was that elite education could contribute to students' capacity to negotiate their lives reflexively. Miao, a working-class female student, mentioned: 'When I was young, doctoral education seemed distant to me. However, as I entered one of the top universities in China and acquired more and more information and knowledge, I started to understand that there were other possibilities in my life. I gradually began to develop the idea of pursuing a PhD.' Another working-class student, Tao, also explained: 'The most important thing that studying at a prestigious university has brought me was thinking independently and making decisions about my future. There seemed to be many possibilities in life, and I had more ability and confidence to choose the one I liked.' We could see that experience in the outstanding universities had transformed Miao's and Tao's

ways of thinking and planning the future, which laid the foundation stone for their access to elite doctoral schools.

In addition, prestigious schools could also provide adequate career guidance, which many participants identified as crucial support for developing their PhD aspirations:

No matter what career aspirations students have, they could seek help at the school's career centre. Take the academic career I was interested in as an example: the career centre often invited some alumni who worked in academia to talk about their own experiences, which enabled me to understand it deeper. (Chang, middle-class, female)

At first, I was hesitant to pursue my PhD aspiration. Therefore, I turned to my tutor for help. He analysed my personality and situation and gave me some valuable information and suggestions, which helped me firm my mind. (Yan, working-class, male)

The interview data revealed mainly two channels for Chinese students to seek career-related information and advice: career centre and personal tutor. The former was often used to locate general information, while the latter could provide more targeted advice that was better tailored to their personal qualities:

Compared with the career centre staff, the tutors accompany students throughout the learning process and know them better, so their suggestions are more personalised and practical. (Han, working-class, female)

I consulted both the teacher at the career centre and my tutor. In comparison, the tutor knew me better and provided more personalised advice. The teacher at the career centre was more knowledgeable and gave me much professional help. (Xie, middle-class, male)

All the above-discussed factors together shaped universities' institutional habitus. This study found that there were diverse effects from attending different types of universities due to their disparate institutional habitus. The following comments made by two

222

participants with similar social class backgrounds revealed the elite university-ordinary university divide. Yan, a working-class male student who participated in one of the top three universities for undergraduate and master studies, mentioned: 'Everything the school had offered me made me feel that my doctoral dream was not far. I just made a typical choice'. In contrast, Chu, another working-class male participant who used to study at an ordinary university, claimed that: 'The help the school could provide was minimal, and I could merely count on some other avenues.' We could see from the statements that the two types of universities were supporting similar kinds of students differently. Under such starkly opposed circumstances, their possibilities to develop PhD aspirations varied significantly.

The different capacities that different schools have to provide support to students' development of the capability to aspire could be understood together with another fact: it is more likely for middle-class students to participate in prestigious universities for undergraduate study and then master study, which finally benefited their access to elite doctoral schools. Yang, a male supervisor, indicated: 'This phenomenon is like a chain reaction. Middle-class students have a higher probability of going to a prestigious university for undergraduate study and thus obtaining good resources. These resources further improve their possibility of entering a selective graduate school, gaining advantages, and finally entering an elite doctoral school.' Another supervisor, Yu, further mentioned: 'Students with advantaged family backgrounds have higher possibilities to enter prestigious schools and develop senses of proximity under the support of these schools. It is much more likely for such students to establish PhD aspirations.'

Students' statements reinforced the facts mentioned by supervisors above. Chu (working-class, male) indicated: 'It is challenging for people with family backgrounds like me to aspire to do the PhD because it is difficult for us to get into elite universities for undergraduate or master studies where we could get sufficient support.' Correspondingly,

Fang (working-class, female) argued: 'Entering a prestigious university for undergraduate or master studies contributes to developing doctoral aspirations, and the crux of the problem is here. It is hard for us to get into such kinds of universities.'

Whilst in this section, I deliberately foregrounded the impacts of school supports on students' development of PhD aspirations, during the data analysis process, it was recognised that the PhD students were located within a matrix of influences. The influence of school worked simultaneously with other influences such as family and friends and could not be fully understood without comprehending its connections with others:

> Many factors affected me at that time, not only the school and teachers but also family and friends. The decision to pursue a PhD resulted from consideration of these factors together. (Cao, working-class, female)

> PhD was a choice with many factors acting together. Sometimes, it is hard to tell one of them alone. (Kong, working-class, male)

But even so, most students still prefer to describe their development of PhD aspiration as an independent, individualised process. Xie (middle-class, male) mentioned: 'Although people around me had given their opinions, I, myself, finally made the decision. Others' ideas only served as a reference. It was what I wanted to do that finally mattered.' Dou (middle-class, female) also expressed: 'I was old enough to make my independent judgment at that time. I would listen to the voices of all parties, but the most important thing was always what my inner heart told me.' Xie and Dou's statements were offered to underline that Chinese students still felt in control of their PhD choices amid various influences.

Going back to the different sources of influence, I noticed that school support's relationships with others varied among students. Family and friends' impacts were likely to reinforce the school supports we had discussed before for middle-class participants:

The people's opinions were pretty consistent: they all encouraged me to apply for a doctoral degree and provide assistance as much as possible. (Hua, middle-class, female)

Everything went smooth. When I talked to the people around me about my willingness to apply for a PhD, they were happy and supportive. (Qian, middle-class, male)

All the quotations above portrayed the different sources of influences as supportive and accordant. Furthermore, in many cases, middle-class participants expressed that the impacts of school were below and after the direct family impact on their development of PhD aspirations:

Before discussing this issue with my supervisor, I had already decided to apply for a PhD. The supervisor's role was only to strengthen my resolve. (Jin, middle-class, male)

This decision was made very early, and the school mainly provided some specific help, such as choosing the doctoral schools and preparing for the application. (Ge, middle-class, female)

In contrast, the school supports were more likely to be in tension or competition with the influences of family and friends for working-class participants. Han's (working-class, female) description illustrated the school-family (institutional habitus-familial habitus) conflict: 'At that time, my feeling was divided. On the one hand, I felt that the doctorate was not far away when I was at school, and many teachers supported and encouraged me. Nevertheless, on the other hand, when I came home and stayed with my parents, I began to doubt whether I was too fanciful and should make a more practical choice. I was jumping back and forth between these two feelings. I didn't want to go home or talk with my parents for an extended period. We had a bad relationship.' Sun's (working-class, male) words hinted at another type of conflict — school-friends conflict: 'It was struggling. I felt effortless to communicate with my classmates or schoolteachers about my PhD

application. But when I discussed it with my friends, they always couldn't get a clue or didn't take my words seriously. In the end, I just bypassed them.' We could get an impression of the individualised, emotionally intense processes from these statements. Inevitably, extra efforts were made by these working-class students to cope with the tensions between school and other influencers, which made their development of PhD aspirations conflictual and problematic:

Although I ended up doing what I wanted to do, the process was difficult and painful.

(Han, working-class, female)

6.2.6 Sense of certainty

The qualitative data indicated that students' development of PhD aspirations was related not only to the above-discussed factors, including capital and habitus, but also to their dispositions, attitudes and feelings towards the field of doctoral education they were about to negotiate, which in other words, their self-confidence and sense of certainty.

During the interview, many middle-class participants took their development of PhD aspiration for granted and referred to it as something inherited from parents and occurred naturally. For example, Chen's (middle-class, female) parents had higher education experiences. Her younger brother was also at one of the top universities in the USA for undergraduate study. Her father is a manager in a state-owned enterprise, and her mother is a government official. She described her development of PhD aspiration: 'My parents told me from a young age that I should have higher achievements than them academically, so automatically I wanted to do a PhD. The idea just came naturally.'

A more obvious example was provided by Lang (middle-class, female), for whom the elite doctoral school access even did not need to be articulated: 'I heard from the people around me since I was a child that my parents were both graduated from famous universities, and I should also enter the most elite university for highest-level study. So, in

my opinion, I should obtain a PhD degree. This thing goes without saying.' I saw such arguments over and over again in the middle-class transcripts. We could conclude that middle-class students whose parents were with successful higher education history seemed to feel a sense of entitlement and certainty to the sphere of doctoral education. They unconsciously self-viewed as PhD field insiders and believed that: 'We should and could be people better than our parents.' (Lang, middle-class, female).

In addition, as most middle-class participants had grown up in an environment in which people around them had succeeded in some aspects, they took it for granted that efforts would win rewards:

> My parents repeatedly told me that as long as I wanted to do something, I could do it. The crux of the question is whether I put enough effort into it. (Su, middle-class, male)
>
> Anything I want to do can be done with enough effort and dedication. This fact is beyond question. (Pang, middle-class, female)

Consequently, with advanced capital and habitus (often unnoticed or underestimated by the beneficiary), such belief in the effort-reward relation was constantly verified, making middle-class students feel full of confidence and thus winning at the starting line in the face of challenges.

In contrast, working-class participants tended to view the PhD application as a challenge in their lives instead of taking it for granted. Miao (working-class, female) underlined: 'I believe people need to get out of their comfort zone to win a better life. Applying for the PhD was such an effort.' Likewise, Kong (working-class, male) mentioned: 'I enjoy the feeling of challenging myself. After trying the application, I found that it was not as difficult as I thought.' As a result, they often emphasised their feelings of anxiety and uncertainty when talking about their development of PhD aspirations:

As the first person in the village to be admitted to the university, I was grateful for all I had. As for the doctorate, it was like a distant dream for me. (Jiang, working-class, male)

The PhD seemed so far from my life that I didn't feel it was real until long after my application was successful. (Li, working-class, female)

The doctoral education was like a gift of surprise for me or the most beautiful accident in my life. (Chu, working-class, male)

We could see that the working-class students used the words such as 'dream', 'surprise' and 'accident' to describe their PhD access, illustrating that they were unconfident and self-excluded during the processes. The objective limits were transformed into practical anticipations of limits, making the already challenging situation even more demanding.

Moreover, when it came to their success, many working-class participants considered themselves lucky instead of emphasising their ability and strength. For instance, Han, a working-class female participant, mentioned: 'I think luck contributed to my success.' Also, Wei (working-class, male) said: 'There were many people better than me. I was just the lucky one.' These remarks stood in stark contrast to middle-class students' rhetoric of 'nothing is impossible through hard work' (Ge, middle-class, female). Working-class students considered themselves lucky because they had achieved something that they thought was not theirs:

Step by step from the countryside to the most elite doctoral school, in a sense, this is indeed a giant leap. (Wei, working-class, male)

I come from an impoverished area. Obtaining the opportunity to learn is not easy for us. Therefore, I am grateful for what I now have. (Li, working-class, female)

It seemed to me that the PhD was for students with no financial burden and good educational resources. People like me needed more effort and even luck to be successful. (Lu, working-class, male)

228

These quotations exhibited that working-class students often viewed themselves as atypical concerning elite doctoral school access. It seemed that there was a specific social order inscribed in their minds, allowing them to judge what was available or appropriate for them. They accepted social stratification and were self-excluded from elite doctoral school access. Under such circumstances, even if they were channelled towards the elite doctoral schools based on factors such as academic performance and research ability, their possibilities to succeed were relatively low due to their negative attitudes and lack of confidence.

6.2.7 Persistence and perseverance

The interview data of this study implied that some PhD applicants could successfully develop PhD aspirations not because they did not face obstacles and barriers but because they were persistent and perseverant:

> Difficulties were inevitable, but persistence would always pay off. (Lu, working-class, male)

> Persistence is a crucial contributor to the success of many of my students. Over the years, I have constantly met applicants who faced opposition or unfavourable factors when applying. Still, they could beat them one by one and persist until the final success. (Yun, male, supervisor)

It was widely agreed that persistence and perseverance were the most effective weapons, especially when dealing with hardships we had discussed before, like family protests, incomprehension and senses of uncertainty. Han's experience provided an example of fighting against family protests. Her parents disapproved of her application for the PhD as they hoped that she could work after master's graduation to subsidise her family and pay for her younger sibling's education:

It was so hard to get my parents' support. They insisted that obtaining a PhD degree was unnecessary for me. They even argued that it was a waste of time. (Han, working-class, female)

As for how did she dealt with this tricky situation, Han described:

I could understand why my parents thought that, but I supposed it was my own life and I should be its owner. I couldn't stop other people's voices of disapproval, but what truly mattered was discovering my innermost willingness and being determined to do what I wanted to do. (Han, working-class, female)

Incomprehension was another barrier that might restrict students' development of PhD aspirations. It may come from friends, classmates or other people around. This study found persistence and perseverance particularly significant when others' words or attitudes were in tension with potential PhD aspirations. During the interview, Pang described how she handled her husband's incomprehension when she wanted to quit her job and go back to school:

I still remember his shock and incomprehension when I told my husband that I wanted to quit my job and do a PhD, but I tried to make him know that I was highly determined and there was no room for discussion, which I thought was critical. Later, he just accepted this fact and even helped with my application. (Pang, middle-class, female)

Another example was given by Chu, a working-class male student who had attended an ordinary university for undergraduate and master's study. Before his application, he was short of confidence and full of fear: 'I had always known that I was not the type of applicant supervisors would like. I didn't have a glamorous academic background or any resources such as guanxi, so the feeling of uncertainty was inevitable. But I like basketball and was strongly encouraged by my favourite player Kobe and the Memba Mentality. I didn't have the word 'give up' in my dictionary.' Unwavering belief forged Chu's success in the

disadvantaged position. He further described: 'My application was like a marathon, and stamina was the key to winning.'

After noting the importance of persistence and persistence, I further found that whether students were able to stick to developing PhD aspirations was affected by some factors. The first one was their previous experience. It seemed that students would evaluate their learning aptitude and capacity based on previous educational success or failure. The results of such evaluation had a profound impact on their future choice and determination in the face of challenges. The most mentioned previous experience was the College Entrance Examination (CEE), a significant turning point in almost all Chinese students' lives:

> I got second place in my high school in the College Entrance Examination. I gained a sense of accomplishment from this experience and became confident about my learning ability. I believed that whatever learning goals I wanted to achieve, I could do it. (Kong, working-class, male)

> I performed well in the College Entrance Examination and became the first one in my family to attend an elite university. This experience made me believe that I had a talent for learning. (Sun, working-class, male)

Apart from the success of the CEE, some participants mentioned that they became more persistent because they were provided with opportunities to accomplish something, which was a significant role of university courses and projects. Especially for students in ordinary universities, after having experienced the CEE failures, they were severely in need of opportunities to experience academic success:

> I used to be in an experimental project initiated by the famous educator Dingding Wang, during which we were encouraged to do research by ourselves. This experience provided me with opportunities to experience academic success. To finish reading some paper, to successfully write an essay. Things like these proved that I

was academically talented and should pursue my PhD dream. (Fang, working-class, female)

Besides previous experience, students' views on success or failure also made a difference. Those identified as holding an optimistic view were more likely to be persistent in their PhD aspirations. I summarised three dimensions to evaluate interviewees' attitudes towards success and failure: how broadly success or failure was projected, the time span of success or failure and the cause of success or failure.

In terms of the first dimension, how broadly success or failure was projected, optimistic students considered success to be pervasive and failure to be specific. They attributed success to traits and abilities they would always possess. For instance, Sun (working-class, male) mentioned, 'If people always fail in doing something. It means it is not the right choice for them. Things related to learning and research always run smoothly for me. I thought I was the right person to do a PhD.' In contrast, optimistic students tended to latch on to local rather than global explanations when discussing failure:

My failure to attend a prestigious university for undergraduate and master's studies negatively impacted me. However, I considered it an accident and was even more determined to prove myself. (Chu, working-class, male)

As for the second dimension: the time span of success or failure, I found that optimistic participants always believed that the failures were temporary and successes were their final destination. Talking about her first application, Dou mentioned:

Although the experience of my first year's application was unpleasant, I believed that such failure was temporary. I was talented and willing to make efforts. There should be no reason that I couldn't succeed. (Dou, middle-class, female)

The last dimension was the cause of success or failure. Optimistic students were able to perceive their contribution to the success. More importantly, they could hold themselves

accountable when they were to blame. Most of them considered the failures as learning opportunities and were willing to make changes and try again:

I saw failures as opportunities to realise self-improvements rather than the end of the journey. My experience from ordinary university to elite doctoral school proved that it is never too late to make changes. There will always be possibilities as long as we don't give up. (Peng, middle-class, male)

6.3 Capability to be respected

I identified four factors relevant to developing the capability to be respected (see **Figure 6.2** below): household duties, supervisors' preferences, social values and expectations and female empowerment. They all impact the conversion of resources into capability.

Figure 6.2. Factors related to the development of capability to be respected
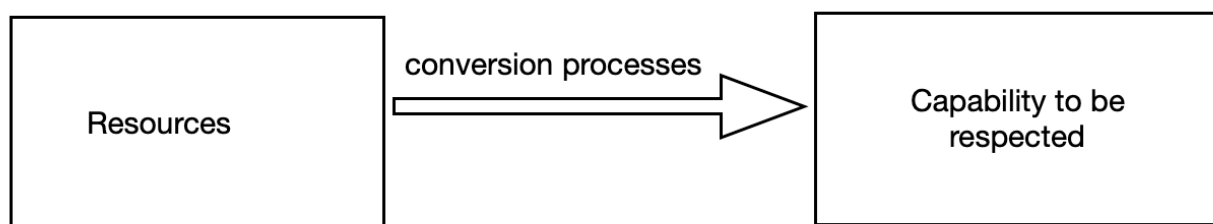
Conversion of resource into capability:
Household duties
Supervisors' preferences
Social values and expectations
Female empowerment

6.3.1 Household duties

During the interview, a significant number of married participants admitted that there was an uneven division of household duties within their families. Women were more likely to devote themselves to fulfilling their gender role of supporting family and parenting children and were responsible for all or most of the domestic work:

233

Traditionally, in Chinese families, the husbands are in charge of the external affairs while the wives are responsible for the household duties. My family followed this convention. (Kong, working-class, male)

I did a lot more housework than my husband, from doing laundry and cooking to taking care of our children. (Shen, working-class, female)

Meanwhile, I found that this phenomenon had nothing to do with women's income, occupational position or educational background. It was the tradition and patriarchal ideology of what was a virtuous wife and responsible mother that mattered:

It is not a matter of income or position. It's a Chinese tradition. (Cao, working-class, female)

I felt like I had no choice, that was what society expected of a married woman in China, and it didn't matter if I had a high-income or bright future. (Lang, middle-class, female)

In addition, I had witnessed no social class differences regarding female PhD applicants' participation in domestic labour. Pang (middle-class, female) explained: 'The pattern of Chinese families has always been like this, which has nothing to do with the family's wealth or social status.' There were only some exceptions provided by participants from FDU, especially those from local Shanghai families. For example, Chen (middle-class, female) mentioned: 'My husband and I are both from Shanghai, and the tradition here is that men do housework, which is relatively rare in China.' Peng (middle-class, male) also explained: 'The division of labour in my family is a bit special. I am responsible for the housework, and my wife is responsible for taking care of our son. Of course, when I was preparing for my PhD application, my wife was in charge of everything. I am very grateful to her.' Again, we could see that women became the primary care provider for the family in the domestic setting, mainly due to the Chinese tradition. Although some Shanghai families might be slightly different, this unfair custom existed in most regions. Even though

234

Chinese society has undergone dramatic changes in recent years, women's status did not improve:

> Chinese society has made significant progress in many aspects, but family relations are still highly unequal. I don't think the current situation is much different from what it was in our parents' time. (Pang, middle-class, female)

The domestic roles took up a great deal of time and energy for married women, making it hard for them to focus wholeheartedly on their doctoral applications, which considerably hindered their success. For working women, the situation was even worse. It was difficult for them to be free from the heavy double burden and do what they wanted. Chang didn't quit her job until one month before the start of her PhD study. She described: 'My schedule was incredibly intensive. In addition to taking care of the family, I had a job. These things together had taken my breath away. You could never imagine how hard it was to prepare for the application under such circumstances, so I spent two years on it.'

Even for unemployed female applicants, heavy domestic burdens also affect their PhD application as the time available to devote to the preparation determines their success:

> Although there was no working pressure, I got endless things to deal with at home. Setting my mind on the study was a considerable challenge. (Lang, middle-class, female)

> Housework took up almost all of my time. There was only a little time in the evening every day for me to prepare for the PhD application. (Cao, working-class, female)

In addition to the lack of time, female applicants also suffered from the lack of choice since they were responsible for taking care of their families and children. When it came to school selection, Lang (middle-class, female) explained: 'I only considered local doctoral schools, which would enable me to go back home constantly and help look after my daughter. It takes two hours from my current school to home now, and I am satisfied that I can spend every weekend with my family.' In comparison, also with a daughter, Feng (middle-class,

male) mentioned: 'I chose the best one from the doctoral schools I could apply for, not limited to any region. My current school is far away from home. It is my wife who takes care of my family and daughter. We just meet occasionally.'

Moreover, I found that the household duties women took on were not only physically but also emotionally demanding. In the following part, to better explain this fact, I will divide household duties into two broad categories, housework and child-caring. In terms of housework, which refers to things like cooking, cleaning and laundry, it causes stress mainly because it is mandatory, repetitive, and continuous. Chang (middle-class, female) explained: 'Occasionally doing housework can be a pleasure, but if it is a task that repeats every day, it becomes burdensome and monotonous. Imagine if you have to work several hours after a full working day, you will learn how physically and mentally exhausting I felt.'

Likewise, Wu (working-class, female) underlined: 'I don't think my husband understood the fatigue of housework. He merely helped me with some easy jobs occasionally, totally different from doing them every day.'

As for child-caring, tiredness was what participants with children mostly complained about during the interview:

> Taking care of my daughter was like a nightmare. My nerves were tense almost every second. (Lang, middle-class, female)

> Child-caring was the most tiring work I had ever done. My youngest son was just over two years old when I was preparing for my PhD application. It was indeed a tough time. (Wang, working-class, female)

However, it was found that emotional demand was a more severe challenge faced by female applicants with children. There was one scene during the interview that impressed me enormously. When asked about the issue of child-raising, a participant suddenly burst into tears. It was only later that I learned what had happened: the mother, on the one hand,

missed her little son too much while, on the other hand, felt guilty for not being able to accompany him. Similar emotions could be felt in almost every mother's words:

I brought up my elder daughter, but my younger daughter did not. I can feel that the latter is more distant from me. I feel sad and blame myself. If I could go back to the beginning point, I would not make the same choice. (Cao, working-class, female)

I regret that I missed my daughter's growth for my own dream. I may not be a qualified mother. (Feng, middle-class, female)

While similar thoughts and emotions were never seen in male respondents' transcripts. The pursuits of their PhD dreams were taken for granted:

My son has his mother by his side. I also company him every weekend. That is far more than enough. (Kong, working-class, male)

I am responsible for providing her with a better life, and her mother has been with her a lot. (Qin, middle-class, male)

6.3.2 Supervisors' preferences

It was noticed that Chinese supervisors held stereotypical beliefs towards the students or potential applicants based on their gender. The most typical one was that women were more emotional and sentimental and lacked teamwork spirit. Therefore, during the interview, some supervisors expressed their worries towards female applicants' abilities to build close and healthy relationships with other people around:

Female students are relatively emotional and pay more attention to details. Thus, they are more likely to have conflicts with other classmates or their supervisors, which may interfere with study and research progress. (Zhang, male, supervisor)

Female students are more likely to be distracted by all kinds of chores, and they are also prone to problems in cooperation, which may be due to their born nature. (Yu, female, supervisor)

Another gender stereotype was related to logical thinking skills. Supervisors believed that male students outperform female students regarding analytical tasks, which prioritise logical thinking. For instance, one of the supervisors, Zheng, highlighted: 'Women are naturally better at perceiving than analysing things and doing research, especially economic research, requires rigorous logic.' Another supervisor, Zhou, also emphasised: 'I don't know if this is my bias or delusion, but in general, the analytical skills of the male students I teach tend to be stronger than the female students.'

Similar to logical thinking skills, supervisors also held gender stereotypes towards students' mathematical skills, which were highly stressed during recruitments. They believed that male students are more sensitive to numbers than female students and are more suitable for arithmetic-related work:

> Economic research in recent years has emphasised mathematical analysis, which is a trend in our discipline, and I think male students are better at things like that. (Zhu, female, supervisor)

> Just as women are naturally good at verbal expression, men tend to be more numerically sensitive. I have a son and a daughter myself, and I feel this deeply. (Zhang, male, supervisor)

Moreover, from the supervisors' points of view, I reaffirmed that women were the primary providers of housework within Chinese families. In addition, there were stereotypes held by supervisors based on this hard truth, making the challenging situation even worse for female applicants:

> Women are more caring and thoughtful, but they are also more likely to be distracted by other things, such as housework or child-raising. However, we require students to be entirely devoted and have a peaceful mind during the four or five years' study. Based on my personal experience, considerable female students perform poorly in this aspect. (Zhu, female, supervisor)

Women take more family responsibilities in China, so it is hard for married female students to concentrate on academic research fully. Especially for students with children, relevant affairs would inevitably interfere with their PhD studies. (Yang, male, supervisor)

In addition, some supervisors mentioned that they have additional concerns about the safety of female students. They argued that women are more vulnerable, and therefore their supervisors need to pay extra attention to their security and take more responsibility. On this point, Yun (male, supervisor) provided an example: 'Doctoral students are often required to go to other cities for conferences or data collection; such things are quite normal. However, as supervisors, we need to make special efforts to ensure female students' safety. A few days ago, I assigned one of my female doctoral students to an academic conference in Guangzhou. But because I was concerned about her safety, I later arranged for another student to go with her just before departure. Logically speaking, there was no need for the other student to go, but I still chose to do so even if I needed to pay extra for my decision.' Yun further explained: 'Once bad things happen to a student, the supervisor will be the first to be held accountable, so we always pay extreme attention to students' safety, particularly female students, as they are more vulnerable.' Another supervisor, Zhou, also made similar remarks:

Once an accident happens to the student, the supervisors will inevitably have to take responsibility and pay the price even if they did not do anything wrong. There are countless precedents around us, so we could only be as cautious as possible. (Zhou, female, supervisor)

Besides, many supervisors considered that women are not as physically strong as men and unsuitable for long-term, high-intensity work:

Scientific research is laborious. Students' physical strength is as crucial as their brainpower. Men have an advantage in this regard. (Zhou, female, supervisor)

239

I'm always careful when assigning jobs to female students, considering whether they could handle the workload. However, there is no need to worry too much about their physical exhaustion for male students. (Zhao, female, supervisor)

For the reasons discussed above, some supervisors admitted that they prefer male applicants when recruiting PhD students:

If two applicants have similar qualifications in all respects, I would prefer the male one. (Zhang, male, supervisor)

I must admit that I am more cautious when admitting female students. I pay extra attention to their family and emotional conditions. (Zhao, female, supervisor)

In general, male students have less to worry about than female students. I have encountered numerous women who did well in their PhD research, but I would still consider more every time I admit female applicants. (Zhu, female, supervisor)

However, after analysing the students' transcripts, I noticed that although they had perceived the supervisors' preferences, they did not agree with them, nor were they affected by them. A male student, Jiang, underlined: 'It is true that many supervisors, especially in our majors, maybe more male-preferred when recruiting PhD students. But I don't think an applicant is qualified or not has anything to do with gender. I know a lot of women who did excellent research.' Another female student, Pang, also mentioned: 'I know the PhD applications are more difficult for women than men, but this is because of the supervisors' gender stereotypes. Supervisors' preferences did not bother me when I made my application. I knew it was a misunderstanding, and I was confident enough.' Another impressive statement was provided by Miao (female, working-class), who told me: 'I have no way to control the thoughts of others. I can only do my best. Of course, if I can, I hope to change the gendered opinions of my supervisor and some other supervisors through my efforts during my PhD study.'

6.3.3 Social values and expectations

I found that female students had a more challenging time getting parental support for doctoral applications. One of the main reasons for this phenomenon was parents' perceptions of gendered marital relationships:

My parents worried that holding a PhD degree would make it harder for me to find a partner because I would be more demanding and have a much smaller range of options. (Bai, middle-class, female)

My parents always stressed that a female's well-being depends mainly on her marriage rather than education or career. Doctoral education was of no practical significance and would discourage some men from marrying me. (Fang, working-class, female)

Ge (middle-class, female) provided a representative example. Ge's parents were government officials, and her mother's position was higher than her father's. When talking about her mother's attitude towards doctoral applications, Ge said: 'My mother was hesitant. On the one hand, she knew that more education would allow me to have a promising career and an independent income, but on the other hand, she was worried about my marriage in the future.' As for what her mother was concerned about, Ge further explained: 'My mother often took herself as an example. She was better than my father regarding education, career and income, but this had caused an imbalance in my father's mind and made their relationship fragile. In my mother's words, women with too much power and success would always cause troubles in Chinese marriage.'

Apart from gendered marital relationships, age was another factor that put women in disadvantaged positions concerning parental support:

It was widely argued that age is a form of competitiveness and capital for women. Chinese men rarely marry someone older than themselves. However, it takes too

241

many years for doctoral students to graduate, leading to trouble for them in marital affairs. (Miao, working-class, female)

My parents even consulted some of their friends whose children were doing a PhD or who knew somebody doing a PhD. They found out that the pressure of doctoral study was high, and I would not have enough time or energy to deal with a relationship or a marriage. But if I consider things like that after graduation, I would be over 30 years old, too old for the marriage market in China. (Dou, middle-class, female)

In addition to the above reasons, patriarchal perspectives held by parents have also donated to the disadvantage of female students:

People in my hometown were extremely old-fashioned and considered that girls were no longer closely related to their family after getting married, so my parents were unwilling to invest too much money in me, especially my education. (Miao, working-class, female)

My family was not wealthy. I had one older brother who needed money to marry and one younger brother in school. My parents tended to spend the limited economic resources on them. (Han, working-class, female)

Patriarchal perspectives did not exclusively affect parents' financial considerations. There were cases during the study that sometimes parents with no financial burdens also hesitate to their daughter's PhD applications. For instance, due to the impact of their own successful educational experiences, Chang's parents had always attached great significance to and supported her education. However, when it was time for Chang to start her PhD application, 'I was surprised that my parents' attitude had changed.' Chang attributed her parents' change to the fact that she was married:

I was married, and my parents felt that I should settle down to take care of the family and raise the children. Doing a doctorate for a few more years may pose a hidden threat to my marriage. (Chang, middle-class, female)

Concerning what the hidden threat was, Chang explained:

> They thought that my husband and I might not be able to stay together most of the time during my PhD study, which was the fact. And the most important thing was that if there were any problems with my marriage, I would be the one who lost or hurt more and unacceptable by social culture. So they did not want me to take the risk.

In addition, I noticed that in contemporary China, men's achievements and values were assessed by diversified standards. At the same time, women's role was still evaluated primarily in terms of their marriage and contribution to the family, although they were now also expected to be part of the labour force, as we had discussed before. This fact could be seen from people's attitudes towards female PhDs:

> Numerous people still maintain a substantial prejudice against female PhDs, considering us as a weird group who do not meet the traditional ideology. Some women are unwilling to tell that they have a PhD degree when dating others because that may not be a bonus point. (Miao, working-class, female)

> Many Chinese people associate female PhDs with being aggressive. They assume that women, especially wives, should not pursue their own developments but instead support their husbands' successes. (Pang, middle-class, female)

Such complaints have never been found in the transcripts of male participants. Instead, I witnessed the infinite understanding and tolerance towards men in modern Chinese society:

> My whole family was very supportive. Although the financial situation during PhD may be relatively challenging, wealth is not the ultimate pursuit of life after all. (Peng, middle-class, male)

> The pressure of my parents and wife during my PhD would be pretty heavy, but I am very grateful that they understood me and supported me in pursuing my academic dream. (Kong, working-class, male)

243

Moreover, Chinese parents were far more resistant to their daughters' studying away from home than their sons'. This attitude was also due to the traditional social norms, which required women to stick to the rules and not be too adventurous. Bai and Wu both talked about how hard it was to persuade their parents to do the PhD outside their hometown:

My mother just wanted me to stay in Shenzhen. She didn't care which doctoral school I went to as long as I was by her side. (bai, middle-class, female)

My parents were very traditional. I married a local guy and settled down in my hometown following their expectations. They were very opposed when they learned that I was going to another city for my PhD. They felt that I had ruined the stable life they had planned for me. (Wu, working-class, female)

Geographical constraints or the parent-child conflicts caused by it made the already tricky PhD application for women even more difficult. Their journey of doctoral application was like the process of surviving in the cracks: struggling with limited choices and carrying on amid opposition.

6.3.4 Female empowerment

When it came to overcoming the above-discussed gender inequalities, realising female empowerment and achieving elite doctoral school access, the participants frequently mentioned three keywords: education, economic development and self-awareness. Considerable female participants attributed their empowerment to the privileged education, which increased their self-confidence and changed their ways of thinking:

I think the previous education experience, especially the university experience, made me recognise my inherent potential and the contribution I could make towards changing our society. These recognitions further encouraged me to question dominant gender norms and make efforts to find my worth outside of the family. (Chang, middle-class, female)

Education has broadened my horizons and opened my eyes to other possibilities beyond the traditional social expectations. If it weren't for education, I would never have known that my life was with infinite options and that my PhD access would never become a reality. (Wu, working-class, female)

Besides, education was also argued to improve female students' analytical skills so they knew how to take action to negotiate with people around them and change their disadvantaged situation. During the interview, some female participants described their struggle with parents and husbands to gain support for PhD application or to achieve an equal distribution of household duties:

I spent a lot of time explaining to my parents that they were too narrow-minded, proving that women could also realise their worth in the wider world apart from contributing to their families. (Shen, working-class, female)

I explained my ideas to my husband, and I remember he was inspired and asked me: 'Is there anything I can do to help?' Only by making the husbands understand that their wives can make a difference outside the families we could realise the distributions of the household responsibilities equally. (Chang, middle-class, female)

In addition to this, many participants linked female empowerment with economic development, for which Xie (middle-class, male) presented a detailed explanation: 'Many phenomena in our lives can be explained from an economic point of view, which is what we, economics majors students, do best. The same goes for female empowerment. Our parents' generation valued family and marriage because everyone was impoverished at that time, and only two people being together as a family could they survive. But now China's economy has developed, and the problem of survival has been improved. It does not necessarily require a family as a whole to survive. Therefore, we do not attach significance to marriage and family as much as our parents. Meanwhile, women also have

more opportunities to pursue their values outside the family.' Similar remarks were also constantly brought up by female participants:

> Although my parents were in a hurry to get me married, I am delighted with my current life. I am fully capable of supporting myself and could do something worthwhile. (Ge, middle-class, female)

> Although it may seem strange to many people to leave home for PhD study after getting married, I don't want to be tied down by my family. It was almost impossible in our parents' generation to do things like this, so thanks to the development of society, I have more choices in life. (Chen, middle-class, female)

Furthermore, Xie pointed out that economic development and female empowerment complement each other, constituting a virtuous cycle: 'More women's participation in social activities outside the family has also provided our economic development greater impetus. In recent years, it is not difficult to see the contribution of outstanding women in all aspects of social life, so in general, this is a complementary process.'

The last keyword frequently mentioned was self-awareness. Many female participants expressed similar feelings to Lang's (middle-class, female) argument 'I am myself first and then someone else's daughter, wife or mother.' For instance:

> I think women, especially Chinese women, need more self-awareness to eliminate the various identity labels that society has attached to them and bravely do what they want to do. (Fang, working-class, female)

> As I got older, I learned to listen to my heart and not just rely on other people's expectations to make decisions. I call this the awakening of self-awareness, and it's crucial. (Hua, middle-class, female)

At the same time, many participants pointed out that building self-awareness often comes with costs such as feelings of guilt, insecurity, and personal inadequacy. These costs are inevitable but could be overcome:

Emphasising self and following heart would inevitably lead to negative emotions such as guilt and self-doubt, which is the way to become a stronger self. (Bai, middle-class, female)

Feelings of loneliness and insecurity always accompany the unusual road, but we could also see different scenery on it. (Wang, working-class, female)

6.4 Capability to establish guanxi

I identified four factors relevant to developing the capability to establish guanxi (see **Figure 6.3** below): types of guanxi, which impacts the distribution of resources; embedded resources, university guanxi and social networking, which affect the conversion of resource into capability.

Figure 6.3. Factors related to the development of capability to establish guanxi

Distribution of resource:
Types of guanxi

Conversion of resource into capability:
Embedded resources
University guanxi
Social networking
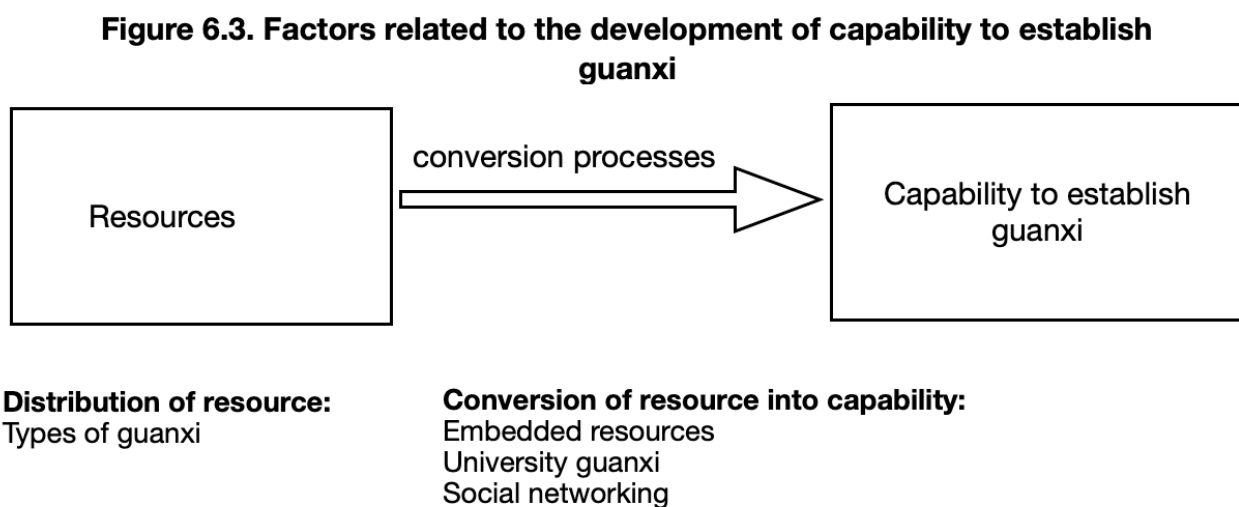
6.4.1 Types of guanxi

Although most of the participants admitted that they had used guanxi in their PhD application processes, this study found that the guanxi they used was quite different. Guanxi utilised by the middle-class participants was often built on strong ties, characterised by a high frequency of interaction and a high degree of emotional attachment:

The person who helped me was my downstairs neighbour. He worked at this university. His son and I were good friends, so I often visited their home. Chinese people say that a distant relative may not be as helpful as a near neighbour. I think it fits my experience. (Xu, middle-class, male)

I remember the person I consulted was a close college classmate of my mother, a well-known economics professor. Although they have chosen different career paths after graduating from college, they have always maintained a close relationship. That auntie was very attentive to my application. She did her best to help me. (Chang, middle-class, female)

Conversely, working-class applicants were more likely to use weak ties-based guanxi. The people that they contacted were with little or no acquaintance. Most participants claimed they 'never met each other and only communicated online (Wei, middle-class, male).' The rest said they had only met the person who helped them 'a few times, each for a short period' (Miao, working-class, female). Furthermore, they were often almost strangers to each other, and in such a situation, it was unlikely for those working-class applicants to acquire sincere and exhaustive help.

Moreover, I noticed that, even with the opportunities to increase the tie strength, working-class applicants faced various constraints that made the actual operation problematic. A typical limitation was economic hardship. The rise of tie strength usually requires more face-to-face meetings and proper emotional connection, which could be costly:

I knew it would be much more effective to chat in person than online, but I was in another city far away and couldn't afford travel expenses. (Miao, working-class, female)

The university I had attended for my master's study was half of China away from here. Travelling between the two cities by train took a few hundred yuan. At that time, I was just a full-time student without any income. I could not afford the costs to meet the

people I know at this university. So even if I knew that visiting them in advance would benefit my PhD application, I did not do that. (Wu, working-class, female)

In addition, some working-class students also faced the problem of time poverty:

At that time, I was preparing for the PhD application, working and taking care of the family simultaneously, so I hardly had any spare time for a face-to-face meeting. (Shen, working-class, female)

I was too busy back then. Work and study took up almost all of my time, and it was challenging for me even to have a deep conversation with that senior classmate. (Kong, working-class, male)

Apart from the distinctions concerning tie strength, this study also found that the connectivity routes between working-class and middle-class applicants differed. Due to the possession of privileged social capital, most middle-class families could establish direct guanxi to facilitate their offspring's PhD applications, which, in other words, meant that they knew their contacts directly without passing through any intermediaries. For example, Chen, whose father is a senior manager and mother is a government official, mentioned: 'My parents have a strong network of relationships due to their work. Especially my mother, who works in the education sector. Therefore, it was easy for them to find someone to help with my PhD application.' Correspondingly, Jin (middle-class, male) highlighted: 'My father is also a supervisor of economics himself. He knew many people involved in this area and even supervisors at this doctoral school.' The most mentioned direct guanxi included close relatives, friends, colleagues, senior classmates and neighbours:

I have a friend who was doing PhD here. We had been in the same primary and high school. Although we did not attend the same university, we still kept close contact. (Bai, middle-class, female)

My uncle works at this university. (Hua, middle-class, female)

I did my undergraduate and master's studies at this university. It was easy to get in contact with some senior classmates for me. (Xie, middle-class, male)

In contrast, participants with working-class family backgrounds emphasised the contribution of indirect guanxi to distant others to their success, such as distant relatives and friends of friends:

All of my family members are farmers in the countryside. They have no chance to know anyone relevant to my PhD application directly. But there seems to be a theory saying that a person can know anyone else in the world through six or fewer intermediaries. This theory makes sense because even my parents, who were far from academia, helped me get in touch with a supervisor at this doctoral school through various connections. (Jiang, working-class, male)

I was the first person in our village to do a PhD. Some fellow villagers now come to me to consult about doctoral applications, but I was not as lucky as them when I applied. I contacted many friends, and finally, a friend of a friend provided me with the information I needed. (Wei, working-class, male)

An essential feature of indirect guanxi was connecting people of different social classes, power, and wealth. This characteristic inevitably led to a low intimacy between the applicant and the contacted person. As a result, it was challenging for working-class students to obtain as much information and help as middle-class students could. Jiang explained: 'Although a supervisor was contacted, too many people were involved in the process. He didn't even know me when I visited him. Although he chatted with me for a while after I mentioned the intermediary, such chats were of little help.' Also, Wei mentioned: 'That friend's friend just provided some basic information about the application. He didn't share too much with me. It was understandable. After all, he didn't even know my friend well. We were too unfamiliar with each other.' Cao also experienced similar things: 'I had contacted a friend of a friend who was doing a PhD in physics in another doctoral

school. He shared some of his experiences with me. I appreciate his kindness, although most of the information he provided was unusable.' We could see from these quotations the low quality of guanxi working-class students were able to get.

6.4.2 Embedded resources

We had discussed earlier that the guanxi operated by working-class applicants was often indirect guanxi with weak ties. Further analysis revealed that such guanxi had one primary function: to provide information. For this point, Li, a working-class female participant, explained: 'Not all application-related information is open and transparent. Some information could not be obtained through the internet or other channels.' There were mainly two types of information related to guanxi mentioned by the working-class participants during the interview, which, as Wang suggested (working-class, female): 'includes enrolment information and exam information.' The most typical enrolment information was enrolment quotas:

> The total number of admissions published on the official websites generally includes students recruited through all methods. Some supervisors may accept mostly (or only) students from successive master-doctoral programs in specific years. In other words, there is a slight (or no) chance of success for other candidates. Therefore, it is vital for the applicants to clearly understand the supervisors' enrolment plan before making their applications. Providing this information is one of guanxi's primary roles. (Chu, working-class, male)

> I can provide an example. I used to be very interested in a doctoral school. In the year I applied, that doctoral school's publicly announced enrolment quota was 35, but its internal successive-master-to-doctoral students might occupy some places. I contacted a friend's friend who used to study there and found out the number was 30, which means the doctoral school only recruited five students from other universities

that year. As a result, I decisively gave up applying for that doctoral school. (Hua, working-class, female)

The most typical exam information that was available and helpful for working-class students was the list of reference books. This fact was also widely recognised by the supervisors. Zhou (female, supervisor) pointed out: 'Each supervisor has their preferred textbook or bibliography. The written test and the interview would be designed based on these materials.' Another supervisor, Zhang, also spotlighted: 'Every school of economics, and even every supervisor, has a fixed set of bibliographies that are habitually used. Almost all questions in the doctoral application process come from these bibliographies.' Meanwhile, the students were also aware of this fact.

I contacted a master's student of my supervisor and asked him what reference books they usually use in class. This effort was later proved to be highly useful since almost all of the questions my supervisor asked me came from those books. (Tao, working-class, male)

They gave me a list of reference books and a sample paper and told me there was no more English listening test that year. Figuring out these in advance saved my time and energy. (Lu, working-class, male)

It is worth mentioning that among the four elite doctoral schools concerned by this research, the CUFE was the only one that provided a reading list for doctoral applications on its official website. So for CUFE students, this kind of information does not need to be obtained through guanxi. As was confirmed by Wu (working-class, female): 'The bibliography given on the official website was accurate. I prepared according to this and applied successfully.'

Correspondingly, middle-class students also employed guanxi for the collection of information. Nevertheless, the discrepancy was that the information available to middle-class students was more tailored and in-depth than those obtainable to their working-class

counterparts. In addition to what was discussed before, middle-class students could also collect other types of information. The most frequently mentioned type was the supervisors' preferences:

My neighbour told me that my supervisor was interested in enrolling two students with computer science backgrounds in the year I applied for the sake of relevant projects. I studied computer science at undergraduate and master's levels, so my success rate was pretty high. (Xu, middle-class, male)

Before starting the application, my friend, also my senior classmate now, shared information about my supervisor's recent research directions. This information was important because many applicants mistakenly focused their application on proving that they were good enough. However, being outstanding was crucial, but fitting in with the supervisor's interests was more vital. (Dou, middle-class, female)

Another type of information constantly referred to by the middle-class participants was information associated with their future developments. Those students' focus was not limited to short-term application success but long-term career development:

I used to hesitate among several supervisors. My mother's college classmates, an economics expert, recommended my current supervisor because his field of study was novel and promising. (Chang, middle-class, female)

There was an interesting suggestion, try to choose middle-aged supervisors instead of senior ones. While senior supervisors tend to be experienced and academically distinguished, they usually pay less attention to their PhD students due to heavy work and lack of energy. More importantly, a younger supervisor could help me with my career even after graduation. (Peng, middle-class, male)

In summary, middle-class students had advantages over working-class students when employing guanxi to acquire information. The variety and depth of information they could access far exceeded their working-class competitors. In addition to obtaining information,

middle-class students could also pass some information through guanxi to impress supervisors or other recruiters. This exclusive benefit further secured their advantages. For example, Su (middle-class, male) mentioned: 'A friend of mine invited me to participate in an academic conference sponsored by my supervisor and took the opportunity to briefly introduce my educational background and academic experiences to him during the interval. Even if I might have just left a rough impression, it provided me with great help during the application process.' Later, when interviewing Su's supervisor Zhu, he mentioned the same thing and confirmed that Su had left some impressions on him. These impressions benefited Su's access: 'I met him for the first time at a conference, and I briefly learned some of his backgrounds. My first impression of this student was pretty good. He was polite, talkative and thoughtful. His performance in the interview later confirmed my first impression, so I accepted him.' Similarly, another supervisor, Yun, also pointed out that: 'After all, there would be a significant number of applicants participating in the retest (interview). If a student could leave an impression on the supervisors before the application, it would be easier to get their attention during the interview and stand out from other competitors.'

Some students also confirmed the significance of sending information to supervisors to leave impressions on them:

> Some applicants may consider submitting the application first, taking a written test, and reaching the supervisor if they have enough scores, but it is too late. I submitted my PhD application in March and contacted my supervisor in October of the previous year. The earlier you act, the easier it will be to prove your determination to your supervisor. (Bai, middle-class, female)

> Doctoral admission is different from master's and undergraduate admissions. It is not only based on grades. Therefore, it is imperative to contact the supervisors in advance and make them feel you are eager to be admitted. Imagine that I am a supervisor

254

myself. I would not choose an applicant who has never contacted me before. Everyone is the same. It is human nature. (Qian, middle-class, male)

Moreover, I noticed that middle-class applicants could obtain another type of resource exclusive to them through guanxi, that was, influence, through which supervisors or admission officers provided enrolment priority as personal favours to their connected applicants. In this way, guanxi (especially direct guanxi with a high level of intimacy and a high frequency of interaction) was mobilised to link the applicants as the favour receiver and their connected supervisors or admission officials as the favour grantor. The existence of guanxi favouritism was confirmed in interviews with supervisors. One of the supervisors, Zhou, mentioned: 'I must admit that some students with specific guanxi have the priority to be enrolled. Guanxi may not be the deciding factor, but they could be pretty influential.' Another supervisor, Zhao, underlined: 'Chinese people value guanxi in everything they do due to culture and social formation. PhD admission is, of course, not an exception.' Furthermore, Zhang (male, supervisor) explained: 'For applicants with similar abilities and backgrounds, there is no doubt that those with guanxi are more likely to be admitted. Sometimes even if some applicants' abilities and backgrounds are relatively weaker, guanxi can also make up for them to a certain extent and lead to application success.'

Although not as confidently aware of guanxi favouritism's existence as supervisors were, some PhD students had a vague sense of it. Jin (middle-class, male), whose father is an economics professor, mentioned: 'Because my father and supervisor knew each other, I wasn't under too much pressure. I knew that I would be admitted if my grades reached the bottom line and my performance was not too bad.' Due to guanxi favouritism, Jin's doctoral admission requirements had become 'bottom line' and 'not too bad', significantly different from other applicants who had no such relationship. In stark contrast to Jin's experience was Lu's (working-class, male) experience: 'When I applied for the first year, I got the first place in the written test, and my interview score was also in the top three, but I still failed. I

later learned that the applicant behind me had guanxi with the supervisor. This fact was probably the only reason I failed.'

The above descriptions indicate that the doctoral admission processes in China were not filled with rational decisions entirely. This phenomenon was inseparable from the current admissions policy. On the one hand, doctoral admissions, especially those through the application assessment system, set up a strict written test. Only students who had met the score threshold had the opportunity to continue with their applications. There was not too much chance for guanxi favouritism to make a difference at this step. On the other hand, the interview process, which followed the written test, provided guanxi favouritism room to play its role, as its standards were not unified and explicit. These facts were reflected in the interviews:

> Of course, the premise of the priority I mentioned is that the students pass the written test. The written test is relatively objective and fair. Except that some people may be able to provide relevant information, guanxi does not play a significant role in it. (Zhou, female, supervisor)

> I had a pleasant conversation with my supervisor before making my application. She told me that I did not need to worry too much. As long as my written test scores were high enough, she would undoubtedly admit me. (Xu, middle-class, male)

Undoubtedly, supervisors and other admission officials had to consider formal criteria such as students' educational backgrounds, publications, and grade-point average (GPA) for PhD admission. However, they also had a certain level of discretional power to make decisions between students with similar performances or attributes, creating the chance for favouritism to affect elite doctoral school access in China. Some participants emphasised the relationship between the prevalence of guanxi favouritism and Chinese sociocultural contexts. As Zhu (female supervisor) suggested, 'The utilisation of guanxi to exchange scarce resources is inseparable from Chinese culture. Because of this fact,

guanxi will never disappear, no matter how the policy changes. We can compare this phenomenon to repertories: the form of guanxi may be changed and adjusted, but there are always new forms that are legitimised.' Moreover, Xu (middle-class, male) stressed: 'A law that cannot be ignored is that the more uncertain the policy environment is, the greater the room for guanxi to play its role. China's doctoral admissions policy is changing recently, which gives guanxi's presence more chance.'

6.4.3 University guanxi

In a study conducted in the Netherlands, Rupp and De Lange (1989) put forward the concept of educational status to measure schools' abilities to prepare their students for the next stage of education. Applying Rupp and De Lange's concept to this study, I found that the education status of universities in China (the spectrum of the doctoral school hierarchy for which the universities prepare their undergraduate or master's students) was closely related to the guanxi they could provide:

> There is also guanxi between universities, weak or strong, direct or indirect, like guanxi between people. This guanxi is a significant value of the universities and can provide substantial help when students apply for the next level of education or try to find a job. (Zhao, female, supervisor)

> The university you went to before matters a lot because the supervisor cares about the applicant's background. More importantly, elite universities can provide some guanxi to help with their students' applications. (Su, middle-class, male)

In this study, a large amount of the participant's master's and doctoral studies (undergraduate and doctoral studies for those who attended elite doctoral schools through the bachelor-straight-to-doctor program) were at the same school, for whom they did not need additional university guanxi. However, as for other participants, university guanxi was significant. Elite universities, whose students were mainly from middle-class families, had

strong supportive cultures and corresponding guanxi with other elite universities and doctoral schools affiliated with those universities. Firstly, such university guanxi could promote the flow and interaction of information, making students' elite doctoral school access real and realisable. Yu (female, supervisor) pointed out: 'There are numerous cooperations among the famous universities, accompanied by the exchange of information. Students within them can obtain a large amount of first-hand and content-rich information related to the doctoral application.' Likewise, Su (middle-class, male) mentioned: 'My undergraduate school has longstanding and familiar guanxi with a great number of elite doctoral schools, including the one I'm currently attending. A lot of information that is difficult to obtain through other means, such as the doctoral schools' programs and progress, and the preferences of supervisors, could be obtained with the help of the university guanxi. Such guanxi is also a critical factor that allows me to stand out in the fierce competition of the bachelor-straight-to-doctor program.'

Secondly, guanxi between elite universities also facilitates connections, in particular informal connections between teachers who work within them, making it possible for them to recommend students to each other. Such intimate relationships were made explicit by Qian, a middle-class student who did his master's study at a top university in China: 'My master supervisor and doctoral supervisor had a close personal relationship, and they often recommend students to each other. I was admitted partly due to my master's supervisor's advocacy.' Likewise, Qian (middle-class, male) also mentioned: 'My master's teacher was a kind and warmhearted man. After learning that I wanted to apply for a PhD, he introduced me to his close friend, who was my current supervisor. He gave a detailed account of my performance during my master's study, which attracted my supervisor and promoted the success of my application.'

In addition to offering practical assistance such as information, another thing that university guanxi could provide, which is relatively abstract, is reputation. Zheng's (male, supervisor)

explanation for this point was clear: 'Privileged schools mean privileged reputation, which indicates that their credit is relatively high, and the value of their students is easier to be recognised by other schools.' Zhang later added: 'I have to admit that school reputation impacts me when choosing PhD students. If two candidates have the same level of abilities, I would unconsciously prefer the one with elite university background.' Likewise, Xie (middle-class, male) mentioned: 'Supervisors all care about the students' background; to be more explicit, they care about students' previous school's reputation. Students who graduate from non-elite universities need extra effort to prove themselves.'

Moreover, working-class students who had attended elite universities (although these are relatively rare cases) also emphasised that they benefited from university guanxi during the doctoral application process:

> I have benefited enormously from my previous school, which has a good reputation and close guanxi with many doctoral schools. (Miao, working-class, female)

> The school I went to for my master's study was very supportive, especially its staff, from teachers to career counsellors. They even used their personal guanxi to help with my application. (Sun, working-class, male)

On the stark contrary, while students in elite universities enjoy the convenience of the guanxi explained above, students in other universities have to depend on themselves to fill the vacancy and establish productive social links. Consequently, they tend to describe their access to elite doctoral schools as helplessly, struggling, and exceptional:

> Looking back now, I was pretty helpless and struggling at the time since the help I could obtain from the school was too limited. (Fang, working-class, female)

> Most of my master's classmates chose to work or attend a relatively common university for a doctorate after graduation. My case is highly exceptional. (Chu, working-class, male)

259

6.4.4 Social networking

During the interview, I noticed that some students, mainly from working-class families but to a lesser extent from middle-class families, were not confined to their families and personally owned guanxi. They were capable of breaking the structural boundaries and reaching out to the people beyond their close-knit circles, reversing the disadvantaged situations to a certain degree:

> Nothing in the world is unachievable for the one who sets his mind on it. I was desperate for an opportunity to do the PhD. So even if I didn't know any relevant people, I could always find ways to get in touch with some of them. (Chu, working-class, male)

> No one in my family works in academia, and I didn't know anyone as well. Then I thought I couldn't always go on like this. I need to change the situation. So I tried every possible way to reach out to all the people who could help, and finally, it worked out. (Miao, working-class, female)

The key to such beneficial transformations is social networking skills. As was highlighted by Lu (working-class, male): 'It is still possible to build some valuable guanxi as long as you try hard; this is where social networking skills come into play.' Shen (working-class, female): 'I think social networking skills are crucial for establishing guanxi during the PhD application processes, but also for many other things in life.' Also, Peng (middle-class, male): 'Social networking skills can be said to be an essential survival skill for modern people who want some type of success, and this fact is amply reflected in my own experience of guanxi-building for PhD application.'

The most mentioned scenes of playing social networking skills are different kinds of extracurricular activities. Including sports activities such as basketball and football:

> My hobby is basketball. I played it every weekend with students from my university and other universities nearby when I was a master's student. Through basketball, I made a

lot friends. They were very kind and helped me tremendously with my PhD application. (Lu, working-class, male)

I was a member of the school football team, and several of my teammates were doctoral students then. We often played games together and had close relationships with each other. Thus, they went out of their way to help me with my application. (Wei, working-class, male)

Art activities like music:

I like singing and have participated in multiple competitions at my previous university. The most unexpected bonus from these experiences was some like-minded friends willing to provide me with generous help whenever needed. (Han, working-class, female)

And some other activities, for instance, debate:

I formed a debate club with some senior classmates, and two went on to do their PhD. They helped me a lot by sharing their successful experiences with me. (Sun, male, working-class)

However, such extracurricular activities require early-stage family inputs or following-up school support. In addition, they often cost substantial time and money. Hence, being able to attend them was relatively rare for working-class students who came from low-income families and could only participate in regular universities. Cao (female, working-class) explains: 'I was not able to cultivate my hobbies since I was a child, and the support provided by later universities was also limited. Even if there is something I like to do and want to learn, I cannot afford its huge financial and time cost. So I hardly participated in any extracurricular activities.'

For working-class students who could enter elite universities, the situation was not too much better:

Basketball was the only extracurricular activity I participated. This hobby can be cultivated first because I am naturally muscular and talented, and secondly, this sport does not cost much money. In general, the opportunities for me to participate in extracurricular activities were less than that of my classmates from wealthy families. (Lu, male, working-class)

There were many extracurricular activities at my university, but I was good at almost nothing apart from studying. I could only silently envy the versatile classmates and then bury myself in coursework. (Shen, female, working-class)

The significance of other factors was highlighted when students did not have opportunities to attend extracurricular activities. The first was the awareness of the possibilities to establish guanxi with others, which I found could be cultivated by parents or schools:

I took a class provided by my undergraduate university talking about social networking and was impacted by the idea that everyone's social circle has enormous potential. The best suggestion from that class was that I could dig out much more valuable guanxi if not limited to people I know directly. (Jiang, male, working-class)

My father does some small business and often needs to establish guanxi with various people at work. In many cases, he set up guanxi with people who were almost strangers, so I know the importance of social networking from him. (Feng, male, middle-class)

Moreover, I also noticed that students' attitude towards face strongly affects their social networking skills. Here, face, similar to guanxi, is a concept unique to China. It guides every Chinese's social behaviour and guanxi establishment. As Xie (male, middle-class) stressed: 'To understand Chinese social interaction, I think it is crucial to understand the Chinese people's emphasis on the concept of face. The Chinese are sensitive to preserving both the face of self and others.' Zhou (female, supervisor) also mentioned: 'Chinese tend to link whatever they do with the concept of face. They always confer face to

others and try to avoid losing their own face'. In addition, Shen (working-class, female) said: 'Compared to western countries, the impact of the face on social interactions is more salient in Chinese society. Every member wants to claim face for himself. My husband's complaints about me mostly come from my failing to give him face.'

This study found that students' attention and sensitivity to face were different, especially their level of acceptance towards losing face. The less a student cares about losing face, the more he or she could get out of the social comfort zone and establish effective guanxi with people who otherwise could not be connected:

> After becoming a PhD student, I found that some applicants were very positive and not afraid of losing face. They will stop people at the target school's library or the doctoral office and ask for their contact information directly. Although there is a high probability of being rejected, once they succeed, they will be able to get first-hand information or other precious help. (Xie, middle-class, male)

> If you want unexpected results or success, you cannot pay too much attention to your face. At the time, I thought the worst outcome would be rejection or multiple rejections. I was not afraid of these; I was more afraid of failing my application. (Kong, working-class, male)

However, in most cases, students did not understand the feasibility of building guanxi and were afraid of losing face. Wu (working-class, female) argued: 'My time and energy were limited; I preferred to invest them into self-improvement than trying to build guanxi with unknown others. On the one hand, I could not guarantee the establishment of guanxi; on the other hand, even if it could be established, the help that such guanxi could provide is limited. In addition, I was afraid of losing face, which, as far as I was concerned, would affect my mood.' As a result, Wu did not even try: 'I had never tried to build or use guanxi. I was admitted to this doctoral school on my own.' Wu's experience reflects how and why some applicants could not escape their disadvantaged situations and help themselves.

6.5 Capability to obtain information

Four factors relevant to the development of the capability to obtain information were recognised (see **Figure 6.4** below): information strategy, primary concerns, information behaviour and rational thinking. Among them, information strategy impacts resource distribution, and others impact resource conversion.

Figure 6.4. Factors related to the development of capability to obtain information

Distribution of resource:
Information strategy

Conversion of resource into capability:
Primary concerns
Information behaviour
Rational thinking
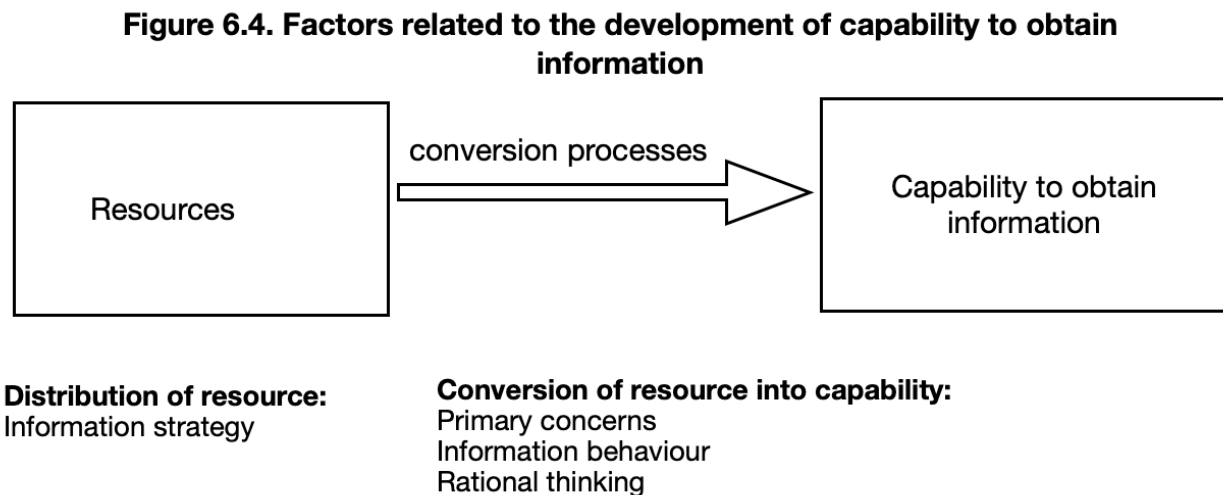
6.5.1 Information strategy

Part of the interview in this study was devoted to asking participants what type of information they had used to aid their doctoral school access. Based on their responses, I divided information strategies into three categories: insider information mainly strategy, converted insider knowledge mainly strategy and outsider information mainly strategy. Here insider information refers to uncodified information that can merely be acquired by academic field insiders, while outsider information refers to publicly disseminated information that anyone can obtain, such as official and online information.

During the research, I found that some middle-class families, due to their close connection with the field of education, could be viewed as insiders who possess a large amount of internal information that other families could never obtain. Such insider knowledge permeated their lives. They did not even need to get it deliberately. Consequently, even if

parents were not directly involved in children's application processes, their subtle long-term influences on children made them face the academic world with profound perception and strong confidence:

PhD has always been a concept I am familiar with because of my parents. It was like a family tradition. I had mapped out the doctoral landscape early and never thought my education would terminate without finishing it. (Jin, middle-class, male)

I was well informed about how to make applications just because my mother worked for the education department. She has her own unique insights on the education system in China and would share them with me through our daily communication. (Chen, middle-class, female)

While privileged middle-class students enjoyed the convenience of the insider knowledge their families possessed, other middle-class students had to face the reality that they were not the luckiest ones and cope with the tension between their desires to get the best and pragmatic appraisals of what was attainable. Their families often did not have insider knowledge, but they had other resources that could be converted into cultural capital, most typically social and economic resources.

As for the conversion of social resources into insider information, Dou (middle-class, female) provided an example. Her parents both had higher education degrees, but after graduation, they chose to work without academia. Dou's father became a government official, and her mother worked in a multinational company. Although not working in the education sector, the fact that Dou's parents had strong social connections made it possible for them to obtain doctoral-related knowledge. Their higher education experiences also allowed their interpretations of such knowledge. 'Many of their friends and colleagues work in academia or have children doing PhDs. They could therefore learn from them and help with my application'. Likewise, Qin's (middle-class, male) parents were also college graduates. After graduation, they joined the army. Although they had limited

contact with people from other fields, they had strong contacts in the army system, within which there were also education departments and affiliated universities. So 'for them, although it may not be very in-depth, a certain degree of understanding of doctoral applications was achievable.' Dou and Qin were two of many examples in the data of how middle-class families made use of the social resources available to them to collect information and develop insights into PhD applications.

Similarly, economic resources could also be converted into insider knowledge. Some middle-class families in this study had relatively high incomes but could not manage their children's PhD access by themselves or establish effective social connections to the sphere of doctoral education. These families preferred to pay for the knowledge or insights that their children needed:

> My parents and most of their friends all work in the business sector. They know little about education, but fortunately, they have always been willing to invest in my study. I failed the first attempt, so I rented an apartment next to the school in this city to prepare for the following year's application. The advantage of doing this was that I could attend some open courses and get in touch with classmates and the supervisor in advance for information. Of course, the cost was huge. I have to thank my parents for their financial support. (Feng, middle-class, male)

> I used to go to the UK for a year of exchange study and worked with a British supervisor on his project. I learned a lot of cutting-edge information from that project. This experience also made me clear about the specific topic I wanted to explore. My current doctoral supervisor was introduced to me by that British supervisor, and the research I am doing now also continued the project. Such cosmopolitan experience is crucial for my application success, and of course, it costs a lot financially. (Pang, middle-class, female)

In the above cases, less distinguished middle-class families operated the converted insider information mainly strategy. I found that among them, there were further distinctions: some families had decoding and sorting skills and were, therefore, more securely positioned within the doctoral education field: 'Although my parents chose to work in another field after graduation, after all, they have relevant experiences, it was not difficult for them to understand what others mean' (Qin, middle-class, male). While other families did not: 'My parents had never attended university, so even though other people share something with them, they could not understand the information well' (Bai, middle-class, female). We could see that the critical factor that led to the difference was the educational experience of the family members.

Regarding web-based and official information, middle-class students' attitudes were primarily negative. Some participants commented, 'it was contentless, informative and just reiterated what I had already known' (Pang, middle-class, female), and 'notwithstanding that some promotional documents, admission policies, and examination methods could be found, detailed information on the PhD programs and supervisors was missing.' (Bai, middle-class, female). Others mentioned: 'it was not so much the official channels; it was the people around me who helped. The role that official information played was limited. It could not provide the most effective and suitable advice' (Qin, middle-class, male). 'The personal experiences of successful senior classmates are much more effective than any information you can get from official channels. It is even more helpful if you get some targeted advice' (Ge, middle-class, female). 'I've got a lot of faith in what other successful applicants say to me in person. I didn't really use the internet or something similar because most information on it was unreliable. I prefer to seek help in real life (Xu, middle-class, male).' Some participants even had difficulty recalling the exact information they had collected from official and website channels as they had 'just made cursory consultations of them' (Xu, middle-class, male).

Undoubtedly, the situation of working-class students was the most challenging. While middle-class students could afford to bypass the outsider official or online information, they were more heavily reliant on them because they had neither insider information by themselves nor other resources that could be converted into it. As a result, these students had to make compromises and employ more pragmatic information strategies, which I conclude, were based mainly on outsider information collected from the official websites:

Basically, I found things out from universities' or doctoral schools' official websites. Although some schools' admissions information was not up to date online, this was undoubtedly the most time- and energy-saving method. (Fang, working-class, female)

The easiest way to get information is to open whichever search engine, type in the name of the doctoral school and open its official website. The most attractive point for me is that every word on it is trustworthy. (Lu, working-class, male)

online forums:

There were some online forums devised specifically for PhD applications, where successful applicants share things like their application experiences, the exam questions they had encountered and interview skills. I find them highly helpful. (Shen, working-class, female)

Some useful information that hadn't come across on the official website was picked up on the online forums. Visiting them gave me a brilliant idea of what PhD applications would be like and how I could be prepared. (Miao, working-class, female)

And school help centres:

I majored in Japanese before. Therefore, my mathematics skills were relatively weak. Based on that fact, the advisors in the school help centre suggested that I could try the Chinese Academy of Sciences, whose mathematics exam was easier. Although I did not take that suggestion in the end because I could not find more detailed information, it was a helpful suggestion. (Shen, working-class, female)

When I was a master's student, a friend worked part-time in the school help centre. I often went there and hence got to know some of the staff. I told them I wanted to turn my major from computer science to economics. They informed me that some projects in the School of Economics were looking for students with coding skills and suggested I could join them. That was helpful because those project experiences greatly benefited my PhD application. (Tao, working-class, male)

Only in some unique cases that working-class students utilise insider information. One of the participants, Lu (working-class, male), provided an example: 'When I applied for the first time, I didn't know anyone who could help me. I just browsed the official websites and online forums for information. So I failed my first attempt.' In this study, I noticed that numerous working-class students like Lu were hindered rather than helped by low-quality outsider information. However, Lu was lucky because he got acquainted with a person who succeeded during his first application and kept in touch with him. Two years after his first attempt, when Lu tried for the second time, that person provided him with immense help. However, Lu's experience was not typical. Most working-class students could acquire uncontextualised outsider information only during their application processes. Under such circumstances, only with unique traits or extra efforts, which will be discussed later, could they stand out in the PhD competitions.

We could see from Lu's example that outsider information tended to be helpless. Resonant with this, middle-class students' complaints about it pervaded the transcripts. Some argued that they were insufficient and inaccurate:

The official website was full of praise and cliches, and there was very little real practical information. Except for some policy documents in the annexe, which might be helpful, the others were outdated nonsense. (Hua, middle-class, female)

I wouldn't say I trust the internet because a lot of information on it is unreliable and misleading. I used to try to find some past exam questions online but found that many were inaccurate and their answers were wrong. (Xie, middle-class, male)

Others worried that they might be too pessimistic:

There were many negative comments online, emphasising the low income, low graduation rate and financial pressure of PhD. I consider them highly biased. Because of these remarks, even talented students would easily give up their application without critical thinking skills and firm willpower. (Ge, middle-class, female)

One of my classmates shared that she once saw some places on the internet saying there are many unspoken rules during the doctoral application process. But after she had experienced the whole process, she found that the truth was far from what she had imagined. The main point is that if she had believed entirely in such negative remarks, she would have lost the opportunity to pursue a PhD without even trying. (Su, middle-class, male)

Moreover, some middle-class participants also complained that the collection of outsider information was time-consuming:

There is too much information online, and it takes a lot of time to find out what you really need. (Qian, middle-class, male)

Sometimes I just wanted to find something particular, but it turned out that I had spent a long time browsing some irrelevant content. (Dou, middle-class, female)

Some supervisors expressed similar opinions towards the limitations of the outsider information:

The official information is no doubt crucial and helpful. Students could figure out basic things like enrolment methods and admission requirements. Nevertheless, these things alone are far from enough. More information needs to be collected from other places. (Zheng, male, supervisor)

> We would only put some general information on the internet. Specific details about the application would have to be learned through other channels. (Yun, male, supervisor)

> Many students prefer to collect information online. I think this is a good choice, but it is important to note that they must carefully distinguish which information is more authentic and credible. (Zhu, female, supervisor)

However, unlike middle-class students and supervisors who tended to describe outsider information as neither sufficient nor detailed, sometimes inaccurate and useless, working-class applicants considered them accessible and helpful:

> Official information was easy to obtain, and most had high credibility. (Jiang, working-class, male)

> Publicly released information was relatively easier to get; although not all of them was accurate, it helped me a lot. (Miao, working-class, female)

As for the reasons for relying on outsider information, the data show that it was time poverty and, more important, lack of resources. As Kong, a working-class male PhD student, pointed out, 'I worked for an internet company while preparing for my PhD application. Work took up almost all of my time. Also, I did not know anyone who was able to provide me with relevant information. Hence, referring to online information was my easiest and most time-saving choice.' Similarly, Wang, a working-class female PhD student, also spelt out that she had juggled academic work and household responsibilities, 'At that time, I had just given birth to my second child, and my first child started kindergarten. I was swamped and could not afford to spend too much time on information acquisition. Given that nobody around me could help, I chose to consult the internet as it was simple and effective.'

6.5.2 Primary concerns

This study found that students of different classes had different priorities at the time of information collection. Even on the same topic, their concerns were quite distinct. Regarding the background information, working-class students' explorations seemed superficial, concentrating on general information about university background. Miao (working-class, female) suggested: 'I merely browsed how this university was and collected some information about its ranking, history, academic precedent and other general background sorts of stuff.' Likewise, Lu (working-class, male) mentioned: 'I just looked at the university and doctoral school rankings and the introduction pages on the official website. I was attracted by this university's tradition, academic distinction, and established history listed online.' Concerning the reasons behind this phenomenon, they stressed, as Shen (working-class, female) made explicit, that 'it was not that we didn't want to learn other types of background information, it was that they were unreachable and far from transparent.'

For working-class students, university ranking was the most straightforward and accessible type of background information to obtain. They repeatedly mentioned it in interviews:

> University rankings influenced my selection because the job market values this point. (Sun, working-class, male)

> I cared about university ranking a lot because it could reflect the comprehensive strength of the university. More importantly, they were easy to be found online. (Wu, working-class, female)

None of the participants mentioned either QS World University Rankings or Times World University Rankings. They seemed to prefer National Discipline Evaluation (NDE) and Shanghai Jiaotong World University Rankings. The main reason students paid particular attention to them was that they were published by Chinese organisations, which

according to Wang (working-class, female), 'could more accurately reflect the situations in China'.

However, university background information merely represented a tiny part of the information dissected by middle-class students. As was suggested by Peng (middle-class, male): 'I conducted a comprehensive analysis, and the university's background was one aspect that I had considered. I didn't mean it was unimportant, but it was just one of the many things that determined my decision.' They also paid attention to other things because they believed: 'The history of Chinese universities is not long, and they all formulate policies in a unified way, so there is not much difference concerning their backgrounds' (Qin, middle-class, male). This study found that what they were concerned more was supervisors' backgrounds:

> I did precisely care more about the supervisor's background. More explicitly, I was keen on the supervisor's expertise and whether it matched my research interest. (Feng, middle-class, male)

> Other stages of higher education are more like general education. The resources the university can provide and the school's atmosphere are vital. However, the doctoral study is more specialised. Most of the time, students just do their own research under the supervisor's guidance. Under such circumstances, the background of the supervisor becomes more important. (Lang, middle-class, female)

> There are some non-exam sections in the doctoral application process. It is essential to understand the background and preferences of the supervisors to stand out in these sections. (Hua, middle-class, female)

Due to the lack of in-depth information, especially those related to the supervisor's background, working-class students were located in disadvantaged positions during the application process. As was explained by some of the supervisors: 'High scores in the written tests are essential, but doctoral admission also emphasises the match between

supervisor and student, which requires applicants to understand the supervisor's research interests and experiences before making their applications' (Yu, female, supervisor). 'For doctoral application, the fit between the supervisor and the student is crucial. It is important to figure out what kind of student the supervisor needs and what kind of student you are' (Zhu, female, supervisor).

Also, even if the application was successful, the degree of match between working-class students and their supervisors seemed low. Consequently, some students said they had unpleasant study experiences: 'There is a gap between what the supervisor asks me to do and what I truly want to do, which makes me very unhappy. I should have done more work before and chosen a supervisor that fits me better.' (Han, working-class, female). 'Our areas of expertise do not fit very well. I need to spend extra time and energy learning what I have never heard before. I feel tremendous pressure' (Lu, working-class, male).' In addition, although this was not the case among the interview participants, some students even had conflicts with their supervisors or were unable to complete their studies. Examples could be found in supervisors' transcripts:

> Some students give up halfway through, which wastes time and energy of their own and the school's resources. Such things can be avoided by more communication with the supervisor in advance. (Zhang, male, supervisor)

> I've been through a few times where a student I once thought highly of turned out to be inappropriate for PhD study and couldn't finish it. Written examinations and interviews do not reflect all the characteristics of a person. In addition to considering whether they could be admitted, students should also evaluate whether the school, supervisor and doctoral program are truly suitable. (Zhao, female, supervisor)

Besides, all four universities involved in this study were located in big cities. Around this fact, students' perceptions varied, leading to discrepancies in their primary concerns. For middle-class students, big cities mean broader horizons and more development chances,

274

while for working-class students, big cities indicate higher economic pressures. As a result, middle-class students pay more attention to the opportunities offered by the cities of their choice:

I care more about what kind of opportunities this city could bring and these sorts of things. Shanghai is the centre of economics and finance in China; this was naturally an unparalleled attraction for students majoring in economics. (Qin, middle-class, male)

I consider information related to the city's potential sensible because higher potential means more development opportunities for me. (Chen, middle-class, female)

Even for some middle-class students who came from small cities, this may mean losing some of their original advantages. They still preferred to choose doctoral schools located in big cities:

The difference is that I could always seek people for help in my hometown, but I have to rely on myself here. However, people always have to step out of their comfort zone for a better life; this is something everyone faces, and I am not an exception. (Bai, middle-class, female)

I couldn't say that my parents didn't provide help anymore, but the things they could do for me were much less than before. But I think no one can live under the protection of their parents forever. I have to grow up and become independent. (Qin, middle-class, male)

While middle-class students carefully selected the most suitable cities for their future developments, working-class students suffered from the difficulty of integration. 'Although I live in this city, I never feel like I belong here. I probably won't choose to settle here in the future because the pressure will be too grand' (Wu, working-class, female). 'Everything is attractive here, but it doesn't belong to people like me. I feel like I am just a visitor' (Sun, working-class, male). Not only that, they had to worry about their financial expenses:

275

Even with scholarships and subsidies, I still have financial concerns. Because in such an international metropolis, expenses would definitely be much higher than in other cities. (Han, working-class, female)

My impression of the city is that everything is expensive and the people around look posh. I have to live cautiously and budget-consciously because there are so many things I can't afford. (Wang, working-class, female)

Despite the discrepancies between students' concerns, information about school location also functioned differently. It involved a process of elimination for middle-class students: 'Location was my primary consideration in choosing which doctoral school to apply for because it impacts my plan for the future' (Bai, middle-class, female). While working-class students mentioned a different chronology, for whom collecting information on school location was related to a process of confirmation: 'The last step is to consider how the city is. Honestly speaking, where the school is located doesn't make much difference to me, as long as I can afford the living expenses' (Miao, working-class, female). They had to balance financial constraints with a limited number of advantages big cities could bring: 'I can enjoy very little of the benefits of big cities, but the economic pressure is indeed higher, so in general, big cities are not that attractive to me' (Sun, working-class, male).

As for the potential value measured when deciding on whether or not to do a PhD and where to do it, most middle-class students expressed it was potential guanxi (alumni network) which is 'necessary for a successful career and life in the future' (Lang, middle-class, female). Bai (middle-class, female) explained: 'Because I wanted to work in academia after graduation, the guanxi that doctoral school could bring was what I cared about the most. I, therefore, consulted a friend who was doing PhD here and learned that the atmosphere in this doctoral school is friendly. There are opportunities to communicate and cooperate with top industry experts. If I wish, I can also go abroad for exchange programs. These things attracted me.' Another participant, Peng (middle-class, male), also

stated: 'I certainly took income into account when I made the decision, but I didn't exclusively do that. I wanted to check out more about the potential social connection I could build here. I believe that in the long run, guanxi is far more crucial than money.' Likewise, Hua (middle-class, female) admitted that she had consulted her uncle about social resources available at her targeted school because 'guanxi is something that will be maintained for the rest of my life.' She got satisfactory answers and then decided to start the application. Hua also stated: 'I hope that with the help of guanxi established during my PhD, I could start my academic career after graduation.'

In contrast, working-class students and their parents cared more about whether a PhD degree could secure them a job, more explicitly, a high-income job in the future. For instance, Wang (working-class, female) mentioned that she used to seek advice from a distant relative she had connected with, whom she thought 'were knowledgable about academia' on the income of different levels of jobs. 'I know it is not a good question, but I have a family to raise. Potential income after graduation is certainly the most important thing to learn about.' Likewise, Lu (working-class, male) also explained: 'As the only doctoral student among the relatives and friends of my family, there was no previous example for my parents to refer to. They held suspicious attitudes toward what doctoral study means. Of course, what they care about most, and what is also the most practical and easiest to measure, is the increase in income it could bring.'

6.5.3 Information behaviour

In this study, I glimpsed evidence of a slight tendency, which cut across social class differences, for female students to be more sensitive and emotional than male students. Therefore, their communications with others focused more on the aspect of emotion than information during the PhD application process. For instance, Pang (middle-class, female) mentioned: 'There are informational and emotional values in social activities, both of which

are important. For me, the latter may be more critical, especially in that special period.' Han (working-class, female) also stated: 'Talking to others helped a lot, not only because of the contents themselves but more because such processes eliminated negative emotions.' Likewise, Miao (working-class, female) underlined: 'I had high social demands during that time. It was not the information that I needed the most, but the emotional support.'

Numerous female participants expressed that they suffered from negative emotions and needed comfort from others during the PhD application process:

I was so anxious, I needed someone to help me out. (Li, working-class, female)

I am the type of person who is susceptible to nervousness, in particular at critical moments in life, such as PhD examinations and interviews. So I needed to talk to others to calm myself down. Information I could obtain through social interaction was no doubt important, but it was more important for me to get emotional support. (Miao, working-class, female)

In contrast, male participants talked extensively about the processes of information exchange. Jin (Middle-class, male) mentioned that he met friends often while preparing for the application: 'We were highly supportive of each other. We frequently share and exchange the information we hold.' Lu (working-class, male) also highlighted: 'Every time any of us were in trouble, others would try their best to help that person.' When asked what kind of help they tended to offer, Lu told me: 'We would help find solutions or provide some relevant information.'

Accordingly, emotional aspects of communications were far less mentioned by male participants. They explained they were not inclined to reveal their emotions and feelings because 'it is quite a personal thing' (Su, middle-class, male) and 'it would bother others, which is unnecessary' (Peng, middle-class, male). A common perspective amongst them was that it's normal for women to share emotions with others, but 'men don't communicate

in the same way' (Tao, working-class, male). 'Women tend to be more sentimental and emotional. Men generally don't have such personalities, so they rarely display their emotions to the outside world' (Feng, middle-class, male). Chu (working-class, male) further explained this neglect of emotional communications and argued that 'Chinese people generally expect men to be tolerant, restrained, and reserved. Otherwise, they would be viewed as lack of masculinity and ostracised by peers.'

As for whom they communicated, it seemed that female students tended to be closer and better connected with their parents than male students. More than half of the female participants stated they would call their parents every few days to share their lives as well as application details and expressed that they enjoy such communications:

I was in constant contact with my parents, who were my most loyal listeners and always gave me help and advice when it was possible. (Dou, middle-class, female)

I shared with my parents every detail of my application. We were like close friends. (Pang, middle-class, female)

Moreover, a large number of female participants further made it explicit that when they mentioned parents, they usually meant their mother. For instance, Dou explained: 'My father was too busy with his work and could not always find time to chat with me. In contrast, my mother was always available for contact.' Miao also stated: 'Although my father also cared about my application, he was too busy. So most of the time, I just shared my application progress with my mother, who then repeated it to my father.' In addition, some female participants admitted that when facing their mothers, they 'had a stronger desire to share' (Shen, working-class, female) and, therefore, 'talked more' (Hua, middle-class, female). This phenomenon is inseparable from the fact that female students' communications concern more aspects of emotion than information.

In comparison, most male participants claimed that they had occasional contact with their parents and discussed merely big decisions with them. Kong (working-class, male)

279

mentioned: 'I contacted my parents about once a month. I only talk to them about important things and rarely go into details.' Likewise, Su (middle-class, male) stated: 'I am an independent person. I choose almost everything by myself. Instead of asking for their suggestions, I generally only inform my parents about my decisions.' As for PhD applications, some of them discussed with their parents only at the moment when they decided to start the application. 'I called them and asked for their opinion before starting my application. After that, I seldom talked to them about my progress' (Lu, working-class, male). Others even did not mention it until their application was successful. 'I told them only after I got the offer. I didn't think it was necessary to communicate with them before that' (Chu, working-class, male).

For male students, communication with parents was more of a scheduled task. Instead, they preferred to talk with friends. Kong (working-class, male) mentioned: 'My parents and I always care about totally different things, so it's hard for us to communicate smoothly. Whereas with my friends, we could easily get each others' points.' Later, Kong further explained: 'For example, they strongly wanted me to stay at CS because it was easier to find a job. I didn't know where they heard about it, but I knew I was more interested in my current major. Instead, I shared my idea with a few friends. They all understood and supported me.' Also, Xu (middle-class, male) commented: 'I found it more effective and enjoyable to communicate with my friends because my parents always insisted on outdated ideas; I didn't have the patience to argue with them all the time.'

6.5.4 Rational thinking

From the above discussions, we can see that in today's era, students can obtain information in diversified ways, and the types of information they can grasp are also wealthy. This phenomenon is undoubtedly welcoming, but it also means that society's

requirements for students' rational thinking have increased. Many participants in this study confirmed this fact:

We are in an era of information explosion. Different kinds of information flood our life. Putting unparalleled trust in them without evaluating their qualities would cause trouble. (Miao, working-class, female)

Although a large amount of information is available to applicants, its quality varies. It takes a certain level of rational thinking to judge what is truly helpful. (Feng, middle-class, male)

I found that rational thinking was critical in some specific situations. The first situation was interpreting background information that was officially provided. Some students pointed out that many official materials about schools and doctoral programs were over-packaged and contentless: 'Everything looked tasteful, emphasising the long history and glorious achievements, which excited the readers' (Li, working-class, female). However, 'merely from these materials, it was hard to tell the difference between the schools and which one suited me better because everyone looked attractive' (Shen, working-class, female). Even worse, 'detailed information about the doctoral programs was hard to find, making it difficult for me to determine which one I should apply for and whether the program I've chosen was a good fit' (Lu, working-class, male). Li further explained how rational thinking helped her overcome the problem mentioned earlier: 'I told myself not to get carried away by glossy descriptions. It is necessary to rationally analyse the pros and cons of the universities and doctoral programs and always try to see the essence of things covered by the beautified words.'

Secondly, besides official background information, the data of this study showed that it also required rational thinking for students to interpret online information. On the one hand, the authenticity and accuracy of some online information were extremely low. Chu (working-class, male) mentioned: 'I used to encounter some so-called past years' exam

papers when I surfed the internet, but later found out that these papers were fake.' Miao (working-class, female) also stated: 'Some study sites recommended materials for PhD applications, but most of these materials were highly inaccurate and outdated. If someone prepared as they suggested exactly, they would fail the application.' On the other hand, some online information is not objective: they tend to exaggerate the negativity of things because it's easier to attract the reader's attention. For example, 'In recent years, a lot of online media have promoted the news that some doctoral graduates could not find a job or their salary was meagre. Such extreme cases were infinitely magnified, causing students who did not know the actual situation to abandon their applications' (Shen, working-class, female). Shen later added: 'It would be a pity if someone wasted their talents because of news like this. However, the ability to filter and judge information is required by our current society. Even if people who do not have these abilities did succeed in their PhD applications, they might become, as the news says, someone who cannot find a job or earn enough money. Thinking about it this way, it doesn't seem so unfortunate.'

Linking the first two situations with what we had discussed in **Section 6.5.1**, we could find that it was particularly significant for working-class students to think about the information at hand rationally because their PhD applications focused mainly on outsider information, particularly official and online information. Such information was often of low quality and, more important, tended to be negative.

In addition, rational thinking was also found to be critical when applying for a PhD from less-privileged universities because it was not the typical case. This point was vividly reflected in Fang's (working-class, female) interview. In the school Fang had previously attended for master's study, 'most students planned to go to work after graduation.' From what she had learned, 'there were very few examples of my senior classmates who had applied for a PhD and succeeded.' Fang naturally wavered about her choice: 'Everyone was busy looking for a job. Our daily chat was also full of this kind of content. I looked out

of place.' Fortunately, Fang insisted on her choice: 'I am happy that I had my own judgment and was not persuaded to quit by the information that few people had succeeded in the doctoral application in my school. People really should have some degree of discernment rather than believing merely in what they have heard from others.'

Also, doing a PhD was an unconventional option for applicants who did not have anyone in the family with higher education experience. These students needed rational thinking to support their success, as Wu (working-class, female) exemplified: 'Because I didn't know anyone who had succeeded, I was extremely unconfident. But then I thought the fact that others didn't do it doesn't mean it's not a wise choice or something unattainable. Why can't I be the first one to have a try at least?' Likewise, Chu (working-class, male) also mentioned: 'I'm glad I was not swayed by the attitudes of the people around me. They thought it was almost impossible and advised me not to be fanciful. However, I still wanted to try.' Such senses of unfamiliarity and uncertainty could only be overcome with the help of rational thinking, which generates belief and confidence.

The four scenarios discussed in this section are just a few of the many scenarios that require rational thinking. Rational thinking penetrates all aspects of the doctoral application process. Especially for disadvantaged students, this ability is the key to making up for their weaknesses, developing their capability to obtain information and concomitantly achieving elite doctoral school access.

6.6 Capability to acquire knowledge and competency

Three factors were found to be related to the development of the capability to acquire knowledge and competency (see **Figure 6.5** below): study habits, school learning atmosphere and self-learning. All of them work through placing an impact on the conversion processes.

Figure 6.5. Factors related to the development of capability to acquire knowledge and competency
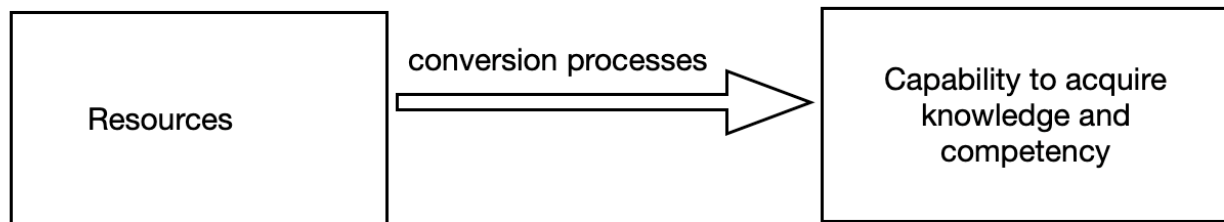
Conversion of resource into capability:
Study habits
School learning atmosphere
Self-learning

6.6.1 Study habits

The current doctoral entry system in China emphasises not only relevant knowledge but also a group of abilities. As was underscored by Su (middle-class, male): 'What is closely related to education is always knowledge. Different types of knowledge were required for different educational purposes. For example, economics and mathematics knowledge are essential for accessing our doctoral school. However, with the reform of the doctoral enrolment system, the requirements for some abilities have been gradually stressed. Their importance is comparable to that of knowledge now.' Su added later: 'Both relevant knowledge and competency could be obtained through proper study, particularly the proper study conducted in school.' Some other participants' remarks also verified this point; for instance, Xie (middle-class, male) mentioned:

> We all know knowledge can be accumulated through school learning. Competence can be developed through similar processes as well.

According to the participants, good study habits established at home were the thing that benefited students' proper study in school and, eventually, their development of the capability to acquire knowledge and competency. As Su (middle-class, male) explained, 'There are many things parents can do for their children, such as teaching them knowledge and investing in their education. But I think the most important thing is to help

them develop good study habits because other things are temporary help; good habits can be beneficial for a lifetime.' When asked what good study habits referred to, the most mentioned things included time management:

When I was a child, my parents kept telling me I needed to finish my homework first, and after that, I could do what I wanted to do. This habit has been retained: I would always arrange things according to their priorities. Last year, I stumbled across a book talking about time management. I then realised that what my parents tried to teach me was something highly important. (Xie, middle-class, male)

My mom used to work with me to create learning schedules and track my progress on them. This action improved my awareness of managing my time. (Peng, middle-class, male)

Goal-setting:

My parents have always taught me to be a person with clear goals or who knows what he wants, which is the premise of all success, including educational success. (Xu, middle-class, male)

Problem-solving:

As the old saying goes, give people fish, and you feed them for a day. Teach them how to fish, and you feed them for a lifetime. What my parents had taught me, which was more important than the answer to particular questions, was how to find answers by myself. (Lang, middle-class, female)

And self-reflection:

My parents always encouraged me to make self-reflection after a period of study, and they also gave me feedback from their perspectives. It is a good habit to do things like that regularly. (Bai, middle-class, female)

One thing that greatly benefited my study was the habit of doing the review and summary. That habit was inherited from my mother. She kept doing similar things until now. (Qin, middle-class, male)

Most middle-class participants mentioned that they had established good study habits during early childhood, and this process occurred unconsciously, which could be viewed as a home-based education site of particular privilege. Pang (middle-class , female) mentioned: 'A lot of habits were formed under the subtle influence of my parents. Everything happened imperceptibly. I truly understood their intentions until a long time later.' Another middle-class participant, Pang, also stressed that: 'I have a son now so that I could understand the painstaking efforts of my parents, which I had never noticed before. Good learning habits for a child are like the foundations of a building. Although the processes of forming these habits will never be easy.'

Conversely, when it came to learning habits, many working-class participants said they 'didn't develop good study habits at a young age and were troubled by this fact later' (Chu, working-class, male). What made things even worse was that most participants claimed that they didn't realise their study habits were terrible until after they had gone to college. As Fang (working-class, female) mentioned: 'What's worse than not having good learning habits is not being able to realise that you don't have good learning habits. In this case, even if you wish to learn something and are willing to make an effort, it's still hard to make your wish come true.' Likewise, Yan (working-class, male) also stated: 'Only when people realise their problems can they correct them in time. However, most people could not realise where their problems related to study habits are until leaving home when it is already a little bit late.'

As for the reasons for not being able to establish good study habits, most working-class participants considered the absence of family pedagogic actions. For instance, Miao (working-class, female) said: 'My parents didn't understand education at all. More

286

importantly, they didn't have the time and energy to invest in my education, let alone help me establish good study habits.' Han (working-class, female) also highlighted: 'My parents didn't have any awareness to educate me or help me develop good study habits. Ensuring I was not frozen and starved was already a huge challenge for them.' Another working-class student, Sun, said: 'My parents' help for my study was marginal. It can't be blamed on them; they were not well-educated and possessed no knowledge.' We could see that working-class parents' lack of education experience, as well as their strong family raising pressure, which occupied most of their time and energy, prohibited them from involving in their children's education and helping them establish good study habits.

In addition, many working-class participants pointed out that their parents believed that education-related matters were the task of the school, not the parents. As Yan (working-class, male) mentioned: 'My parents felt they did all their work by sending me to school. They always asked me to seek help from teachers, not them, when I encountered learning difficulties.' However, without good habits formed in advance, these students cannot adapt well to school learning and win the attention and help of teachers. We could see this fact from Yan's following-up remarks: 'What they didn't know, however, was that I had a hard time adjusting to the pace of school. Because of my poor grades, the teachers didn't like me, and I didn't dare to ask them for help.' Over time, their grades deteriorated, and most of them would gradually be eliminated by the fierce competition.

Moreover, in the previous section, we mentioned that the people who provided emotional support to participants during the PhD application processes were often mothers. In this part, we further found that it was also mothers who helped advantaged students build good study habits. This phenomenon occurs because good study habits that could benefit children for their access to elite doctoral schools need to be established through active day-to-day involvement. Chang (middle-class, female) made this point clear: 'Good study habits are not something that happens overnight. Parents need to be involved in their

children's daily education over the years, which is time-consuming. Taking myself as an example, when I was a child, my mother accompanied and guided me almost every time when I was doing my homework.' Chang then said: 'Although my father was also able to help with my study, his hectic schedule prevented him from doing so. His role was probably to help with my educational planning and make important decisions.'

Numerous examples could prove middle-class mothers' powerful, effective and enduring involvement in their children's education and the fact that their own successful educational and occupational experiences could benefit the cultivation of good study habits for their offspring:

> Whenever I encountered difficulties with my studies, my mother patiently solved them with me. What impressed me most was that she would learn almost everything before me in case I needed her help when I learned those things. (Xie, middle-class, male)

> My mother would accompany me in my daily studies and provide me with appropriate reminders and help when it was necessary. Such everyday embodied behaviour was critical for me to understand and master the proper ways of learning. (Hua, middle-class, female)

In addition, many participants mentioned that their mothers would maintain a close relationship with their schoolteachers to ensure that they kept their learning habits during school. Xie (middle-class, male) explained: 'My mother held the communication with almost all of my schoolteachers, thereby she could ensure that my learning habits cultivated at home could be kept during the time I was at school.' Feng (middle-class, male) also expressed: 'My mom had great relationships with my teachers, so she could know and correct any mistakes I make in time.'

In contrast, most middle-class participants described their fathers' roles as distant. They emphasised that their fathers helped more with designing educational plans and making

important decisions rather than engaging in daily academic activities. We could get an insight into this point from some students' remarks:

My father got off work late every day, and I could only meet him occasionally on weekends. He paid much less attention than my mother to my studies. He was generally only involved in making decisions at some critical moments. (Bai, middle-class, female)

I was born in a traditional patriarchal family. My dad was responsible for making money, and my mom took a servicing role. Regarding my education, my dad's involvement was limited. He merely engaged in making my educational plans and decisions. (Xu, middle-class, male)

6.6.2 School learning atmosphere

In China, as required by admission policy, all students applying for doctoral study need a degree higher than undergraduate, meaning they have separated from their family of origin and lived an independent school life for at least four years. In such cases, the impacts provided by schools were also significant besides the family influence described above. As was mentioned by Zhou (female, supervisor): 'When applying for a doctorate, the applicant is often relatively mature. For them, school, particularly university, is like their second family, with profound significance and long-lasting influence.' Sun's (working-class, male) remark confirmed Zhou's argument: 'I had been away from home for many years by then, and the role of the school in the PhD admissions process was far greater than that of undergraduate admissions.'

Concerning school impact, one thing that was most mentioned and had the subtly, tacitly, yet still far-reaching effect on students' development of the capability to acquire knowledge and competency was the school learning atmosphere:

We prefer applicants from elite universities because these schools have a better learning atmosphere, and their students are often more motivated and enthusiastic about learning. (Yun, male, supervisor)

Apart from factors like teachers, facilities and curriculum, the more profound impact of a school on students lies in its atmosphere. (Pang, middle-class, female)

During the research, many participants who had attended less-privileged universities complained that they were bothered by the school learning atmosphere. For example, Fang (working-class, female) said: 'I did not perform well in the college entrance examination. I was eager to make up for that mistake during my undergraduate study and attend a better university for a master's degree. However, later, I found that the people around me were not very motivated, and everyone paid less attention to their studies.' Fang later added: 'In fact, it is challenging to access elite universities for the following up study in such an environment, I paid double or even triple efforts to achieve what I have now. So if anyone encounters a similar situation to me, I would advise them to retake the college entrance examination instead of choosing a regular school.' Similarly, Peng (middle-class, male) told me: 'You know, the worst thing was people around did not have good attitudes towards learning, or strong expectations for further studies. For example, all my roommates stayed in the dormitory and played games every day. Even though I think I am relatively determined, I was still unavoidably negatively impacted by them.' Similar things were mentioned by some other participants:

In an environment where everyone has nothing to pursue, you will be isolated if you work extremely hard. In addition, we had overcrowded accommodation, a dormitory for eight students. Everyone was in and out, in and out, so studying in such an environment was almost impossible. (Chu, working-class, male)

Even students who were highly enthusiastic at the beginning would slowly give up their pursuits under the destructive influence of the people around them. Unavoidably, the

environment's impact on me was also substantial. Things didn't improve until I moved out to live independently, but that improvement was based on my parents' additional financial and emotional support. (Pang, middle-class, female)

In contrast, when it came to the learning atmosphere of elite universities, almost all the participants' words were full of praise. Chang (middle-class, female) told me with pride: 'The learning atmosphere was awesome. There were four people in my dormitory when I was an undergraduate student. Two were recommended for master's study in the same university, requiring no further assessment. Other top-ranking universities admitted another classmate and me. Because of such a satisfactory result, local newspapers even interviewed us and reported our story.' Likewise, Su (middle-class, male) also emphasised: 'The learning atmosphere was fantastic. The most common topic between us was work and study. Especially during the last year, everyone did their best to achieve their post-graduation goals.' Su also pointed out: 'In such an environment, being lazy would be ridiculed by teachers and classmates.' This contradicted what Chu said about people being isolated if they worked hard.

In addition, many middle-class students who had attended elite universities expressed that they felt comfortable with the inspiring school learning atmosphere because it was similar to what they had experienced at home. Chen (middle-class, female) told me: 'When I was at home, my parents would read books and learn when they were free. I then attended university and lived there. Whenever I returned to the dormitory, my roommates did the same thing. That familiar atmosphere made me feel warm. It even reduced my homesick feeling.' Su (middle-class, male) also claimed: 'Studying is always the top priority in my family. This atmosphere continued after I entered university, so adjusting to university life was never challenging for me.'

Conversely, most working-class students expressed that although the learning atmosphere of elite universities was encouraging and inspiring, they were unfamiliar with it. Such

senses of unfamiliarity further entailed their feelings of pressure, anxiety, and discomfort. Miao (working-class, female) complained: 'I admit that everyone around me worked hard, which was, of course, a good thing. But I felt the environment was a little too pushy: I was in a rush every day and under huge pressure.' Miao told me later: 'At the beginning, I couldn't handle the pressure that came with such a pushing atmosphere. I was unfamiliar with it. I had insomnia for a long period, and my emotion was volatile. It was an excruciating memory.' Similarly, Kong (working-class, male) argued: 'I've always been relatively independent. In other words, I'm not used to living in a stressful and competitive environment. I prefer learning to be my voluntary act rather than a forced choice directly or indirectly by people around me.' We could see from their words an entirely different story from their middle-class counterparts, where the positive learning atmosphere had negative repercussions rather than being beneficial.

6.6.3 Self-learning

From the Chinese doctoral admissions system and regulations, we learnt that all students who can successfully enter the elite doctoral school must have mastered the required knowledge and competency. Then how could those students who did not establish good study habits in childhood or did not have the opportunity to enter an elite university with an inspiring learning atmosphere for undergraduate or master's study meet this standard? This study found that the key was self-learning. Kong (working-class, male) mentioned: 'Most of the required knowledge and competency for the doctoral application was learned by myself rather than taught by teachers in the classroom.' Chu (working-class, male) also stated: 'In many aspects, especially the aspect of school learning, I didn't have much advantage. The schools I attended were not highly ranked or had a good learning atmosphere. However, my self-learning ability is relatively strong, and I am a firm-willed person, which is why I could succeed in my PhD application.' Another participant, Wang

(working-class, female), also highlighted: 'A large amount of studying was done by myself. So I told you before, as far as I am concerned, PhD application was a lonely journey.'

Comparatively speaking, self-learning was less likely to emerge in the transcripts of middle-class students or students who had participated in elite universities. These students were more likely to attribute their acquisition of knowledge and competency to school education. Su (middle-class, male) mentioned: 'I didn't spend much extra time and energy on doctoral preparation because most of the things were already learned in school.' Pang (middle-class, female) also stated: 'Except for those who transfer their majors, If a student's PhD study continues with the same major as before, the knowledge learned in school will be enough, as long as he or she worked hard enough on school courses.'

I mainly identified three reasons self-learning could compensate for students' study habits and school learning atmosphere disadvantages. First, self-learning efforts allowed students who did not have parents to help establish good study habits to realise and make up for their deficiencies. In other words, another way to build up good study habits was through self-learning. Fang (working-class, female) explained: 'Training from parents is essential, but we should not ignore that human beings can introspect. They can realise their shortcomings by observing the behaviour of others and make up for them through self-generated efforts.' Fang took herself as an example: 'My academic performance was not good before. So I paid particular attention to how well-performed students did and asked them for advice. I then realised that I did not have good study habits formed in advance and forced myself to make changes. These changes were the basis for my improved grades and doctoral school access.'

Another example was offered by Kong (working-class, male): 'My academic performances were not good when I was young, and my teachers didn't like me. I thought it was because I wasn't smart enough. As I grew older, I started noticing the differences between myself and well-performed students and tried to learn from them. From then on, everything got

better. It was not that I was not smart enough, but there were some learning methods and habits I hadn't mastered, which could be made up through self-learning.' Likewise, Zhang (male, supervisor) also mentioned: 'Some students are talented but don't know how to study correctly due to the lack of family guidance, so they don't get good grades. However, their situations can be changed if they have high levels of self-learning ability, through which they can realise how they did things wrong and make changes.'

Secondly, I noticed that self-learning efforts could benefit students' utilisation of school resources, which, to some extent, compensated for their lack of family resources. A surprising finding of this study related to this argument was that, unlike the learning atmosphere of less-privileged schools, which had received much criticism, participants seemed to endorse the provision of resources among those schools. Many of them even attributed their acquisition of knowledge and competency relevant to PhD access to it. Fang, a working-class female participant, explained: 'Although it was not an elite university, the resources provided by it were sufficient. It was adequate for students who were willing to make PhD applications.' Also, Peng (middle-class, male) said: 'The resources of the school I attended before were wealthy. Students who want to pursue elite doctoral school access can achieve their goal by using this advantage well.' In other words, nearly all universities in China, regardless of their rankings and types, provide resources for their students which is sufficient to support their access to elite doctoral schools.

The school resources mentioned by the participants can be roughly divided into two types: concrete cultural goods and relatively less tangible but still objectified cultural activities. The former mainly includes the school library and historical monuments. As for the school library, Wang (working-class, female) mentioned: 'Library was where I stayed the most. It provided me with everything I needed for study, materials, venues and something indescribable.' Hua (middle-class, female) also remarked: 'Library seems to have a

magical power that helps people for their study.' As for historical monuments, Xie (middle-class, male) said: 'The school I attended has a lot of distinguished alumni, and the campus is full of their traces. It is a kind of inheritance from them, which can unconsciously nurture and educate junior fellow students like me.'

Apart from concrete cultural goods presented on campus, some activities that took place in schools were also repeatedly mentioned. Although these activities' primary purpose was not to cultivate professional knowledge or improve relevant skills, exposure to them could still facilitate students' academic progress and development of the capability to obtain knowledge and competency. According to the participants, cultural activities included school lectures:

> As a student who had majored in Japanese before, the beginning of my economics study was a series of related lectures I attended as an undergraduate student, which a well-known expert in the field gave. I not only learned knowledge from him but also understood the study method, which benefited my subsequent learnings and access to this doctoral school. (Shen, working-class, female)

> The lectures offered by the school broadened my horizons and, more importantly, enhanced my abilities that could not be developed through attending professional courses alone. For example, the language and expression skills required for PhD interviews were something that needed extra training, which I obtained from school lectures. (Lu, working-class, male)

Research programs:

> I was fortunate to be an assistant in a research project before, where I got to know some supervisors and PhD students. I learned a lot from them about the knowledge and methods of doing research, which benefited my doctoral application. (Lu, working-class, male)

From the perspective of my educational background, I didn't have much advantage. But fortunately, I got some research program experience, which, to some degree, enabled my development of scientific research ability and mastery of relevant knowledge. (Peng, middle-class, male)

Social practice:

I think only in society can we understand the meaning of the things we are learning or working on. Only by genuinely understanding these can we better learn knowledge and master skills. (Jiang, working-class, male)

The social practice broadened my horizons and made the initially abstract knowledge concrete and practical. In addition, through it, I developed some abilities that could not be developed in school classes, making me a more comprehensive and competitive person. (Han, working-class, female)

Furthermore, I noticed that the school's syllabus included neither the above-discussed exposure to cultural goods nor participation in cultural activities. In other words, they were not part of formal education but were related to extra-curriculum spontaneous learning processes. This point could be seen from Peng's (middle-class, male) remarks: 'In addition to the compulsory courses and activities, the school also provides many additional resources for us to employ, but the utilisation of these resources needs to be achieved through self-study.' Li (working-class, female) also mentioned: 'Schools provide numerous resources, but very few students can truly make them work because a significant number of these resources are not involved in compulsory courses. Students must discover and learn how to use them, which requires self-learning efforts.' Similarly, Lu (working-class, male) stated: 'Most of these things didn't come into use until I was preparing for my PhD application. I then learned that the school had prepared sufficient resources for our learning, especially self-learning, but many students did not even know their existence.'

From their words, we could conclude that one thing closely associated with utilising school resources was self-learning.

In addition, the interview data revealed that working-class students benefited more from school resources for the sake of the fact that they cherished more about the opportunities. This point can be seen in multiple transcripts. For instance, Han (working-class, female) mentioned: 'After attending university, I had the chance to learn about knowledge and skills in various fields. I've never had an opportunity like this before. It was precious for me.' Likewise, Kong (working-class, male) said: 'What attracted me most about university was that it provided me with unlimited resources and support to learn everything as far as I wanted. Neither my family nor the school I attended before made me feel like that. I was like a sponge, trying my best to absorb the nectar of knowledge.' In contrast, most middle-class students, especially those who graduated from famous high schools in big cities, expressed that 'College and high school felt no different. High schools had all the resources universities could provide' (Bai, middle-class, female). 'The same was true in my high school. Students could learn in depth whatever they were interested in' (Chen, middle-class, female).

Another factor we need to take into account in our reading of relevant data is that, as with all universities, students who get into them experience competition, and often working-class students experience even more intense competition. In other words, working-class students in the same university may have better abilities than their middle-class counterparts; one particular ability identified by this study was self-learning ability. As Zhang (male, supervisor) mentioned: 'We like applicants from elite universities. But we also want applicants from non-elite universities with extraordinary performance because this often means that some of their abilities are outstanding. In my experience, such applicants are usually good at using surrounding resources for self-learning, which is crucial for doctoral research.'

Finally, many participants described self-learning as a self-centred activity, which was less affected by the surrounding environment than formal school learning. Pang (middle-class, female) exemplified this: 'If the school does not provide a supportive learning environment, then it is wise to choose self-learning. Taking myself as an example, how my classmates treated their studies or behaved in school didn't affect my preparation for PhD application because everything was designed and conducted by myself. I owe the fact that I graduated from a low-ranking university but still got the highest score in the written examination for my doctoral admission to my self-learning efforts.' Fang (working-class, female) also told me: 'Unlike classroom learning, self-learning is less affected by external factors. Although it has relatively high requirements on the learner's self-control ability and self-management ability, it is still a better choice in certain circumstances.' We could see that even students who had attended non-elite universities had the chance to get rid of the annoying learning atmosphere and access elite doctoral schools with the help of self-learning efforts.

6.7 Summary

This chapter presented factors related to the development of capabilities on the basic capability list—some factors impact resource distribution, while others impact conversion processes. The next chapter will link these factors to the Sen-Bourdieu theoretical framework to further discuss the impact of social class and gender on the development of basic capabilities. In addition, results related to comparing these factors with similar factors in other studies will also be presented to demonstrate how this study builds on existing literature and what new insights I gained about elite doctoral school access in China.

VII. DISCUSSIONS: DEVELOPMENT OF BASIC CAPABILITIES

This chapter relates the findings discussed in the previous chapter to the Sen-Bourdieu theoretical framework. Bourdieu's notions of capital, habitus and fields and Sen's concept of agency will be used to comprehend the impacts of social class and gender on students' elite doctoral school access in China. Moreover, results of the comparison between this study's findings and similar findings in other literature will also be presented to illustrate what unique insights this thesis provides to its readers.

7.1 Impacts of social class

Figure 7.1. Impacts of social class on elite doctoral school access in China

Resources	conversion processes →	Basic capabilities

Cultural capital
  Information strategy
  Parents' expectations
Social capital
  Types of guanxi
Economic capital
  Family economic conditions

Familial habitus
  Sense of future
  Embedded resources
  Primary concerns
  Study habits
Institutional habitus
  School supports
  University guanxi
  School learning atmosphere
Fields
  Sense of certainty

This section will explain why working-class students need more effort to access elite economics doctoral schools than their middle-class counterparts in China. Among the factors presented in chapter six, more than half are impacted by social class, much more than those affected by gender or agency. From this perspective, social inequality is more severe and noticeable; hence it was placed at first place when I made discussions. Moreover, both factors related to resource distribution and the conversion processes are

included, which means social inequality exists in all aspects of Chinese people's lives (see **Figure 7.1** above).

7.1.1 Capital and social class

Social class impacts students' elite doctoral school access in China firstly through the unequal distribution of different forms of capital, including cultural capital, social capital and economic capital (see **Table 7.1** below).

Table 7.1. Capital and social class inequality regarding elite doctoral school access

	Middle-class	Working-class	Relevant capability
Parents' expectations (Cultural capital)	• High expectations	• No expectation or objection	Capability to aspire
Information strategy (Cultural capital)	• Insider information (or converted insider information) mainly	• Outsider information mainly	Capability to obtain information
Types of guanxi (Social capital)	• Strong ties • Direct guanxi	• Weak ties • Indirect guanxi	Capability to establish guanxi
Family economic conditions (Economic capital)	• Provide support	• Generate hindrance	Capability to aspire

Cultural capital

Cultural capital plays its role first through parents' expectations, which impact students' development of the capability to aspire. Similar to the findings of scholars in both Global North countries and China (Lareau, 2000; Reay et al., 2009; Meng and Li, 1996; Sheng, 2018), this study also noticed that the volumes of cultural capital that parents possessed, especially those related to educational experiences, significantly impacted their expectations regarding children's PhD access, which further shape students' capability to aspire. I found that middle-class parents, particularly those with advantaged cultural capital, tended to have high expectations. The success of their children's PhD access was viewed in terms of not only entry to a doctoral school but also entry to an elite

doctoral school. This finding is similar to that of Pugsley (1998: 77), suggesting that middle-class parents view their children's success 'in terms of entry to a university, but also in terms of entry to a good university' in the UK. Moreover, to ensure that their advantaged cultural capital benefits their offspring's development of the capability to aspire, middle-class parents tried to provide them with role models and guidance.

In contrast, working-class parents' attitudes regarding their children's PhD access were more complex. On the one hand, they recognised the importance of education. While on the other hand, they either doubted the value of the PhD or were neutral about their children's application. Generally speaking, working-class parents had no expectation or even opposed their children's PhD access, which dramatically weakens their children's development of the capability to aspire. This finding differs from Sheng's (2018) research, which concentrated on undergraduate access in China. Sheng (2018) suggested that, like middle-class parents, working-class parents also had high expectations of their children's undergraduate access regardless of their insufficient capital and uncertain feelings. I think that the peculiarity of PhD access caused this difference. In contemporary China, undergraduate education was widely considered necessary and valuable, while doctoral education, the highest level of education, was still poorly accepted by the working class.

Secondly, cultural capital also impacts students' information strategy, which is vital for their development of the capability to obtain information. Based on the type of information Chinese families utilise in the competition for doctoral places, this study identified three information strategies, including insider information mainly strategy, converted insider information mainly strategy, and outsider information mainly strategy. Due to the decline in the 'currency and exchange value' of the different types of information, the effectiveness of these three strategies decreases (Reay et al., 2005: 157). The first two strategies were mainly used by middle-class families, while the last was prevalent among working-class families. This finding differs from that of Reay et al. (2005: 152) in the UK, who argued that

students located 'at the two ends of the social spectrum' employ more insider information than outsider information[23] for higher education choices. I assume that the main reason for this discrepancy is that the two studies concentrate on different stages of admission, Reay et al. (2005) focus on undergraduate entry, while this study focuses on PhD access. Because doctoral education is a higher level of education, the popularity of relevant information is low, so unlike undergraduate education, the subordinate social class has no chance of acquiring insider information related to it.

Figure 7.2. Cultural capital and information strategies
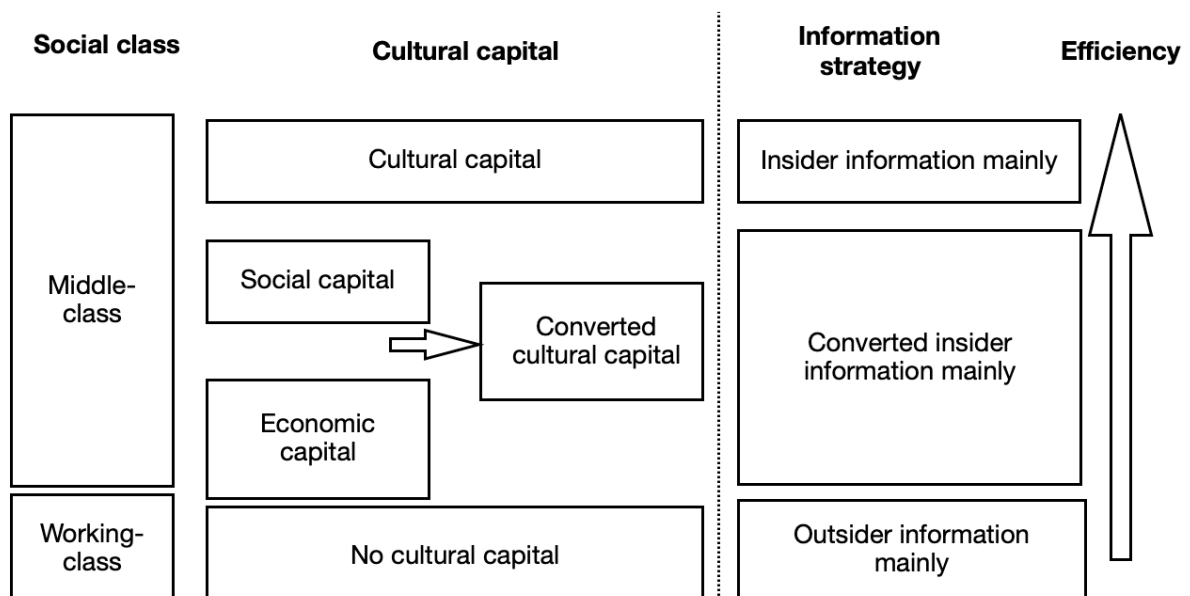
Cultural capital provides valid explanations for the reasons behind different information strategies. **Figure 7.2** above depicts the uneven distribution of cultural capital and its relationship with students' information strategies. However, as merely 16 middle-class students were engaged in this study, the typology needs to be considered tentative and indicative, demanding further studies to test its broader applicability.

In addition, we can see that not only did families with different social class backgrounds apply different information strategies during their children's PhD application processes, but

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[23] The original terms of Reay et al. (2005) are hot knowledge and cold information, which correspond to insider information and outsider information in this study. Their meanings are similar.

those belonging to the same social class category drew on different strategies. To be more explicit, besides inter-class differences, intra-class differences between middle-class families were also significant, which resulted in differing abilities to manage their offspring's successes. As was suggested by Sheng (2018: 114): 'the emerging middle class in China is a highly differentiated one.'

It seems that utilising insider knowledge was a predominantly middle-class activity, which makes their information strategies 'hyper-rational', sophisticated and functional (Reay et al., 2009: 145). However, based on the cultural capital at their disposal and the ability to mobilise children's PhD access, middle-class families could be further divided into privileged and normal ones. Privileged middle-class families were often insiders to the education system with powerful and effective cultural capital, which could ensure their possession of high-quality, detailed and well-informed insider knowledge. Even 'in the absence of any deliberate inculcation', such insider knowledge still had overwhelming influences on their offspring (Bourdieu and Boltanski, 2000: 18). Their information strategies, therefore, were some pre-adapted things 'without strategic design' (Bourdieu, 1990: 108). With their help, they could easily develop what was referred to by Bourdieu (2009: 66) as 'a feel for the game' concerning academia and win the competitions of PhD applications.

In contrast, lower echelons of middle-class families were often outsiders to academia. Due to their lack of close connections with the education field, they did not have sufficient relevant cultural capital that could help them develop insights and acquire information about PhD admissions. Fortunately, these families had either high occupation-based social positions (social capital) or distinguished economic backgrounds (economic capital). Under such circumstances, utilising other kinds of capital to compensate for disadvantages and mobilise cultural capital has naturally become their choice. This finding echoes the argument of Bourdieu (1986), who suggested a process through which one form of capital

can be transformed into another. Later in 1990, Bourdieu further claimed that during the intergenerational transmission of cultural capital, families often strategically take advantage of the resources they possess, like social or economic capital. Likewise, Reay et al. (2008: 124) noticed that some students were able to deploy other resources they held to generate 'forms of legitimate knowledge that have efficacy within the field of UK higher education'. Such legitimate knowledge was similar to what was named by me as converted insider information in the study. Moreover, this study found that families with substantial social capital tend to strategically establish contacts with the education fields to equip their children with the information and knowledge that permits them access to elite doctoral schools. While families with economic capital as their core advantage prefer to invest heavily to help with their children's information acquisition and secure their success. This type of information, either 'social embedded in networks and localities' or purchased with money, was named by me as converted insider knowledge, whose efficiency was lower than insider knowledge itself (Ball and Vincent, 1998: 377).

Finally, working-class students often placed a great deal of reliance on outsider information to navigate their applications, not because they wanted to but because they had no other choice. This phenomenon was firstly due to the deficiency of cultural capital available to them. Unlike distinguished middle-class students, working-class students were usually the first generation in their families to attend universities. Therefore, an overwhelming of them were outsiders to academia who held a small amount of cultural capital. Apart from cultural capital, other types of resources, such as economic resources and social resources, that can be converted into cultural capital were also limited. Although we had discussed in the previous section that working-class students could establish indirect guanxi with weak ties to obtain some general information, this does not conceal the fact that the social resources they mastered were still far from enough. Consequently, working-class students' information strategies tended to rest upon a high degree of unfamiliarity. They were mostly

haphazard and noneffective, similar to what was referred to by Reay et al. (2009: 145) as 'ad hoc, serendipitous approach.'

Social capital

Social capital impacts the types of guanxi available to students with different social backgrounds, which further affects their development of the capability to establish guanxi. Bian and Huang (2015: 313) suggested that two antecedents are essential to analyse Chinese guanxi without losing 'sight of social structure and ease of methodological reductionism'; they are 'relational forms and network structures.' Following their suggestion, this study found that available guanxi to students with different social class backgrounds during their PhD application processes differs. Regarding relational forms, the guanxi employed by middle-class students tends to be bonded by strong ties, characterised by a high frequency of interaction and a high degree of emotional attachment, while weak ties connect guanxi used by working-class students. As for network structures, middle-class families are more likely to utilise direct guanxi, through which relevant authorities are directly contacted without any intermediaries, in contrast to the indirect guanxi employed by working-class families. The main reason behind these discrepancies is that the social capital linked to the field of doctoral education held by different social classes varies.

Bourdieu mentioned that 'the amount and the quality of the social networks an individual can potentially mobilise are vital in the relative outcomes offered' (Green and Vryonides, 2005:330). Likewise, I argue that guanxi plays a pivotal role in PhD enrolment in China. It maps out one's relationship to the doctoral world and 'one's proper place in it' (Bourdieu, 984: 474). Different social classes not only possess different types of guanxi, but the effects of guanxi possessed by them are also different. Guanxi possessed by middle-class students, which are often direct and bonded by strong ties, could provide non-redundant

resources. Compared with guanxi possessed by working-class students, it is undoubtedly more efficient and powerful. This finding fits with Bourdieu's (1993) claim that social capital possessed by middle-class families provides valuable support and access to precious resources. What makes the situation even worse is that, even when offered the chance to improve guanxi, working-class students still could not catch them because they were constrained by numerous practical factors, such as monetary and time expenses. A similar claim was made by Ball et al. (1997) in their study.

Economic capital

In addition to cultural and social capital, economic capital, in other words, family financial condition, also significantly impacted students' elite doctoral school access in China. More specifically, it affects students' development of the capability to aspire. This argument is similar to the findings of many other studies in both China and Global North countries (Archer and Hutchings, 2001; Green and Vryonides, 2005; Hart, 2013; Sheng, 2018). Nevertheless, it is worth noting that, based on the particularity of doctoral access in China, how family economic conditions work was different from what other researchers have found. In China, doctoral schools provide their students with sufficient financial support to cover tuition and living expenses during their studies. Therefore, unlike other stages of higher education in China or doctoral education in other countries, the financial burden during the study was not the main reason for students' self-limitation of their aspirations.

This study found that working-class students inhabited a class hinterland regarding the development of PhD aspirations mainly due to two reasons related to family economic status. The first reason was the vast expense of PhD applications, primarily when they intended to apply to doctoral schools in other cities, which required extra fees like transportation and accommodation. Doctoral schools could not help with these expenses, making them considerable burdens for financially distressed applicants. Under such

circumstances, these students either borrowed money to make the application or made choices under significant restrictions, neither conducive to their PhD aspirations.

Secondly, choosing to do a PhD meant that the student could not work and earn money to support their family for a few years, which was another crucial challenge for working-class students whose families were financially burdened. A master's degree was enough for them to get a decent job, which made the PhD less alluring, especially since financial hardship was their priority. For these two reasons, although the current Chinese doctoral education system does not make students feel that the PhD education is unaffordable to them and their families, working-class students remain hesitant to develop relevant aspirations.

While the reasons for the disadvantages of working-class students varied, the advantages of middle-class students were remarkably similar. Like parents in Global North countries, Chinese parents worked hard to realise their high expectations for children's education through privileged family economic capital (Ball et al., 2002; Reay et al., 2009). Such efforts run through all steps and stages of their children's education, including PhD access. Rather than being pressured to subsidise their families, middle-class students could receive ample financial support from their parents, which allowed them to choose what they wanted to do confidently.

7.1.2 Habitus and social class

Social class impacts students' elite doctoral school access in China secondly through the unequal conversion of resources into capabilities, which are affected by both habitus and field factors. This section will discuss how habitus (institutional habitus and familial habitus) impacts social class inequalities (see **Table 7.2** below).

Table 7.2. Habitus and social class inequality regarding elite doctoral school access

	Middle-class	Working-class	Relevant capability
Sense of future (Familial habitus)	• Try to maintain or surpass the social status	• Limited by social class backgrounds	Capability to aspire
Embedded resources (Familial habitus)	• Influence and general information	• In-depth information	Capability to establish guanxi
Primary concerns (Familial habitus)	• Supervisor's background • Location (for future development) • Potential guanxi	• University's background • Location (for financial reasons) • Potential income	Capability to obtain information
Study habits (Familial habitus)	• Able to establish good study habits	• Unable to establish good study habits	Capability to acquire knowledge and competency
School supports (Institutional habitus)	• More likely to be supported • School supports reinforce the impacts of other factors	• Less likely to be supported • School supports conflict with the impacts of other factors	Capability to aspire
University guanxi (Institutional habitus)	• Supportive • High reputation	• Unsupportive • Low reputation	Capability to establish guanxi
School learning atmosphere (Institutional habitus)	• Rich learning atmosphere	• Poor learning atmosphere	Capability to acquire knowledge and competency

Familial habitus

Familial habitus impacts social class inequalities first by shaping students' sense of the future. It was noticed in this study that Chinese students' PhD aspirations frequently centred on accessing doctoral schools and obtaining a doctorate in order to pursue career aspirations and relevant lifestyles in the future. This finding validated Bourdieu's (1977: 503) argument that students' higher education choices were primarily governed 'in terms of the careers to which institutions provide access.' In addition, Rose (1998: 158) pointed out that education helps people maximise their power, happiness and quality of life 'through

enhancing its autonomy and then instrumentalising its autonomous choices in the services of its lifestyle', which was also similar to the findings of this study.

For the participants in this study, developing an academic career was primarily related to particular lifestyles rather than high income. The lifestyles brought about by an academic career were often described as stable, time-free, challenging, and less stressful. However, it seemed that doctoral study could not substantially boost students' earnings after graduation. This phenomenon was mainly due to the particularity of the economic discipline. Economics undergraduate or master's graduates were popular in the Chinese job market. Many jobs in the industry paid well and had good development prospects. Taking a few years to develop such a career was far more cost-effective in terms of income than doing a PhD.

Furthermore, I found that the participant's attitudes towards the type of future brought by the PhD education were highly classed even if they all 'fulfil the conditions that the space tacitly requires of its occupants' (Bourdieu, 1999: 128). For working-class students, pursuing academic careers and their relevant lifestyles means eschewing the normal biography and escaping the constraints of working-class history (Reay et al., 2009). Because no family members or people close to them made similar choices, they were often worried that such a future was not what they should be pursuing and were not confident that they could fit in. As was suggested by Reay et al. (2002), this familial habitus of prioritising the local and sense of fitting in works over and above the influence of economic capital constraints. Going back even further, around half a century ago, Thompson (1968: 109) also referred to 'the localised milieu of collective experience out of which develop bounded lifestyles'.

In contrast, middle-class students paid more attention to the role doctoral education plays in maintaining or surpassing their social status as in the period of credential inflation, a doctorate was a type of cultural symbol that embodied specific social positions, and an

academic career could defence a person's distinction. Moreover, in a transitional society, the Chinese middle classes had a short history and were full of instability, so they urgently needed to ensure the social status of their next generation and were explicitly interested 'in lifestyle, education, politics and prestige' as a result (Bourdieu, 1990: 88). Finally, unlike working-class participants, it seemed that middle-class students were familiar with academia, full of confidence and did not worry about the issue of fitting in.

Secondly, different embedded resources in guanxi, caused by different familial habitus, also shape social class inequalities regarding elite doctoral school access in China. Having discussed the types of guanxi that students of different social classes have access to, which were determined by their possessed social capital, I further explored the role different guanxi can play and the resources associated with them. Similar to the findings of many other studies on Chinese guanxi, this study first noticed that guanxi facilitates the transmission of information, and the guanxi-transmitted information varies between social classes (Chen et al., 2015; Liu et al., 2020; Barbalet, 2015). For most students with guanxi, the information they could obtain includes enrolment information, such as enrolment quotas and exam information, such as the list of reference books. However, some more tailored and in-depth information, like information related to supervisors' preferences and long-term career development, is exclusively available to middle-class students who are more closely connected to relevant people. Therefore, I claim that an essential method by which social class impacts the capability to establish guanxi is through the generation of information asymmetries.

Besides information, guanxi in China is related to another type of resource: influence during the PhD application processes. Guanxi possessed by some middle-class students provides obligation and trust between people and thus was mobilised to link students as favour receivers and their connected supervisors or admission officers as favour grantors. Such a guanxi favouritism model is strikingly consistent with what Bian (1997) found in his

study on job-assignment processes, confirming his proposition that providing/receiving influence through guanxi is widespread in China. This phenomenon is closely related to Chinese culture and qualitatively differs from what happens in the Global North context, where social connection matters in PhD access mainly because it provides information. In addition, I discovered that the level at which guanxi could facilitate favour exchange depends on the admission system. With the recent reform of doctoral admissions in China, which dismantled the pure examination system, the criteria for PhD admissions have become diverse, and the proportion of subjective factors in the entire enrolment process has increased. Although formal standards such as exam results and GPA still need to be considered, supervisors and admissions officers are given certain degrees of discretional power to make their own decisions, creating opportunities for guanxi favouritism to affect admission outcomes.

Thirdly, this study found that students' primary concerns concerning the same topic differed, which is another way familial habitus plays its role. Middle-class students tended to pay attention to more in-depth and specific things when collecting background information compared to their working-class counterparts. They explored detailed information relevant to the background of supervisors, while working-class students only collected general information related to the universities' backgrounds. This finding echoes Power's et al. (2003) study arguing that middle-class families were able to identify more subtle differences than those between elite universities. As a result, working-class students not only lag behind middle-class students in terms of application success rate, but even if the application is successful, they suffer from low 'compatibility of choice', leading to a series of subsequent issues such as unpleasant learning experience, student-supervisor conflict and even non-completion (Ozga and Sukhnandan, 1998: 321). Many other studies have also mentioned the significance of choice compatibility (Ozga and Sukhnandan, 1998; Reay et al., 2009; Daharnis and Ardi, 2016; Levav et al., 2010).

Moreover, there were differences between the participants concerning the fact that elite doctoral schools are primarily located in big cities. Big cities mean more opportunities and better development for middle-class students. However, these advantages were extrinsic for working-class students, with all 'extravagances' being excluded (Bourdieu, 1990: 56). Different from middle-class students, they were made aware of what was referred to by Bourdieu (1990: 113) as the 'sense of one's place' and 'sense of the place of others' and often surrounded by a strong sense of inability to fit in. Together with the high living expenses, they felt more worries than confidence in choosing elite doctoral schools in big cities. Accordingly, they tended to use relevant information to determine whether or not to attend the doctoral school after a successful application, unlike middle-class students for whom the order was reversed, where relevant information affected whether they would apply particular doctoral school.

In addition, when it came to what they expected from a doctorate and their doctoral school, middle-class participants talked extensively about guanxi, which was closely related to pursuing a high-quality career and life. Their concerns were closer to one of the most significant benefits that elite education could bring, which, as many scholars asserted, was the powerful and effective social resources (so-called social capital in Bourdieu's term) in relation to the alumni networks (Useem and Karabel, 1990; Zweigenhaft, 1992; Espenshade and Radford, 2009; Tholen et al., 2013). To be more explicit, middle-class families' selection of elite doctoral schools focused not only on 'the training' they could receive but also on the careers and lives 'to which institutions provide access' (Bourdieu, 1977: 503). Such familial habitus ensured their offspring became 'people like us' and maintained their privileged social status (Bourdieu, 1984: 64). In contrast, working-class participants constantly mentioned income. Fundamental issues of survival were still what they had worried about most.

Fourthly, familial habitus impacts students' study habits, leading to social class inequalities regarding their access to elite doctoral schools. Bourdieu (1973) asserted that the education system tends to highly reward students who are able to inherit high volumes of familial cultural capital by promoting their educational opportunities and achievements. Therefore, families with large amounts of cultural capital in stock, primarily middle-class families, tend to transfer cultural capital to their children through specific habitus (Bourdieu, 1977). This study noticed that one particular type of middle-class familial habitus closely related to the development of the capability to acquire knowledge and competency was helping children establish good study habits. During the early stage family upbringing process and through embodied daily instruction, the middle-class students, as Bourdieu (1977) claims, had already established good study habits. These habits enabled them to acquire knowledge, competencies and skills in school and, consequently, obtain good examination results at critical moments, such as the moment of elite doctoral school access. In contrast, working-class parents' lack of cultural capital and disposable time and energy constrained them from generating productive familial habitus. They tended to be reluctant to involve in their children's education and turn the responsibility entirely to school. However, without good study habits cultivated at home, their children could not adapt well to school learning or acquire knowledge and competency essential for their pursuits of academic success. In this way, social class inequalities were produced.

This research found that good study habits consist of factors including time management, goal-setting, problem-solving and self-reflection. Among them, goal-setting was also identified as an essential study habit by Sheng (2018) when he explored undergraduate access in China. Another thing Sheng (2018) mentioned, which was also emphasised by Bourdieu (1986), was reading habits. It was not recognised in this study because we conducted research at different times and places and concentrated on different levels of school access. The other three factors include time management (Ebrahimi et al., 2017;

Boothe & Schaefer, 2022), problem-solving (Gao et al., 2021; Bingham, 1958), self-reflection (Desrochers et al., 2018; Nowicka et al., 2018), were also recognised significant by many studies.

In addition, this study found that there seemed to be a clear division of responsibilities regarding children's education between fathers and mothers in China. The mother was often responsible for helping children establish good study habits, which required day-to-day involvement. Similarly, Bourdieu (1984) and many other scholars also asserted that mothers are often home-based educators of their children (Brantlinger *et al.*, 1996; Lareau, 1989, 2000; Ball *et al.*, 2002; DiMaggio and Mukhtar, 2004). Fathers in Chinese middle-class families were often busy with work. Therefore, they tended to be more like the 'distant father' described by Sheng (2018), whose participation in their children's education often stays at the level of tactics designing and decision-making. This finding echoes Bourdieu's (1986) argument that the inter-generation transmission of cultural capital depends not only on the quantity of it possessed by the family but also on the usable time and energy available.

Institutional habitus

The finding of this study indicated that many factors had impacted social class equality regarding elite doctoral school access in China. Together with familial habitus, institutional habitus, which was first manifested as school supports, plays its role. During the interviews, the most mentioned school supports were the teacher's guidance and encouragement. This fact resonates with Hart's (2004) argument that although people might generate aspirations of their own volition, in many cases, they are persuaded towards specific aspirations by others. Apart from this, some students, especially those who had attended prestigious universities for undergraduate or master studies, also owe their generation of PhD aspirations to the capacity to negotiate lives reflexively. This

finding echoes Ranson's (2004: 19) claim that education, particularly elite education, conduces to shape our 'power and capacities, in our unfolding agency'. Likewise, Hart (2013) also underlined that students were more likely to develop a positive sense of the future if they were provided with a high-quality education. Finally, career guidance provided by the career centre and personal tutor was also underlined frequently. This finding further validated our previous argument that PhD aspiration was closely related to students' occupational plans and expected lifestyles in the future.

Through the above types of school support, prestigious schools could better assist their students in developing PhD aspirations. Meanwhile, this study found that prestigious schools tended to have a relatively homogeneous social class intake. In other words, they admitted more middle-class students. Together, these facts shaped social class inequality regarding students' development of the capability to aspire. Working-class students struggled to get into elite schools and thus lacked access to adequate resources, preventing them from gaining an advantage when applying for further studies. As a result, some of them were eliminated at every rung on the educational ladder. This fact was in line with the data I had queried. With the advancement of the higher education stage, the proportion of students from the working classes gradually decreased (CNBS, 2021). Therefore, the percentage of working-class students in China was much lower at the doctoral level than at the master's and undergraduate levels (CNBS, 2021).

Apart from the likelihood of getting school support, the relationship school support had with other factors also varied among students with different social class backgrounds. For working-class students, even if they could get support from the school, there was a high probability that such support conflicted with the wishes of significant others, in particular, parents and friends. Consequently, their decision-making processes were problematic, puzzling and even painful. In contrast, middle-class students were more likely to report conformity regarding institutional habitus, familial habitus and the influences of other

315

people around, making it 'difficult to break out of narrowly defined parameters of acceptable choice' (Reay et al., 2009: 58). Such a consistency contributed to what Bourdieu (1990) mentioned as 'already realised ends — procedures to follow, paths to take'.

However, despite the facts mentioned above, most participants described their decision-making process as individualised and independent. The main reason was that students were old enough when they made PhD-related decisions. Unlike other studies, which attributed this phenomenon to the fact that students felt it was not cool to listen to their parents' advice, this study found that although external influences still existed at the PhD level, the agency had significantly more room to play here (Reay et al., 2009).

Furthermore, this study found that universities also establish guanxi (with other universities) to promote their students' elite doctoral school access — another institutional habitus that results in social class inequality. Such university guanxi set parameters around their students' potential choices, constituting a significant part of their institutional habitus. As a result, the routes of elite doctoral school access are much more straightforward and evident from some institutional vantage points than others. Middle-class students who attend elite universities for undergraduate or master's studies are much more likely to succeed not only because of their class backgrounds but also because the universities they participate in have supportive cultures and relevant guanxi for help. Even working-class students who have the opportunity to enter highly ranked universities can shorten their proximity to elite doctoral schools to a large extent. Like individual guanxi, university guanxi can provide information first and foremost. In comparison, the information obtained through university guanxi is often more in-depth and detailed, which cannot be obtained through ordinary interpersonal communication. In addition, student referrals are made possible because of the collaboration between

universities (institutional guanxi), which leads to increased communication and familiarity between teachers within those universities (personal guanxi).

Besides organisational practices such as providing information and personal referrals, university guanxi also prepares its students for elite doctoral schools by establishing and improving their reputation. This finding is in line with Buchmann's (2010: 435) assertion that there exists a worldwide phenomenon of shadow education where schools tend to 'confer advantages on already privileged students'. Weick (1976) also claims that student enrolment is affected by the coupling of educational status between schools. It is worth mentioning that there are some differences between China and the Global North countries concerning educational status. Apart from school reputation, the term educational status also involves school tradition in the Global North context. Some schools do not welcome students of specific groups (such as working-class and ethnic minority students). For instance, Oxbridge is argued by some scholars to have an in-built historical bias favouring middle-class students from private sectors, despite its professed interest in promoting its comprehensive intake (Smithers, 2000; Attwood, 2008; Anon, 2019; McCrum, 1998). Nevertheless, this study did not notice that similar phenomena are prevalent in China.

Institutional habitus's third role in causing social class inequality is providing a different school learning atmosphere. This study found that it was not the factors such as facilities, teachers, and courses that made the most significant difference but the atmosphere. For students in less-privileged schools, even if they wanted to work hard on their studies, the surrounding environment did not encourage or even allow them to do so. This point is crucial because Sen argued that it is not only the choices an individual makes that constitute their well-being but also the freedom the individual has to make those choices. Accordingly, we could conclude that due to the unfriendly learning atmosphere, these students' capability to obtain knowledge and competency was already significantly damaged. To make matters worse, working-class students seemed more susceptible to

such a bad atmosphere because it was similar to the environment in which they were raised. On the contrary, even if some working-class students had the opportunity to enter elite universities, they were still annoyed by the inspiring atmosphere because they were unfamiliar with it. Such unfamiliar senses decreased their ability to benefit from elite universities' advantages.

In contrast, in an environment where everyone around was eager to learn, even students who were not motivated would be encouraged. This study found that such an environment often exists in elite universities, whose participants came more from middle-class than working-class families. In addition, such an environment tended to be similar to what middle-class students had experienced at home, which enabled their development of good study habits. In this way, the advantages of middle-class students with the above-discussed good study habits were further reinforced within a friendly school learning atmosphere. If we put this phenomenon in Bourdieu's terms, we could say that the familial and institutional habitus band together, reproducing the social class inequalities related to students' development of the capability to acquire knowledge and competency. This finding resonates well with Reay et al. (2009)'s argument that there exists a symbiotic relationship between familial and institutional habitus. For advantaged middle-class students, school and family worked together to facilitate their educational success; they 'only have to follow the leanings of their habitus' to gain elite doctoral school access (Bourdieu, 1984: 223).

7.1.3 Fields and social class

I had noticed that students' psychological proximity to elite doctoral schools was as important as their financial and academic proximity to them. To be more explicit, students' perceptions and attitudes towards the field of doctoral education also played a part in shaping social class differences regarding elite doctoral school access in China. Depending on whether students had developed a sense of certainty, their likelihood of

generating PhD aspirations and achieving elite doctoral school access varied. As Bourdieu and Passeron (1977: 226) argued: students' behaviour tended to be governed by their supposed relationship to the field they were about to negotiate as well as what was 'reasonable to expect'. This finding differed from the arguments of the rational choice theory, which emphasised only rational calculation and banished personal perceptions, attitudes and emotions from choice-making processes (Breen and Goldthorpe: 1997; Goldthorpe, 1998).

This study found that middle-class students felt a form of certainty and confidence in the sphere of doctoral education and took their development of PhD aspiration for granted. Especially for those whose parents had higher education history, elite doctoral school access was 'too true to warrant discussion' (Douglas, 1975: 3). This finding echoed Allatt's (1996) 'taken for granted assumption'. Before Allatt, Bourdieu (1984: 56) had argued that:

> The middle-class habitus has a self-assured relationship with the world, with a sense of entitlement and self-worth which comes from privilege, status and success.

In contrast, working-class participants tended to view the PhD application as a challenge in their lives and emphasised the feelings of anxiety and uncertainty when they faced the strange and unfamiliar doctoral education field. Bourdieu and Passeron (1977: 155) had provided a possible answer for such a phenomenon: because no one around these students had 'made it', they instinctively underestimated their chances of success and amplified their concerns. In addition, the previous finding of this study also provided a potential explanation: the working-class students considered academia as an alien environment that was not open for people like them and hard to fit in. These negative anticipations and predispositions resulted in working-class students' self-eliminations from the field of doctoral education or adoption of pragmatic views toward what was realistic and possible, reinforcing their disadvantages regarding the pursuit of elite doctoral school

access. This phenomenon was described by Bourdieu (1984: 471) as ' a sense of one's place which leads one to exclude oneself from places from which one is excluded.'

Another difference that constantly aligned the boundaries between classes was students' attitudes towards the relationship between effort and reward, making elite doctoral school access routine for some participants while unthinkable for others (Bourdieu, 1984). For middle-class participants, elite doctoral school access was merely a matter of hard work, and all they had given to it would pay off. This belief was the result of these students' sense of certainty, as Bourdieu and Wacquant (1992: 127) described:
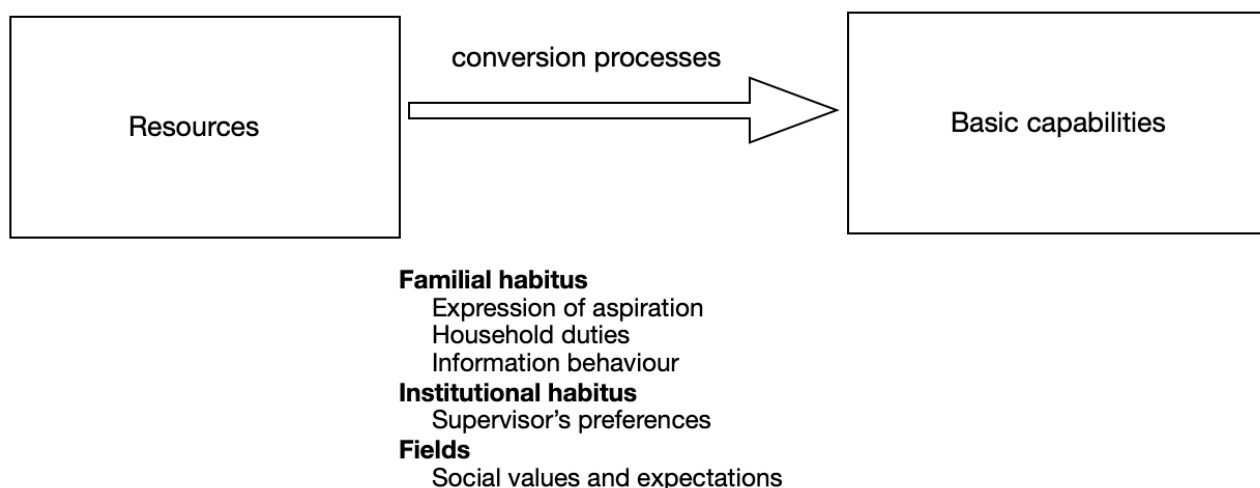
> It is like a 'fish in water': it does not feel the weight of the water and it takes the world about itself for granted.

However, working-class students considered luck equally important instead of believing that merely hard work would lead to final success. Because of this variable's existence, they felt a sense of uncertainty towards the prospect of entering the doctoral education field and positioned themselves outside of elite doctoral school access. Through such subtle and tacit ways, their disadvantages were further magnified.

7.2 Impacts of gender

The findings of this study indicate that there are substantial differences between male and female students in how the basic capabilities of elite economic doctoral school access are developed. Five of the twenty-two factors presented in chapter six are influenced by gender. In this section, these factors will be further discussed. Moreover, I noticed that, unlike factors impacted by social class, all factors affected by gender are related to conversion processes, meaning gender mainly impacts people's ability to convert resources into capabilities rather than obtaining resources (see **Figure 7.3** below).

Figure 7.3. Impacts of gender on elite doctoral school access in China

| Resources | conversion processes → | Basic capabilities |

Familial habitus
    Expression of aspiration
    Household duties
    Information behaviour
Institutional habitus
    Supervisor's preferences
Fields
    Social values and expectations

7.2.1 Habitus and gender

Gender inequality mainly happens in the conversion processes, which are affected by habitus and field factors. This section will discuss how male and female students' habitus (institutional habitus and familial habitus) lead to inequalities between them regarding their access to elite doctoral schools (see **Table 7.3** below).

Table 7.3 Habitus and gender inequality regarding elite doctoral school access

	Male	Female	Relevant capability
Expression of aspiration (Familial habitus)	• Less likely to express • Not good at express	• More likely to express • Good at express	Capability to aspire
Household duties (Familial habitus)	• Little duty	• Heavy duty	Capability to be respected
Information behaviour (Familial habitus)	• More information than emotion • Contact with friends	• More emotion than information • Contact with parents	Capability to obtain information
Supervisors' preferences (Institutional habitus)	• Prefered	• Less prefered	Capability to be respected

Familial habitus

This study identified three perspectives through which familial habitus impacts gender inequality regarding elite doctoral school access in China. Firstly, male and female express their aspirations differently. Hart (2013: 79) argued that 'the process of aspiring

can be constructed as an active endeavour undertaken through abstract thinking and developed further through verbal, written or other forms of creative and physical expression'. If initial thoughts and ideas cannot be expressed, they are more difficult to be supported or transferred into real aspirations (Hart, 2013). Similarly, Griffiths et al. (2006: 358) put forward the notion of 'empowerment through voice', which could be used to explain the benefits of sharing aspiring with others. Concerning elite doctoral school access in China, this study found that expression of aspiration was a vital factor for students to develop their capability to aspire, which further confirmed the above scholars' claims.

Regarding the expression of aspiration, this study found that male students were less likely to express their aspirations than female students, putting them in relatively disadvantaged situations regarding doctoral applications. This finding is important because most research on gender equality regarding school access in China and worldwide has only focused on the advantage of men (Sheng, 2014; Reay et al., 2009; Ceballos-Bedoya, 2021; Chauraya, 2014; Aikman and Unterhalter, 2007; Andres and Adamuti-Trache, 2007; Bielby et al., 2014). Few studies have pointed out the potential disadvantage of men over women (Alon and Gelbgiser, 2011; Catherine Riegle-Crumb, 2010; Shoaib and Ullah, 2021).

I found that male students were reluctant to express their PhD aspirations to others because conventional Chinese social norms and gendered image require them to do what they say without failure and be modest before achieving goals. Unlike female students who never worried about the loss of credit due to failure and were willing to seek others for help to realise their aspirations, male students believed that the more uncertain the aspiration is, the more patient and silent the pursuer should be. These ideas prompt them to keep aspirations in their hearts and thus hinder them from hearing other people's advice. While past research has tended to claim that Chinese traditions are restrictive to

women, this study argues that men also face constraints. It should be further noted that the content of the traditional Chinese social norms that limit men and women and how they are limited is different.

Another reason that could explain the fact that female students shared their PhD aspirations with others more was that they were better at or better used to expressing themselves. For female students, expressing aspiration was natural and easy, while for male students, it became challenging and problematic. Furthermore, this study found that male students felt it harder to express themselves firstly because of their innate male dispositions, which endow them with less relevant talent. This finding echoes many other scholars' arguments saying that there is a female advantage concerning verbal ability (Fenson et al., 1994; Eriksson et al., 2002; Toivainen et al., 2017) and communication skill (Wu and McLaughlin, 2012; Berglund et al., 2005). Secondly, the way men do things and communicate with others in China is less likely to enhance their related abilities, which further reinforces their inherent disadvantage.

Secondly, similar to what was argued in the other national contexts, it was noticed in this study that a specific familial habitus, which resulted in the uneven division of household duties, existed in China (Coltrane, 1996; Kimmel and Aronson, 2006; Ruppanner and Maume, 2016). Married women continued to take charge of a large proportion of routine housework and child-caring responsibilities regardless of their social class. However, while economic perspectives were widely applied in the Global North countries to explain this type of inequality, arguing that the spouse with a higher income or occupational position could exchange for less housework, the qualitative data of this study revealed that the Chinese tradition made such a gender gap (England and Farkas, 1986; Boydston, 1990; Procher et al. 2018). Women with privileged educational backgrounds and high-paid jobs, which was often the case in this study, still worked hard to fulfil the expectations of virtuous

wives and responsible mothers and were heavily involved in domestic responsibilities at home.

It seemed that the traditional cultural norm survived the tremendous social changes, such as market-oriented reforms, and has persisted. Nevertheless, there were differences between different regions and cities in China. Some Shanghai families were found to have a unique distribution of household responsibilities, which shaped the slight difference of the FDU from the other four doctoral schools concerning female students' capability to be respected.

Moreover, this study found that women's development of the capability to be respected was restricted by their participation in housework mainly because they suffered from time poverty and negative emotions. This argument echoed the findings of many other studies pointing out that housework is emotionally as well as physically demanding (Stacey, 2005; Brien et al., 2017). Firstly, I claimed that the domestic work took up too much time and energy for married women, making them unlikely to immerse thoroughly in their preparations for PhD applications. Especially in contemporary China, women were expected to take a job on the one hand and do most of the housework on the other hand. This 'double burden' impinged their opportunities to prepare for PhD application, putting them in additionally disadvantaged positions (Sheng, 2018: 150).

In addition, women in this study were more likely to be disturbed by negative emotions such as guilt and self-blame compared with men. The main reason was that the husbands' contribution was generally measured by their career achievement and income in Chinese families, while the wives' role was assessed mainly by their participation in housework. Besides, most mothers were found to have a deep emotional bond with their children because they were the primary provider of child-caring work and passionately committed to their mothers' identities. This emotional bond made it a considerable challenge for them to leave home and pursuit their PhD aspirations.

Thirdly, familial habitus led to gender inequality because of students' information behaviour. This study found that male students were more likely to exchange information with friends during the doctoral application process, while female students tended to share more emotions with parents. This finding was similar to many Global North studies arguing that men often have extensive networks with non-family members such as friends and colleagues, which enable them to perpetuate advantages through information interflow. While women rely more on family-based networks and social supports, their primary role is to help with negative emotions such as upset, loneliness, and depression (Brugha et al., 2005; Tifferet, 2020; Psylla et al., 2017; Maguire et al., 2000, Robeyns, 2002). The evidence of this study indicated that the main reason for this gender difference was the way of thinking, women were somewhat emotional, and men were relatively rational.

As for whom and for what purposes male and female applicants had communicated, I argue that parents, particularly mothers, were the most frequently contacted person for comfort by female students in China. In contrast, male students in China rarely communicate with their parents; some of them even view such communications as scheduled tasks. This situation was partly different from what Reay et al. (2009) had argued, emphasising that parents' involvement was tolerated instead of welcomed by most UK students. The main reason for this discrepancy was that for Chinese female PhD applicants, the primary purpose of communication was to seek emotional comfort, which could be easily achieved through communication with parents. In comparison, Chinese male and British applicants looked more forward to practical advice and exchange of information during their doctoral application process. Under such purposes, communication with parents became less pleasant, given that parents and children tended to think differently because of their different life experiences and concerns. Moreover, it is undeniable that, unlike applications for other levels of education, PhD application was

something only some people would experience. As a result, the relevant information was highly exclusive, making it hard for most parents to provide practical help.

The second type of gender difference was the differences in fathers' and mothers' roles when communicating with their children: I argue that mothers, instead of fathers, were the key to understanding PhD applicant-parent contact in China. This argument was in line with Sheng (2018: 80), who emphasised that the mother 'was nearly always the parent who was most involved in children's schooling and higher education choices, while the father played a distant and broad role on a day-to-day basis'. In addition, the above-discussed fact that communication with parents was more focused on the emotional aspect also led to mothers being more involved than fathers.

Institutional habitus

Apart from familial habitus, institutional habitus, which shaped supervisors' preferences, was also relevant to students' capability to be respected and gender inequality. During the interview, I found that supervisors held 'shared beliefs about traits that are characteristic of' potential applicants based on their gender, which in other words, could be defined as gender stereotypes (Greenwald and Banaji, 1995: 14). Chinese supervisors tended to perceive female applicants as emotional, vulnerable, housework burdened and less energetic and assumed that they were worse than men in terms of logical thinking and arithmetic skills. These gender stereotypes affected supervisors' attitudes and behaviour towards potential applicants, making women less preferred during the PhD application processes. With the same qualifications, the probability of successful application for women would be far less than that of men.

However, despite knowing supervisors' gender preferences, students did not seem to be affected or bothered. This conclusion was inconsistent with the findings of many studies arguing that teachers' stereotypes were likely to be endorsed by students and could result

in their self-deprecation and lack of confidence (Tajfel and Turner, 1986; Beilock et al., 2010; Muntoni and Retelsdorf, 2018). I argue that the main reason for this distinction was that the age and learning stages of the students in this study and other studies were not the same. Unlike other studies which concentrated on the early education stage, this study focused on the doctoral stage when most students were already mature, independent and insightful. Therefore, the participants in this study tended to have a clear understanding of themselves and were less likely to be negatively affected by the stereotypes and preferences of supervisors.

7.2.2 Field and gender

In addition, the social value and expectations, which formed an essential part of this study's field, also led to gender inequality in this study. I found that unlike other levels of education, in which men and women received similar levels of support, opposition to women at the doctoral level had dramatically surged (Merili and Smith, 2002; Sheng, 2018). The main reason for this change was that marriage and family became the critical influencer.

Therefore, the first social value that hindered female students' doctoral school access was gendered marital relationships. In China, it was stressed that wives need to be inferior to husbands in terms of socioeconomic status, educational background, and occupational prestige to maintain a stable and long-lasting marriage. Based on this criterion, women with a PhD degree were at severe disadvantages in the marriage market, which was consistent with the findings of many other studies, emphasising that a Chinese family could not have two powerful and strong-willed people simultaneously, a wise, well-educated woman does not fit the male ideal of an obedient wife (Weeks, 1989; Shen, 1996). Similarly, worries related to age also impeded women's doctoral school access. Men in China prefer to marry someone younger than them. However, doctoral graduates

are inevitably aged. Therefore, it is not easy for women to get a satisfied and happy marriage if they choose to do a PhD.

Moreover, patriarchal perspectives also played a role. It was stressed that marriage for women in China meant leaving their original family and joining another family. Hence, many parents were reluctant to invest in their daughters' PhD education, which they thought was unworthy and unnecessary. Besides, the main task for married women in China was to take care of the family. They were unlikely to be encouraged to pursue self-fulfilment and do things like getting a PhD degree. In contrast, men had gained far more tolerance and understanding. Unlike women, men's value and contribution were measured by diverse factors, allowing their PhD application to become legitimate and be supported by people around them.

Finally, people tended to associate female PhDs with being aggressive, which was inconsistent with Chinese social ideology relating to women's role within the family. Women were expected to follow the rules and not be too adventurous, so even though some were allowed or supported to make doctoral applications, they were often geographically restricted and offered a much narrower range of choices than men.

7.3 Role of agency

The findings of this study suggested that Chinese doctoral students' development of basic capabilities was mobilised under conditions of possibility but was also shaped by individual agency. Hence, the impacts of social class and gender discussed above were insufficient to tell the entire story of privileged economic doctoral school access in China. Otherwise, we could see merely advantaged students in those doctoral schools. Sometimes idiosyncrasies and vagaries of personality, which were ill-explained in Bourdieu's theory but well-explained in Sen's CA, also produced their impacts. The agency, which was termed by Sen (2002: 274) as 'a great ally of development', thus played its role, making

marginalised students' elite doctoral school access possible. This section will discuss how agencies impact the development of their related capabilities (see **Table 7.4** below).

Table 7.4. Agencies and their related capabilities

Type of agency	Relevant capability
Persistence and perseverance	Capability to aspire
Female empowerment	Capability to be respected
Social networking	Capability to establish guanxi
Rational thinking	Capability to obtain information
Self-learning	Capability to acquire knowledge and competency

The first agency I noticed was persistence and perseverance. The data of this study indicated that some successful applicants had faced enormous challenges concerning their development of PhD aspirations, which conformed to McCutcheon and Glowachi-Dudka's (2014: 5) argument that the factors that distinguish successful students from others were 'something other than just barriers'. Persistence and perseverance, defined as the ability to stick to long-term goals and be resilient in the face of barriers, played a vital role here.

Mangan (2012) highlighted that persistence and perseverance were not related to people's Intelligence Quotient (IQ), which was the same as what I had witnessed from the data of this study. Instead, I noticed that previous experiences and students' views on success or failure were relevant. Lepper et al. (1986) and Williams (2014) argued that previous encounters with learning would impact students' self-assessments of their relevant abilities for an extended period. Placing this argument in the context of this study, I found that successful experiences of the CEE and university projects contributed to Chinese students' persistence and perseverance. In addition, optimistic attitudes toward success or failure were critical. Optimism could help students identify what was contemporary and how to make changes, enabling them to thrive under disadvantaged circumstances.

Then, the second capability, the capability to be respected, was closely related to female empowerment, for which education, economic development, and self-awareness mattered. This study found that education sparked female empowerment because it changed thinking, improved analytical skills and helped find methods to take action. This result was in line with Muntoni and Retelsdorf's (2018) finding, emphasising that empowerment is a process that requires recognition, capability building, and action. I argue that through education, women realised the fundamental equality between men and women, their inherent worth, and their ability to live the life they wanted and change society.

Apart from education, economic growth also benefited female empowerment, especially for a country like China that has just emerged from poverty. It freed women from the predicament of survival and allowed them to seek self-worth outside their families. At the same time, women also provided an enormous economic return to society through participating in public life, thus forming a virtuous cycle. In addition, rapid economic development has dealt a heavy blow to the patriarchal concept. More and more young women are stepping forward to break the traditional shackles and pursue their values. The stories of female doctoral students, which was one of the focuses of this study, proved this point.

The final point was self-awareness, which required 'a vigorous model of action in everyday life which puts the ego at its centre, allots and opens up opportunities for action to it' (Beck, 1992, p136). However, this study found that specific psychological costs often accompanied women's development of self-awareness. Thus, how to overcome negative emotions such as anxiety and guilt became the key to solving the problem.

Another factor found in this study that significantly affects students' agency is social networking. Skills associated with it can promote the degree of particularism (shorten social distance) an ego has with resourceful others and facilitate the transmission and diffusion of guanxi across structural boundaries, thereby reversing the disadvantaged

situation for some students. This finding validates Granovetter's (1973) assertion that some people are not confined by primordial social connections; they could reach out to significant alters beyond their close-knit circles. Similarly, Burt (1992) underlines that human social interaction is not limited to direct ties. Through skilful efforts, people can identify 'structural holes' and use them to build relationships with distant others (Burt, 2000).

I noticed that the most common social network scene is extracurricular activities. Nevertheless, it is difficult for most working-class students who need social networks to build effective guanxi to possess the qualifications and skills required by extracurricular activities. In this case, the importance of other factors is reflected, mainly including awareness of the possibilities to establish guanxi with others and attitude towards face. For the former, it can be cultivated through the guidance of parents and teachers. I believe it is worth discussing the latter because, similar to guanxi, face is an indigenous concept with complex meanings and abundant cultural connotations.

During the interview, many students and supervisors mentioned the concept of face, which, according to Lin Yutant (1939: 200), a well-known Chinese scholar, is 'abstract and intangible; it is yet the most delicate standard by which Chinese social intercourse is regulated . . . it is prized above all earthly possessions. It is more powerful than fate and favour, and more respected than the constitution'. Through further analysis, I found that regarding elite doctoral school access, the most crucial concept is losing face, which means being disgraced, humiliated or being made to feel embarrassed before others. Everyone worries about losing face, but the weaker this emotion is, the more beneficial it is to improve their social networking skills. This finding is similar to Chou (1996), who named people's concern about face loss 'protective face orientation' (PFO) and argued that PFO has a hindering effect on people's social networks because people with high PFO tend to be cautious and modest concerning social activities and reluctant to communicate with

331

others. Like Chou, many other scholars also considered PFO a severe barrier preventing people from establishing guanxi with others (Hwang et al., 2003; Leung et al., 2014; Bao et al., 2003; Ardichvili et al., 2006).

Fourthly, this study found that not every applicant had the opportunity to grasp qualified information related to elite doctoral school access in China. For some disadvantaged students, particularly working-class students, rational thinking could compensate for their shortcomings and improve relevant capabilities. The idea of rational thinking was also emphasised by Sen (2010: 8), who argued that 'to understand the world is never a matter of simply recording our immediate perceptions.' Sen (2010: 8) then explained:

> Understanding inescapable involves reasoning. We have to 'read' what we feel and seem to see, and ask what those perceptions indicate and how we may take them into account without being overwhelmed by them.

Like Sen (2010), here, what I mean by rational thinking is the critical assessment of the grounds on which feelings and judgements about collected information are based. It was reasoned thinking of the information instead of unreasoned convictions that helped students develop relevant capabilities.

This study found that rational thinking was crucial in many PhD application scenarios: it was required when interpreting outsider information firstly because much of the official information, one of the most typical types of outsider information, was over-packaged and contentless. This finding was consistent with Reay et al.'s (2009: 140) study, claiming that universities tended to deploy 'traditional iconography which stresses history and academic precedent' and provide 'understated yet illustrious' information for potential applicants to refer to. Before Reay et al., Jamieson (1984: 66) also stressed that universities worked a lot on self-fabrication when providing information to their potential applicants, which was related to the 'nostalgic attempt to regain the missing past'. In addition, another type of outsider information, online information, was also criticised by the participants as being

inaccurate and pessimistic. Under such circumstances, doctoral applicants, particularly working-class ones, should be able to discriminate low-quality information from high-quality ones because they tend to rely more on them.

In addition, rational thinking was also found to be crucial for students who came from families without higher education experiences (disadvantaged familial habitus) or who had attended less-privileged universities for undergraduate or master's studies (disadvantaged institutional habitus). Because of disadvantaged familial and institutional habitus, the information they obtained tended to be negative, making them feel that elite doctoral school access was unsupported by any other evidence and something impossible. Consequently, these students could not 'let the habitus follow natural bent in order to comply with the immanent necessity of the field and satisfy the demands contained within it' (Bourdieu, 1993: 76). Instead, they needed to look rationally at the information in their hand, objectively analyse their situation and seek ways to overcome obstacles.

Finally, similar to the arguments of Bourdieu (1984: 23) and Reay et al. (2009), this study found that some students could inherit initially from family and then from school the cultural capital and cultural habits that are conducive to 'success in terms of formal curriculum and the school's scholastically recognised'. However, not every participant in this study was lucky enough to be academically advantaged. For disadvantaged students without good study habits established at home and an encouraging school learning atmosphere, self-learning was the key to developing the capability to acquire relevant knowledge and competency and accessing elite doctoral schools.

First, self-learning efforts could help students who were not with good study habits established in advance to identify their problems and make necessary changes. According to Bourdieu (1977) and our previous discussions, advantaged students acquired through family upbringing abilities to decipher the school curriculum and be effectively engaged in classroom practices, such as good study habits. As a result, they were more likely to be

defined as clever or talented at an early age. However, this does not mean disadvantaged students have no chance to change their destinies. This study found that some students could notice, through comparing with others, their deficiencies and learn to act in ways consistent with the educational context. This phenomenon explained why we also saw some examples of disadvantaged students who acquire scholastically recognised knowledge and competencies and succeed in their elite doctoral school applications.

Second, self-learning enables students to use school resources, which, to some degree, can compensate for their lack of family-based cultural capital. Bourdieu (1989) identified cultural capital into three categories, cultural capital in the objectified state, cultural capital in the embodied state and cultural capital in the institutionalised state. Among them, the last two types were primarily possessed by middle-class students through inter-generation transformations within the home. It was much less likely for working-class students to obtain and employ them. However, the situation regarding cultural capital in the objectified state was different. Although it was still strongly possessed by middle-class students, the likelihood of its acquisition by working-class students was much higher. Because, unlike the other two types of cultural capital, it also abundantly exists in the context of schools in the form of school resources.

According to Bourdieu (1986: 245), there exists 'an automatic educative effect' generated by presenting cultural goods in the surrounding environment or participating in rich cultural activities. This study also verified the existence of such an effect and found that it could facilitate students' accumulation of cultural capital and, as a result, promote their educational achievements. However, Bourdieu pointed out that typical objectified cultural capital includes books and computers at home, which was relatively inapplicable to the topic and context of this study and out-of-date. I argue that cultural capital closely related to elite doctoral school access primarily exists in the school rather than at home because it involves the highest level of educational enrolment before which most students had stayed

at school for an extended period. This study's identified objectified cultural capital includes concrete cultural goods like school libraries and historical monuments and relatively less tangible but still objectified cultural activities such as school lectures, research programs and social practice.

In addition, it is worth mentioning that school resource utilisation realised through self-learning benefited more working-class students than middle-class students. First, working-class students were likelier to cherish the opportunities they rarely had. The second reason was that working-class students in the same university often have better self-learning abilities because they have undergone more fierce competition. This fact compensates to some extent for inequalities in terms of social class.

Finally, self-learning behaviour is relatively self-centred and thus less influenced by the surrounding environment, allowing students who have participated in non-elite universities to eliminate the adverse effects 'arising from attending a particular educational establishment' like an annoying learning atmosphere and access to elite doctoral schools (Reay et al., 2009: 38). This finding explains why, under the circumstance argued by Bourdieu (1977) that working-class students who participate in working-class schools have a lower likelihood of academic success, some students were still able to enter elite doctoral schools in China.

7.4 Summary

In this chapter, findings related to the second research question were discussed. Informed by the Sen-Bourdieu theoretical framework, I noticed that social class impact students' elite doctoral school access first through the unequal distribution of resources and then through the unequal conversion of resources into capabilities. It places middle-class students in advantaged positions compared to their working-class counterparts. However, regarding the effect of gender, it was merely on the conversion processes. Factors that

favour men and women, as well as the neutral ones, were identified, making it hard to decide which gender is more advantaged. In addition, I found that the agency provided some opposite effects. Due to its existence, some disadvantaged students, although suffering from limitations and constraints, still have a chance of success. Together, these intertwined processes shape the varied success stories of doctoral students in China.

VIII. CONCLUSIONS

School access inequalities have become increasingly important issues for China's HEIs. Remarkably, social class and gender inequalities related to elite doctoral school access remain deeply contested. Regarding school access equality, relevant literature focuses either on the normative evaluation of equalities (Wang, 2011) or their practical explanation (Guo, 2005; Zhang and Tsang, 2012). This thesis argues that the two perspectives are not mutually exclusive and can be mixed by combining Sen's CA with Bourdieu's social reproduction theory. Therefore, the driving force behind this doctorate was to develop the Sen-Bourdieu theoretical framework and utilise it to explore, analyse and comprehend the impacts of social class and gender on elite doctoral school access equality in China.

The overall aims of the thesis were: (1) to develop the Sen-Bourdieu theoretical framework which bridges the gap in current literature: the gap between the normative evaluation and practical explanation of equality; (2) with the help of the Sen-Bourdieu theoretical framework, to contribute original knowledge of how students with different social class and gender backgrounds experience their access to elite doctoral schools differently. This chapter will evaluate the extent to which these aims have been achieved.

This thesis first generated a theoretical framework combining Sen with Bourdieu. Based on it, I addressed two research questions: What are the basic capabilities for students' elite doctoral school access in China? And how do social class and gender impact students' development of basic capabilities? The last three chapters presented and discussed the findings related to these research questions.

In this chapter, I will first outline the thesis's key findings and evaluate their contributions to knowledge. Then, I will apply those findings to create practical suggestions for policy and practice. Finally, I will assess the limitations of this study and highlight recommendations for future research.

8.1 Summary of research findings and contributions to knowledge

This study provides contributions to knowledge on two fronts. First, this study makes a theoretical contribution to the literature on school access equality by combining Sen's CA with Bourdieu's social reproduction theory. The Sen-Bourdieu theoretical framework provides a way to connect the normative evaluation of equality with the practical explanation of it, allowing the research to explore further and comprehend patterns of elite doctoral school access in China.

Secondly, this thesis provides new data and discussions into Chinese students' elite doctoral school access. Despite the growing concern and corresponding research interest in other levels of school access in China, studies concentrating on PhD access and relevant issues of inequalities were highly limited. This study helps to fill this gap by collecting and analysing different types of empirical data that suggest the impact of social class and gender on elite doctoral school access in China. In light of the Sen-Bourdieu theoretical framework, I put forward a basic capability list and investigated students' experiences in developing the identified capabilities, which was found to be impacted by the distribution of resources, the conversion of resources into capabilities and the individual agency.

This section draws together the main arguments of this thesis and evaluates their contributions to knowledge.

8.1.1 Sen-Bourdieu theoretical framework

Much literature in higher education has suggested and documented the impacts of social class and gender on school access equality. However, most of them concentrated either on the normative evaluation of school access equality or their practical explanation. In this study, I argue that both perspectives are vital, and we need a way to combine them. The

theoretical framework linking Sen's CA with Bourdieu's social reproduction theory provides such a way, shaping one of the critical contributions of this study.

The Sen-Bourdieu theoretical framework first suggests using capability as the metric to measure school access equality. This suggestion is novel because most related literature applied other metrics, which I believe problematic, including but not limited to the admission system and policy (Chyi and Zhou, 2014), participation data (Xiang et al., 2022), resource distribution (Liao, 2022) and human relations (Gu and Ming, 2021). Then, to put the metric of capability into practice, I argue that we should put forward a context-specific and purpose-driven capability list. Robeyns' (2003) procedure approach is considered appropriate for generating such a capability list. The final step of the Sen-Bourdieu theoretical framework is to investigate the development of identified capabilities. With this purpose, Bourdieu's notion of capital, habits and fields is first selected. However, noticing that these concepts focus on social reproduction rather than social mobility (Calhoun et al., 1993) and pre-reflective features of human action (Sayer, 2004), I added Sen's notion of agency to provide a comprehensive understanding. The Sen-Bourdieu theoretical framework suggests that capability development involves two steps: distribution of initial resources, which could be comprehended through Bourdieu's notion of capital, and conversion of initial resources into capabilities, which could be understood through Bourdieu's notion of habitus and fields and Sen's concept of agency.

Through the Sen-Bourdieu theoretical framework, I explained how social class and gender impact elite doctoral school access in China. Although Sen's CA and Bourdieu's social reproduction theory have been applied extensively in the educational field to explore equality issues (Broderick, 2018; Terzi, 2008; Silva, 2005), research with their combination has been relatively limited. I believe this study is the first to combine them to investigate school access equality in China. Moreover, I argue that the Sen-Bourdieu theoretical framework, which measures education equality normatively while providing a

339

nuanced and deep picture of what happens behind, can also be applied in other studies for gaining insights into school access issues.

8.1.2 Basic capability list related to elite doctoral school access in China

In light of the Sen-Bourdieu theoretical framework, this research utilised the capability as the metric to measure elite doctoral school access equality in China. However, given that Sen's capability is not a 'fully fleshed out' concept whose further specifications can be diverse (Robeyns, 2003: 70). A basic capability list with a particular focus on Chinese elite doctoral school access was put forward through systematically analysing and discussing the document, focus group and literature data. The capability list includes five capabilities: the capability to aspire, the capability to be respected, the capability to establish guanxi, the capability to obtain information and the capability to acquire knowledge and competency. It helps to address the first research question and understand what is essential for successful elite doctoral school access in China.

It is worth mentioning that the capability list proposed in this thesis is designed specifically for this study and can be applied exclusively to the context of China. In other words, we need different capability lists for other purposes or contexts. However, despite the limitations of the capability list regarding its application, its generation process presented in chapter five shapes one of the crucial contributions of this study. I provide an example of how a capability list can be explicated, discussed and defended through Robeyns' procedure approach: Firstly, I initialled an ideal capability list by unconstrained brainstorming. Then, I collected and analysed empirical data to further identify more capabilities. Finally, all the capabilities, including those in the ideal capability list and those identified from empirical data, were discussed with other capability lists in the literature. The capability list generated through these processes satisfies the five criteria

for selecting the capability list proposed by Robeyns. They can be repeated to generate capability lists for more purposes and contexts in the future.

8.1.3 The impacts of social class and gender on distribution of resources

After identifying the basic capabilities related to elite doctoral school access in China, I explored how social class and gender differentiate students' experiences in developing those capabilities. Semi-structured interviews were conducted and analysed to address this question. Empirical data suggests that social class and gender affect students' capability development experiences first by impacting the distribution of initial resources and then by influencing the conversion of initial resources into relevant capabilities. This suggestion is in line with my assumptions when establishing the Sen-Bourdieu theoretical framework.

Regarding the distribution of initial resources, the findings of this study suggest that it was impacted mainly by social class. Inequalities in the distribution of resources between genders are not evident. To understand how social class leads to unequal resource distribution, I took guidance from Bourdieu's concepts of cultural capital, social capital and economic capital. The data points out that middle-class students enjoy advantaged cultural capital, facilitating their development of doctoral expectations and insider information acquisitions. In addition, their privileged social capital enables them to establish direct guanxi with strong ties to academia. Finally, middle-class students also have more economic capital, which means they can get financial support from their families. All these factors make middle-class students' elite doctoral school access easier than their working-class counterparts, partly explaining the class inequality regarding elite doctoral school access in contemporary China.

8.1.4 The impacts of social class and gender on conversion processes

The Sen-Bourdieu theoretical framework stresses that students' acquisition of initial resources is only part of a more complex capability development process. Another important thing is to convert the initial resources into relevant capabilities (Sen, 1999; Nussbaum 2000), for which social class and gender differences were identified in this research. Bourdieu's notion of habitus (familial habitus and institutional habitus) and fields provides valuable perspectives on interpreting how social class and gender impact the conversion processes.

This study's empirical data identifies several positive conversion factors for middle-class students. Some of them are the result of their advantaged familial habitus. For example, middle-class students are more eager to maintain or surpass their social status due to their familial habitus. They can also better utilise their possessed guanxi to obtain information and even generate influence on doctoral admission. In addition, their good study habits help with their success. Apart from familial habitus, institutional habitus also makes things different. With privileged institutional habitus, middle-class students enjoy more school support, reinforcing their advantaged family support. Moreover, they are more likely to attend schools with a good learning atmosphere and high reputation. Finally, this study found that middle-class students have a more heightened sense of certainty towards elite doctoral access; they consider their application success something natural and certain. Generally speaking, in addition to resource distribution, middle-class students were advantaged concerning conversion processes, making their access to elite doctoral schools much more effortless and straightforward.

Comparatively speaking, the impacts of gender on conversion processes are more complicated. Three types of factors were identified in this study: favourable factors for male students, favourable factors for female students and neutral factors. The findings of this study suggest that male students take on fewer household duties and are more likely

to be preferred by supervisors, placing them into advantaged positions regarding elite doctoral school access. In addition, the traditional social values and expectations of men in China make them further advantaged. Meanwhile, I also noticed that female students are more likely to share their aspirations with others; this fact benefited their doctoral access. Also, this study found that male and female students have different information behavioural patterns, and each pattern had its advantages and disadvantages. Given that the factors in this study were not weighed, it is hard to tell who is more advantaged between male and female students regarding conversion processes.

8.1.5 Different stories behind elite doctoral school access in China

For the two main processes of capability development: resource distribution and resource conversion, social class impacts both, while gender impacts the latter. All these impacts, which result in providing specific ways of thinking and doing under certain circumstances, belong to the structural impacts (Bourdieu, 1990). Nevertheless, I went beyond these impacts in this study and explored the agency's role to gain a deeper comprehension of the elite doctoral school access in China. Sen's CA, which emphasises individuals, their freedom and choices, made its contribution here (Stewart, 2005).

This thesis identifies and discusses agency factors that can help disadvantaged students overcome structural barriers and develop capabilities. These factors included persistence and perseverance, female empowerment, social networking, rational thinking and self-learning. Their existence generated positive conversion processes and explained that although some students were in disadvantaged positions regarding the doctoral application, we could still see their success. When structuring the Sen-Bourdieu theoretical framework, I argue that agency mainly influences the conversion processes. The empirical data later confirmed this argument.

In general, elite doctoral school access is a complex process driven by structural and agency factors. Consequently, behind the seemingly similar success lies different stories. Some students' elite doctoral school access was accompanied by unseen hardships and challenges, while others were easy and smooth. This phenomenon is worth pondering and discussing.

8.2 Implications for practice and policy

An advantage of the Sen-Bourdieu theoretical framework developed in this study is that it combines the normative evaluation of equality with the practical explanation of it. It can help its users to measure equality while understanding its mechanism. In this study, I identified the problems of the prevailing metrics and advocated for using the capability to measure equality. Here I want to stress that the capability metric can not only be used for academic purposes but also for practical and political purposes. Students' capabilities should be considered whenever questions of school access equality are addressed.

In this study, I put forward a basic capability list of elite doctoral school access in China. The methods related to its generation were clearly stated, aiming to provide a reference for generating more capability lists in the future. We need different capability lists for different purposes. However, the rules to generate them are the same. Educators and policymakers could follow what was done in this study to develop their own capability lists. Moreover, the capability list creation processes itself, which involves public deliberation, is the process of advancing justice and equality (Sen, 1990). As far as people's voices are heard, we improve our societies.

As for how to deal with the capabilities in the capability list, I argue that we should explore students' experiences related to their development. This argument provides new ideas for relevant people. In addition to who has the opportunity to develop capabilities, their development experiences are also crucial. We should focus on the more insidious, less

visible inequalities, where some people seem successful but experience unrecognised difficulties. For educators and policymakers, how to create an education system where not only everyone has the opportunity to succeed but also the hardship behind their success is similar is a question worth considering.

This study indicates that students' capability development involves two processes: resource distribution and resource conversion. Some people's disadvantages are caused not by the lack of resources but by the lack of chances to convert resources into capabilities. For educators and policymakers, I suggest they should think further than resource allocation and create an equal and unrestricted environment so everyone's resources can be freely converted. In addition, I advocate for the distinction between inequalities caused by resource distribution and those caused by the conversion processes. For different types of inequalities, we should have different solutions.

Moreover, I identified different factors related to elite doctoral school access in China; some are structural factors that contribute to social stratification, while others are agency factors which lead to social mobility. Policy decisions regarding doctoral admission in China should try to suppress the emergence and development of factors that cause social reproduction and encourage factors that can result in social mobility. These two efforts can jointly promote doctoral school access equality in China.

8.3 Limitations and suggestions for future research

One of the primary contributions of this study was that it provided a missing link between the normative evaluation and the practical explanation of school access equality. To achieve this, I put forward a Sen-Bourdieu theoretical framework. At first, an argument has been made for the feasibility and importance of utilising capability as a metric to measure school access equality. Student's potential to achieve rather than real achievements became the central concern of this study. Then, to link the capability metric to the topic of

social class and gender equality, I chose between evaluating the distribution of capabilities among different social groups and the development of capabilities experiences by students with different social backgrounds. The former emphasises outcome equality, while the latter pays more attention to process equality. Based on my understanding of the CA, I believe that Sen stressed process equality more, so I chose the latter. A group of successful doctoral applicants were then selected to ensure that the outcome was controlled and the process could be compared. To better evaluate the impacts of social class and gender, the participants contained an equal number of male and female and working-class and middle-class students. Finally, Both Bourdieu's social reproduction theory and Sen's CA were utilised to interpret the participants' capability development experiences, providing an insight into what happened in the processes of elite doctoral school access in China and the impacts of social class and gender on these processes. I want to highlight that the theoretical framework utilised in this study was replicable but still preliminary. More efforts can be made to test and improve it.

Secondly, recognising the complex and sophisticated nature of elite doctoral school access in China, this study concerned both structure and agency when comprehending students' development of basic capabilities. On the one hand, Bourdieu's social reproduction theory helped explain the structurally anchored probabilities of achieving one's goals; both structure in the material form (explained through the notion of capital) and structure in the non-material form (explained through the concepts of habitus and fields) were emphasised. On the other hand, Sen's (1999: 281) CA supported interpreting the agency's role, stressing his idea of 'the public as an active participant in change, rather than as a passive and docile recipient of instructions of dispensed assistance'. The findings of this study suggested that Bourdieu and Sen's notions were not entirely deterministic and exclusive to each other. Factors that led to social mobility and factors

346

that led to social reproduction existed simultaneously to constitute students' diverse experiences.

In this study, I identified seventeen structural factors and five agency factors related to Chinese students' development of basic capabilities. Combined with the fact that the participants of this study constituted an equal number of male and female and working-class and middle-class students, I concluded that there seemed to exist more substantial power of social reproduction than social mobility. This conclusion echoed the phenomenon that in real life, there were more men than women and middle-class than working-class students in elite economic doctoral schools in China. In this way, this study provided glimpses of the processes underpinning unequal statistics. However, it is worth noting that this conclusion was based on the premise that all identified factors were equally weighted, which led to a possible limitation of this study. Since this study was qualitative and based on small samples, it could not accurately measure each factor's weight. Therefore, I suggest that future research can combine quantitative methods to rank and weigh the effects of various factors and obtain more precise conclusions. Another limitation of this study was that the identified factors were discussed individually—questions such as whether different factors interplay with each other and how these processes happened were neglected. Further research could pay more attention to the relationship between diverse factors for a more in-depth understanding of the capability development processes.

Thirdly, to put the metric of capability into practice, a basic capability list relevant to students' elite economic doctoral school access in China was generated. This basic capability list was a working capability list specific to the topic of this study. Moreover, due to its context-specific feature, this capability list cannot be used directly in studies conducted elsewhere. In other words, the basic capability list put forward in this study has low generality, shaping a potential limitation of this study. Nevertheless, I argue that the

method by which the basic capability list came to be produced is as important as the list's contents. Regarding the method, the basic capability list was derived through data from various sources, including documents, relevant people's voices and literature. A democratic deliberative process was involved following Sen's suggestion. However, what had been done in this study was far from enough. More public deliberation was suggested to be conducted in the future to revise and improve the basic capability list we have now. Voices of other people, such as unsuccessful applicants, parents and policy-makers, should also be heard.

Fourthly, in synthesising the thinking of Sen and Bourdieu, both issues of social class and gender equality were dealt with in this study. Regarding social class equality, I first explored the distinctions between working-class and middle-class students' elite doctoral school access experiences. In addition to such inter-class differences, intra-class discrepancies, which stressed the internal differentiation within a particular social class, were concerned. However, this study paid much more attention to the former (inter-class differences) among the two types of differences. As for the latter (intra-class discrepancies), merely different fractions within the middle class were explored. Therefore, I suggest that future research could explore more intra-class discrepancies, particularly those within the working class. In addition, another potential limitation is that this study employed merely parents' occupational status to distinguish students' social classes. Although there was evidence that other factors, such as education and income, were closely related to occupational status in China, such a way of distinction was still too simplistic. Future research could consider introducing more parameters to determine students' social class. Regarding gender equality, although most of the content discussed the advantages of men over women, some factors that were more favourable to women were also identified in this study. Although the number of these factors was small, I consider them a good start to see gender issues more comprehensively. When we

mention gender inequality, we should think not only of the plight of women but also of the challenges faced by men.

Fifthly, this study has provided some evidence corroborating the presumption that although born elsewhere, Sen and Bourdieu's theories can be placed in the context of China. The premise of this was not to treat those Global North theories as immutable but to consider them reworkable. Firstly, to rework Sen's CA and make it more appropriate in the Chinese context, I combined various forms of data to put forward a context-specific basic capability list. Secondly, cultural specificity was highlighted when interpreting students' capability development processes to rework Bourdieu's social reproduction theory. Both Chinese-style capitals, like guanxi and Chinese-style habitus, like paternalism and masculinity, were discussed, adding Chinese characteristics to Bourdieu's notions. I suggest that future research could try to figure out more ways to contextualise Sen and Bourdieu's theories in China.

Finally, this study explored merely doctoral-level education in the economics discipline. While this study outlined several basic capabilities and factors related to the development of these capabilities, the results may be different when it comes to other levels of education or other disciplines. Moreover, what was discussed in this thesis was still far from entirely comprehensive. Even regarding elite economic doctoral school access in China, there may also be more details to be added, leaving fertile territory for future research.

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APPENDICES

Appendix 1: Dual-credential system in China

Graduation certificates are given when students complete the educational programs. There are four types of higher education graduation certificates in China:

- Zhuanke Graduation Certificates (usually obtained when students finish higher specialised/vocational/technical education)

- Benke Graduation Certificates (usually obtained when students finish undergraduate study)

- Master's Graduation Certificates (usually obtained after finishing master's education)

- Doctoral Graduation Certificates (usually obtained after doctoral education)

These graduation certificates could provide access to both further education and employment. Traditionally, most Chinese employers require qualifications alone when recruiting graduates, especially those at undergraduate and master levels. However, in recent years, with the expansion of higher education, recruitment requirements have been increasing. Some high-paying and high-benefit jobs require applicants to hold a degree. In terms of further education, Benke Graduation Certificates is accepted on par with a bachelor's degree when students' apply for master's programs. However, although it is possible, it is unusual, as admission into master's programs is highly competitive in China, even for bachelor degree holders. Likewise, master's degrees are also not necessary for doctoral school access.

Academic degree certificates represent certain levels of academic achievement in China. They are separate certificates from Graduation Certificates[24]. Like many other countries in Asia, China constructed its academic degree system based on the Global North ideas and traditions. In 1980, the central government published a regulation,

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[24] Between 1985 and 1992, the Benke Graduation Certificate was combined with the Bachelor Degree Certificate in China.

namely 'Regulations of the People's Republic of China on Academic Degrees'. Since then, universities have adopted a three-hierarchy degree system, namely bachelor's degree, master's degree and doctoral degree, and the dual-credential system was born in China. The number of students related to each type of degree in 2020 is listed in the **Table** below.

Table. Number of students related to each type of degree in 2020 in China

		Graduates	Enrolments
Postgraduates	Doctoral degree	66,176	466,549
	Master's degree	662,451	2,673,049
Undergraduates	Bachelor's degree in regular HEIs	4,205,097	18,257,460
	Bachelor's degree in adult HEIs	1,226,385	4,051,025
	Online bachelor's degree	886,120	3,111,899
Source: ASEM Education Secretariat, 2021			

A bachelor's degree (xueshi xuewei) in China is obtained through undergraduate education, usually lasts four years. Undergraduate education can be divided into undergraduate education in regular HEIs, undergraduate education in adult HEIs and online undergraduate education. Bachelor's degree is the only type of degree that is based on the same-level qualifications. People could only get bachelor's degrees when they have Benke Graduation Certificates. In regular HEIs, around 90% of the graduates receive bachelor's degrees in 2013. However, in adult HEIs, only 20%-30% of the graduates could obtain bachelor's degrees (China Credentials Verification, 2013).

Master's studies (shuoshi xuewei) in China usually take two to three years and can be divided into two types: course-based and research-based. It is possible (but unusual) for students to get Master's Graduation Certificates but fail to get master's degree due to their poor performances. Candidates for a master degree could not be older than 35 years old. Apart from undergraduate graduates with bachelor's degrees, graduates of higher specialised/vocational/technical education with several years' work experience

who had passed the National Test for Self-Taught Students and a few other exams (although without the bachelor's degree) are also entitled to apply for and be awarded bachelor's degrees in China. However, students without Benke Graduation Certificate is unacceptable for the application of master's programs.

The doctoral degree is the highest academic degree awarded in China. Studies related to it usually last four to five years, varying by program. In recent years, some doctoral schools have limited the duration of doctoral study to six years, and students who exceed the deadline must apply for an extension to continue their studies. There were three doctoral programs in China, nearly all of which were provided by public HEIs. Although around one-third of Chinese HEIs were private, they were not research-oriented and qualified to grant doctoral degrees.

Appendix 2: List of reviewed literature

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Abbas (2007)	To explore the ways in which different South Asian groups achieve entry into the selective education system, taking into consideration the factors of social class, ethnicity and culture.	N/A	Structure (Bourdieu)	Social class and racial equality	UK	Primary level
Acevedo-Gil and Zerquera (2016)	Draw on diverse students' experiences with access, support, and long-term success within community colleges.	N/A	Students' perception and experience	Social class and racial equality	USA	Third level
Addi-Raccah and Israelashvili (2014)	Explore the utility of outreach programmes and the ways to improve them.	Admission system and policy	N/A	Social class equality	Israel	Third level
Adeyemi (2001)	To critically examine the desirability of the catchment area policy in the admission process in Nigeria and to analyse the implementation implications of catchment factor as one of the criteria used in the admission process Nigerian Universities.	Admission system and policy	N/A	N/A	Nigeria	Third level
Adnett et al. (2011)	Analyse the results of research that reviewed the progress that English higher education institutions had made in implementing the Schwartz recommendations and assess whether a more interventionist stance is required to achieve 'fair admissions'.	Admission system and policy	N/A	N/A	UK	Third level
Alon (2009)	Develops a comprehensive theoretical framework regarding the evolution of the class divide in postsecondary education.	Participation data	N/A	Social class equality	USA	Third level
Amaral and Magalhaes (2009)	Examines the access policies in Portuguese higher education, from the 1974 revolution to the present.	Admission system and policy	N/A	N/A	Portugal	Third level
Anderson (2015)	Examines the historical relationship between political power and the pursuit of education and social equality.	Human relation	N/A	N/A	USA	N/A

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Andres and Adamuti-Trache (2007)	Examine Canada data on university undergraduate enrolment and gradation rates by employing field-specific indices of association that measure the under or overrepresentation of women in a particular field relative to the gender composition in all fields.	Participation data	N/A	Gender equality	Canada	Third level
Ansong et al. (2018)	To examine the spatial patterns of gender inequality in junior high school enrollment and the educational resource investments associated with the spatial trends.	Resource distribution	N/A	Gender and spatial equality	Ghana	Secondary level
Anyanwu (2016)	Empirically study the key drivers of gender equality in secondary education enrollment in Africa.	Participation data	N/A	Gender equality	Africa	Secondary level
Arcidiacono et al. (2022)	Examine how Asian American applicants are treated relative to similarly situated white applicants.	Human relation	N/A	Racial equality	USA	Third level
Auðardóttir and Kosunen (2020)	To explore the social and ethnic background of pupils admitted to private schools at the compulsory level in Iceland so as to identify possible social class segregation between public and private schools.	N/A	Structure (Bourdieu)	Social class equality	Iceland	Primary and secondary level
Azam and Kingdon (2013)	Explore pro-male gender bias within-household allocation of educational expenditure.	Resource distribution	N/A	Gender equality	India	Secondary level
Baker and Bastedo (2022)	Simulate potential lottery effects on student enrollment by race, gender, and income.	Admission system and policy	N/A	Social class, race and gender equality	USA	Third level
Ball et al. (1996)	To explore why choice in education is systematically related to social class differences and the reproduction of class inequalities.	N/A	Structure (Bourdieu)	Social class equality	UK	N/A
Banks et al. (2015)	Examine the system of special educational needs funding in Ireland during a period of policy change.	Resource distribution	N/A	Disability equality	Ireland	Primary and secondary level
Bar-Haim and Blank (2019)	Focus on Israelis who failed to gain a matriculation diploma at their high school graduation and contemplate on the effects that ethnic differences between them play on their chances to enter higher education.	Participation data	N/A	Racial equality	Israel	Third level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Bathmaker (2015)	Use Bourdieu's concept of 'field' as a tool to examine higher education participation in England in the context of diversified and differentiated provision.	N/A	Structure (Bourdieu)	Social class equality	UK	Third level
Batool and Liu (2021)	Quantify the impact of socio-economic indicators and underlying situations on students' enrollment in higher education in Pakistan.	Participation data	N/A	Social class equality	Pakistan	Third level
Bersola et al. (2014)	Investigate how admitted doctoral students choose an institution and whether the predictors of enrollment vary between underrepresented minority (URM) and non-URM domestic students.	N/A	Students' perception and experience	Racial equality	USA	Doctoral level
Boliver (2011)	Test the predictions of the MMI and EMI hypotheses against empirical data for the case of Britain where higher education expanded dramatically during the 1960s and again during the early 1990s.	Participation data	N/A	Social class equality	UK	Third level
Boterman (2022)	To understand the changing school choice dynamics in gentrifying Amsterdam.	N/A	Structure	Social class equality	Netherlands	Primary level
Bourabain et al. (2020)	Investigate ethnic- and class-discrimination in the enrolment to kindergarten.	Human relation	N/A	Social class and racial equality	Belgium	Pre-primary level
Brink et al. (2010)	Provide insight into the multiple ways in which the notions of transparency and accountability are put into practice in academic recruitment and selection, and how this has enhanced — or hindered — gender equality.	Admission system and policy (transparency and accountability)	N/A	Gender equality	Netherlands	N/A
Broderick (2018)	Whether the capability approach can offer new insights into the vision of educational equality contained in the Convention and how that vision can be implemented at the national level.	Capability	N/A	Disability equality	N/A	N/A
Brown and Stent (1975)	Provide a comprehensive picture of Blacks enroled in graduate and professional schools.	Participation data (enrolment rate)	N/A	Racial equality	USA	Graduate level
Burge and Beutel (2018)	How different types of high school romantic involvement are associated with women's and men's patterns of college enrollment.	Participation data	N/A	Gender equality	USA	Third level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Bush and Heystek (2003)	Exam the early experience of the school governing bodies established in South Africa following the 1996 South African Schools Act.	Admission system and policy	N/A	Social class and racial equality	South Africa	N/A
Byrne and De Tona (2012)	Examine the experience of migrants in navigating the education system, and in particular in choosing secondary schools for their children.	N/A	Other people's perception and experience	Racial equality	UK	Secondary level
Byrom (2009)	Explore the influence and nature of pre-university interventions on students' choice of institution.	N/A	Structure (Bourdieu)	Social class equality	UK	Third level
Cahill and Hall (2014)	Examine post-primary school choice processes in the urban Irish working-class community of Portown.	N/A	Structure	Social class equality	Iran	Secondary level
Calitz (2019)	How universities, in partnership with their students, are needed to transform the South Africa higher education system so that it helps lack and colored students, who are currently let down, to succeed.	Capability	N/A	Racial equality	South Africa	Undergraduate level
Cameron (2012)	Use Sen's capability approach to argue that improving deliberative processes is relevant for the well-being of girls and women of all ages.	Capability	N/A	Gender equality	N/A	N/A
Carrasco et al. (2021)	Analyse quantitative and ethnographic data on parents' school choice from Chile.	N/A	Structure (Bourdieu)	Social class equality	Chile	N/A
Chai and Weseley (2017)	Whether people view Asian Americans as 'model minorities' who excel in math, science and music?	Human relation	N/A	Racial equality	USA	Third level
Chan (2020)	Whether bilingual preschool policies can induce enrollment and close achievement gaps between English learners and English speakers is particularly important today for urban cities and states with large immigrant populations.	Admission system and policy	N/A	Racial equality	USA	Pre-primary level
Chauraya (2014)	Critically survey the experiences of the departmental chairpersons and students who enrolled through affirmative action, their vision of gender equality and the impact thereof on the inclusion of the said students in the mainstream.	N/A	Students' perception and experience	Gender equality	Zimbabwe	Third level
Chiu (2018)	To investigate whether Taiwan's "Stars Policy" for university admission can fulfill its major aim to promote educational equity.	Admission system and policy	N/A	N/A	China	Third level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Chyi and Zhou (2014)	Estimate the effects of three sequential reforms undertaken between 2000 and 2006 on school enrollment for poor, rural families in China.	Admission system and policy	N/A	Social class and spatial equality	China	Primary and secondary level
Cin (2017)	How different understandings of gender, equality and education generate a variety of approaches with which to pursue gender equality in education.	Capability	N/A	Gender equality	N/A	N/A
Cin and Walker (2016)	Argue for the importance of capabilities in girls' education to offer a substantive understanding of gender equality beyond numerical gender parity.	Capability	N/A	Gender equality	Turkey	N/A
Cin et al. (2020)	To scrutinise the latest education reform and education policies in Turkey from a capabilities-based gender equality perspective.	Capability	N/A	Gender equality	Turkey	Primary and secondary level
Coelli (2009)	Investigate the relationship between tuition fee changes and the university enrolment of youth by parental income group in Canada.	Participation data	N/A	Social class equality	Canada	Third level
Cole (1986)	Test the specific hypothesis that medical school admissions committees discriminated against women: from 1929 to the present time, women applicants to medical school had just as good a chance of being accepted as men applicants.	Human relation	N/A	Gender equality	USA	Third level
Conger (2015)	Focus on the role played by admissions policies that base decisions solely on applicants' high school grades.	Admission system and policy	N/A	Gender equality	USA	Third level
Connolly (2013)	To evaluate whether using equality law in Britain as part of a social mobility agenda is justifiable, especially in education.	Admission system and policy (equality law)	N/A	Social class equality	UK	N/A
Contini and Scagni (2010)	To evaluate the overall effect of social origins on secondary school track enrolment.	Participation data	N/A	Social class equality	Italy, Germany, Netherlands	Secondary level
Costa Filho and Rocha (2022)	Investigate how meanings ascribed to education influence lower-income parents on investing (or not) in their children's education, and how this in turn influences family expenditures and consumption priorities.	N/A	Structure (Bourdieu)	Social class equality	Brazil	Secondary level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Courtois (2017)	Provides the first extensive sociological study of elite education in Ireland.	N/A	Structure	Social class equality	Ireland	N/A
Cristián Bellei et al. (2020)	Explore the reasons, motives and meanings associated with school choice among Chilean upper-class families.	N/A	Structure	Social class equality	Chile	Primary and secondary level
Curtin and Egan (2021)	Examine the Special Education Teacher Allocation Model (SETAM) (Circular 0013/2017 Department of Education and Skills 2017) as the current model to support inclusion in practice in Irish primary schools.	Resource distribution	N/A	Disability equality	Ireland	Primary level
Czarnecki (2018)	Investigate the consequences of an expansion of domestic university places in Australia after 2009 for inequalities in access to tertiary education.	Participation data	N/A	Social class equality	Australia	Third level
Dai et al. (2019)	To develop a model to optimize student allocation and thus improve the spatial equality of educational opportunity.	Resource distribution	N/A	Spatial equality	China	Primary level
De Freitas et al. (2021)	Explore experiences of aspiring physicians from LIB in Canada who are working towards medical school admission.	N/A	Students' perception and experience	Social class equality	Canada	Third level
Debs and Cheung (2021)	How parent's interactions with school choice systems reinforce some parent's privileges leading to structure-reinforced privilege.	N/A	Structure	Social class equality	Singapore	Primary level
Delavallade et al. (2021)	Document the effectiveness of a multifaceted educational program.	Participation data	N/A	Gender equality	India	Primary level
Dorius (2013)	Document long-run trends in between-country education equality.	Participation data	N/A	N/A	N/A	N/A
El-Saadani and Metwally (2019)	Provide a profile of youth with a disability, and examines the impact of disability among youth on their school enrollment.	Participation data	N/A	Disability equality	Egypt	Primary level
Engberg and Wolniak (2014)	Examine the influence of the high school socioeconomic context on students' decisions to attend two- and four-year postsecondary institutions.	Resource distribution	N/A	Social class equality	USA	Third level
Ertas and Roch (2014)	Whether charter schools are less likely to serve disadvantaged students.	Participation data	N/A	Social class equality	USA	Primary and secondary level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Espinoza (2008)	Examine the impact produced by higher education financing policies in Chile during the Pinochet (1973-1990), the Aylwin (1990-1994) and the Frei (1994-2000) administrations.	Participation data (enrolment percentage)	N/A	Social class equality	Chile	Third level
Espinoza (2012)	Describe working-class minority students' routes to higher education.	N/A	Structure (Bourdieu)	Social class and racial equality	USA	Third level
Esposito and Villaseñor (2018)	How school enrolment is associated with wealth inequality and with the educational environment the child is exposed to at the household and municipal levels.	Resource distribution	N/A	Social class equality	Mexico	Primary and secondary level
Esposito and Villaseñor (2019)	Provide solid evidence of relative deprivation as being a negative correlate of school enrolment in Mexico, absolute standard of living being controlled for.	Human relation	N/A	Social class equality	Mexico	Primary and secondary level
Evans (2021)	Examine the school choices of white middle class parents who live in a large Northeastern city.	N/A	Structure	Racial equality	USA	Primary and secondary level
Gabay-Egozi (2016)	Pull together insights on social class and geography to explore how parents choose schools differently for their children in a unique Israeli setting.	N/A	Other people's perception and experience	Social class and spatial equality	Israel	N/A
Gao and Ng (2017)	Disaggregates the interplay among various types of capital as well as the multiplicative capital effects on enrolment.	N/A	Structure	Social class equality	China	Third level
Ghuman and Lloyd (2010)	How teacher absence differentially affects access to schooling among girls enrolled in government girls' schools as compared to pupils enrolled in boys' school or in coeducational private schools.	Participation data (attendance rate)	N/A	Gender equality	Pakistan	Primary level
Golden (2021)	Assess the impact of the throughput-based model.	Resource distribution	N/A	Disability equality	Germany	Primary and secondary level
Gore (2021)	Theorize disadvantage using the capabilities approach and argues for a more nuanced definition of disadvantage by exploring the opportunities, agency and achievements available to students in universities.	Capability	N/A	Gender equality	South Africa	Third level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Gu and Ming (2021)	Examine the relationship between the social discrimination experienced at high school and college enrollment.	Human relation	N/A	Social class equality	China	Third level
Gu and Ozturk (2016)	To investigate the relationship between gender gap in school enrollment and the spread of information and communication technology in rural China.	Resource distribution	N/A	Gender equality	China	Primary and secondary level
Hallsten (2011)	Investigate the relation between economic inequality and the decision to take up studies at the tertiary level late in life.	Participation data	N/A	Social class equality	Sweden	Third level
Hannum (2003)	Were children in poorer families or girls affected differently by village resources?	Resource distribution	N/A	Social class and gender equality	China	Primary and secondary level
Hanson (2017)	To test for race and gender discrimination among college admissions counselors in the student information gathering stage.	Human relation	N/A	Racial and gender equality	USA	Third level
Hardy (2017)	To assess the potential impact of two performance measures on equality of access to a general education for all school students.	Admission system and policy	N/A	N/A	UK	Primary level
Hill (2008)	Reconsidered school effects on college enrollment by focusing on strategies that schools use to facilitate college transitions.	N/A	Structure	Social class and racial equality	USA	Third level
Hill and Lai (2016)	Explore how social class is linguistically negotiated and contested in parental narratives of school choice in the British education marketplace.	N/A	Structure (Bourdieu)	Social class equality	UK	Primary level
Himaz (2010)	To explain why a household-level gender bias exists in the allocation of education expenditure.	Resource distribution	N/A	Gender equality	Sri Lanka	Primary, secondary and third level
Holme (2002)	How parents who can afford to buy homes in areas known "for the schools" approach school choice in an effort to illuminate how the "unofficial" choice market works.	N/A	Structure	Social class equality	USA	N/A
Hsueh et al. (2021)	To explore differences in the clinical psychology PhD program admissions experience (i.e., interviewing and decision-making) by race/ethnicity and lesbian, gay, bisexual, transgender, and queer (LGBTQ) identity.	N/A	Students' perception and experience	Racial and gender equality	USA	Doctoral level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Husen (1976)	Whether in a mass system of higher education one would have to consider a dual admissions procedure to preserve the academic 'core system'.	Human relation	N/A	N/A	N/A	Third level
Ilie and Rose (2016)	Highlight the long distance still to travel to achieve the goal of equal access to higher education for all.	Participation data	N/A	Gender equality	South Asia and sub-Saharan Africa	Third level
Isaac and Pruitt (1985)	Identify points where discrimination exists in the recruitment-admission-retention process and suggests measures for reducing the differentiation.	Human relation	N/A	Racial equality	USA	Graduate level
Isopahk ala-Bouret (2019)	Address policy aims to reconcile equality of opportunity and marketization by examining difficulties in access to Finnish higher education.	Admission system and policy	N/A	N/A	Finland	Third level
Janus et al. (2007)	Parents of children with special needs's transition to school experience.	N/A	Other people's perception and experience	Disability equality	USA and Canada	Primary level
Jayley Janssen et al. (2022)	Whether racial discrimination restricts ethnic–racial minority access to high-achieving STEM schools.	Human relation	N/A	Racial equality	USA	Secondary level
Kamesh wara and Shukla (2017)	To examine and relocate gender equality in higher education using Capability Approach as the background frame.	Capability	N/A	Gender equality	India	Third level
Kershnar (2007)	Discuss race-sensitive admission rules.	Admission system and policy	N/A	Racial equality	USA	Third level
Khairudd in et al. (2018)	To examine the access experiences of two deaf adults and four primary age deaf learners in the light of the United Nations Convention on the Rights of Persons with Disabilities.	N/A	Students' perception and experience	Disability equality	Malaysi a	Primary level
Knudson (2021)	To explore the experiences of middle-class African American parents who have enrolled their children in a central-city public school district and the factors that inform and contribute to their school enrollment decisions.	N/A	Other people's perception and experience	Social class and racial equality	USA	Primary and secondary level
Korpers hoek et al. (2012)	To unravel the relations among gender, personality, and students' subject choices.	Participation data	N/A	Gender equality	USA	Secondary level

414

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Kosunen and Seppänen (2015)	Examine parental choice in the context of lower secondary school in Finland.	N/A	Structure (Bourdieu)	Social class equality	Finland	Secondary level
Laajaj et al. (2022)	How the opportunity to receive the scholarship, influenced the performance of low-income students in the national high-school exit and 9th grade exams, and their university enrollment rates.	Resource distribution	N/A	Social class equality	Colombia	Third level
Landaud et al. (2020)	Explore gender gap in the choice of field of study.	Participation data	N/A	Gender equality	France	Secondary level
Lareau et al. (2016)	Examine how the field shapes parents' efforts to transmit advantages to their children through accessing high-status elementary schools.	N/A	Structure (Bourdieu)	Social class equality	USA	Primary level
Lavy and Sand (2018)	Estimate the effect of primary school teachers' gender biases on boys' and girls' academic achievements during middle and high school and on the choice of advanced level courses in math and sciences during high school in Tel-Aviv, Israel.	Human relation	N/A	Gender equality	Israel	Secondary level
Lee (2014)	Examines the relationship between industrialization and school enrollments of both genders in China and seeks to provide richer insights into the factors associating with the decrease in educational gender inequality in China.	Participation data	N/A	Gender equality	China	Primary and secondary level
Li et al. (2014)	Whether the expansion of distance higher education will improve educational equality among different regions.	Participation data	N/A	Spatial equality	China	Third level
Liao (2020)	Propose a spatial optimization model to take these two factors into account into proximity-based school assignment system.	Resource distribution	N/A	Spatial equality	China	Primary level
Lim (2020)	To produce an innovative interpretation of the Least Restrictive Environment (LRE) provision in the Individuals with Disabilities Education Act (2004) to secure inclusive education for children with disabilities using the capabilities approach to a theory of justice.	Capability	N/A	Disability equality	N/A	Primary level
Liu (2012)	Analyse the influence of cultural values on policies and policy processes.	Admission system and policy	N/A	N/A	China	Third level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Liu et al. (2019)	Investigate the influences of families' socioeconomic status on students' educational achievement in China with regard to the National College Entrance Exam (NCEE) scores and subsequent college enrolment.	N/A	Structure	Gender equality	China	Third level
Lockman (2022)	Explore student experiences in application to U.S. medical schools.	N/A	Students' perception and experience	Gender equality	USA	Undergraduate level
Loots and Walker (2015)	Explore the potential of the capabilities approach (CA) to inform policy formation and argue for the development of a policy for higher education institutions based on opportunities for valuable functionings as the informational basis for gender equality.	Capability	N/A	Gender equality	South Africa	Third level
Luo et al. (2021)	Test the effectively maintained inequality (EMI) theory against the case of gender equality in China.	Participation data	N/A	Gender equality	China	Third level
Mahmood et al. (2017)	The role of female headship on primary school access equality.	Participation data	N/A	Social class equality	Pakistan	Primary level
Maila and Ross (2018)	To explore learners' perceptions in the disadvantaged rural community of Siyabuswa, Mpumalanga regarding tertiary education and factors affecting their pursuit of such an education.	N/A	Students' perception and experience	Spatial equality	South Africa	Third level
Majhi (2019)	Explore the impact of school infrastructure facilities on the gross enrolment in primary schools.	Resource distribution	N/A	N/A	India	Primary level
Marginson (2016)	Explore the intersection between stratified social backgrounds and the stratifying structures in high participation systems.	N/A	Structure	Social class equality	Worldwide	Third level
Martinez et al. (2019)	Examine the college access and preparation experiences of 14 Latinxs attending college preparatory charter schools within one school system in Texas.	N/A	Students' perception and experience	Racial equality	USA	Third level
Mathers and Parry (2009)	Why students from lower socio-economic circumstances remain under-represented in UK medical schools despite recent shifts in other demographic variables and specific policy emphasis on widening participation (WP).	N/A	Structure (Bourdieu)	Social class equality	UK	Third level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Mawhinney (2012)	Exam whether Irish policies and practice in the area of pupil admissions meet and satisfy international human rights standards.	Human relation	N/A	Religious equality	Ireland	Primary level
Mazawi (1998)	To examine the relative effects of regional, locality (community level) and high school variables on access opportunities of Palestinian Arab high school pupils in Israel to educational credentials.	Participation data	N/A	Spatial equality	Israel	Secondary level
McCleary-Sills et al. (2015)	Examine the link between girls' education and child marriage, including the important social and structural barriers that prevent girls' school completion and the protective role of education on girls' voice and agency.	N/A	Structure	Gender equality	Worldwide	Primary and secondary level
McCoy (2011)	Explore social class and gender differences in entry to the two main higher education sectors, universities and institutes of technology, among school leavers in Ireland over the period 1980-2006.	Participation data	N/A	Social class and gender equality	Ireland	Third level
Medley (2016)	Call attention to the practice of gender balancing and situate it in the context of the historic exclusion of women from higher education.	Human relation	N/A	Gender equality	USA	Third level
Meri Crespo et al. (2021)	Propose a critical assessment of equality policies from a theoretical standpoint.	Admission system and policy	N/A	Gender equality	Spain	Third level
Merritt and McEntee (2019)	Analyze the persistent gender gap in law school enrollment and explore the factors that may contribute to this gap.	Participation data	N/A	Gender equality	USA	Third level
Moberly (2014)	How the UK's treatment of foreign and ethnic minority doctors needs to change.	Human relation	N/A	Racial equality	UK	Doctoral level
Morley and Croft (2011)	Link between higher education access, equalities and disability are being explored by scholars of the sociology of higher education.	N/A	Structure and agency	Disability equality	Ghana and Tanzania	Third level
Mullen (2009)	Explore pathways to attending an Ivy League universities.	N/A	Structure	Social class equality	USA	Third level
Muñoz-Dunbar and Stanton (1999)	To examine the graduate recruitment and admissions process for ethnic minority students in clinical psychology and to provide a preliminary evaluation of its success.	Admission system and policy	N/A	Racial equality	USA	Doctoral level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Muralidharan and Prakash (2017)	Study the impact of an innovative program in the Indian state of Bihar that aimed to reduce the gender gap in secondary school enrollment by providing girls who continued to secondary school with a bicycle that would improve access to school.	Participation data	N/A	Gender equality	India	Secondary level
Murray et al. (1998)	Investigate the impact of school-finance systems reform on the distribution of school resources.	Resource distribution	N/A	Spatial equality	USA	N/A
Mwaipopo et al. (2011)	Analyse the process of access into higher education institutions and outcomes in terms of representation in higher education institutions by students with disabilities.	N/A	Students' perception and experience	Disability equality	Tanzania	Third level
Newman (2022)	Address issues in using the GRE in graduate school admissions.	Admission system and policy	N/A	N/A	USA	Graduate level
O'Hara et al. (2012)	Explore the effect of discrimination on expectations.	Human relation	N/A	Racial equality	USA	Third level
O'Shea et al. (2021)	Identify the immediate impacts of the pandemic on existing equity structures.	N/A	Structure	Social class equality	Australia	Third level
Odaga (2020)	Examine how Affirmative Action was used to govern access to higher education for the disadvantaged.	Admission system and policy	N/A	Gender equality	Uganda	Third level
Olmedo Reinoso (2008)	Analyse the impact of social class on the process of school choice in Spain from the viewpoint of middle-class families.	N/A	Structure (Bourdieu)	Social class equality	Spain	N/A
Olmedo-Torre (2018)	Is there a stereotype for women taking STEM studies?	Human relation	N/A	Gender equality	Spain	Third level
Panichella and Triventi (2014)	To examine the long-term trends in the association between social class of origin, enrolment in upper secondary education and the choice of high school track.	Participation data	N/A	Social class equality	Italy	Secondary level
Para-Mallam (2010)	Draws on empirical qualitative data to demonstrate that merely increasing female access to education is an incomplete development strategy for reducing gender inequality.	N/A	Students' perception and experience	Gender equality	Nigeria	N/A

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Perkins and Lowenthal (2014)	Explore common admissions requirements among institutions offering a distance or hybrid doctorate in educational technology and examines the specific admissions system used by the Department of Educational Technology at Boise State University.	Admission system and policy	N/A	N/A	USA	Doctoral level
Peter and Zambre (2017)	Investigate the causal relationship between information and educational expectations.	Participation data (enrolment rate)	N/A	Social class equality	German	Third level
Phillippo et al. (2021)	Investigates a diverse group of students' school choice experiences as they applied to, gained admission to and enrolled in high school in Chicago Public Schools, which offers over 130 options.	N/A	Students' perception and experience	Social class equality	USA	Secondary level
Pickering (2021)	Presents the evaluation of a small-scale widening participation intervention delivered by a Post-92 university to further education students traditionally underrepresented in higher education.	N/A	Structure and agency	Social class equality	UK	Third level
Posselt (2014)	To understand faculty reliance upon admissions criteria that undermine espoused diversity goals.	Admission system and policy	N/A	Racial equality	USA	Doctoral level
Powell (2022)	Focus on the development of education policy in the UK by analysing legislative provision related to the role played by central and local government, and equality of opportunity.	Admission system and policy	N/A	N/A	UK	N/A
Prickarts (2010)	To what extent is the Dutch government's IB DP Pilot likely to create equal access opportunities for all Dutch students, or rather equitable access opportunities for students from the elite, in government-sponsored Dutch international secondary education?	N/A	Structure	Social class equality	German	Third level
Raitano and Vona (2016)	Analyses the relationship between equality of opportunity and the characteristics of the educational system, jointly considering country- and school-level policies.	Participation data	N/A	Social class equality	OECD countries	Pre-primary, secondary and third level
Reay and Lucey (2004)	Examine middle-class strategies of 'voting with the feet', exit and self-exclusion, plus the more covert practice of 'exchanging addresses'.	N/A	Structure	Social class equality	UK	Secondary level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Reay et al. (2005)	Explore the impact of social class, gender and race in higher education choices.	N/A	Structure (Bourdieu)	Social class, race and gender equality	UK	Third level
Riegle-Crumb and Moore (2014)	Focus on variation in gender inequality in physics course-taking, questioning the notion of a ubiquitous male advantage.	Participation data	N/A	Gender equality	USA	Secondary level
Rim (2021)	Whether Title IX of the Education Amendments of 1972, which banned sex discrimination in admissions, was successful in reducing gender disparity in graduate education.	Admission system and policy	N/A	Gender equality	USA	Graduate level
Roberts et al. (2021)	Review literature on racially equitable admissions practices relevant to graduate programs in STEM.	N/A	Structure	Racial equality	USA	Doctoral level
Rong and Deng (2022)	How the higher education expansion policy influences the equality of higher education access opportunity.	Participation data	N/A	Spatial equality	China	Third level
Rowell (2020)	To evaluate trends in female matriculation from institutional MD-PhD program compared with national data.	Participation data	N/A	Gender equality	USA	Doctoral level
Sahoo (2017)	Explore gender inequality within households in the decision of private versus government school choice in India.	Participation data	N/A	Gender equality	India	Primary and secondary level
Santelices et al. (2019)	Explore the program theories in a sample of these programs and their effects on access and academic outcomes.	Admission system and policy	N/A	N/A	Chile	Third level
Schneider and Saw (2016)	Contrast earlier indicators of student college knowledge with college preparation activities to understand variations in college enrollment among different racial and ethnic groups.	Participation data	N/A	Racial equality	USA	Third level
Seghers et al. (2021)	Explore classed patterns in the course and outcome of parent-teacher interactions regarding educational decision-making (EDM) at the transition from primary to secondary education in Flanders (Belgium).	N/A	Other people's perception and experience	Social class equality	Belgium	Secondary level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Shields (2018)	To defend a proposal to cap the proportion of students admitted to elite colleges who were educated at elite, often private, schools to not more than the proportion of students who attend such schools in society as a whole.	Admission system and policy	N/A	Social class equality	N/A	Third level
Siddiqua and Janus (2017)	To explore parents' experiences with service provision as their children transitioned to school.	N/A	Other people's perception and experience	Disability equality	USA	Primary level
Sperandio and Kagoda (2009)	To predict the level of success of Uganda's fledgling post-primary education initiatives in achieving gender equality in both access and student outcomes.	Admission system and policy	N/A	Gender equality	Uganda	Secondary level
St.John (2006)	To examine how education reforms influence student achievement, high school graduation, and college access; and finance schemes influence college access.	Admission system and policy (privatization and accountability policies)	N/A	N/A	USA	Third level
Steward (2008)	Examine factors that influence ethnic minorities' (Black/African-American and Latinos) decisions to pursue PhDs in business.	N/A	Structure	Racial equality	USA	Doctoral level
Swartz (2010)	Investigate the ways in which Jews' ambiguous status pose unique problems for courts charged with evaluating private schools' compliance with anti-discrimination laws.	Human relation	N/A	Racial equality	USA	N/A
Terzi (2008)	Examine the demands of disability and special educational needs.	Capability	N/A	Disability equality	N/A	N/A
Terzi (2014)	Rethinking questions of inclusive education in the light of the value of educational equality – specifically conceived as capability equality, or genuine opportunities to achieve educational functionings.	Capability	N/A	N/A	N/A	N/A
Thelin (2019)	Distinguish illegalities from inequities in the decisions that elite college admissions offices make about student applications.	Admission system and policy	N/A	Social class equality	USA	Third level
Walker (2007)	How to apply the capability approach in education by selecting a list of education capabilities with a particular focus on gender equality	Capability	N/A	Gender equality	N/A	N/A

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Walker (2019)	Explore students' university access by applying Amartya Sen's capability approach to a South African case study.	Capability	N/A	N/A	South Africa	Third level
Wang (2011)	Examine educational inequalities in China posed by the HE admission system in Post-Mao era.	Capability	N/A	Social class equality	China	Third level
Wang and Guo (2019)	Use a Probit regression model to empirically examine the characteristics of participants in upper-secondary technical and vocational education (TVE), relative to upper-secondary academic schools.	Participation data (enrolment share)	N/A	Social class and gender equality	China	Third level
Watson (2009)	Offer an exploration of the capacity of the Irish primary education system to provide inclusive practices for a continuum of citizens.	N/A	Structure	Social class equality	Ireland	Primary level
Wawro (2010)	How accessibility to secondary schools in the Mukono District of Uganda is related to the sex and gender of the student and the distance that separates the student's home from the school they attend.	Participation data (cognitive and metric distances)	N/A	Gender equality	Uganda	Secondary level
West et al. (2011)	Focus on admissions criteria and practices used by English secondary schools in 2001 and 2008 in light of changes to legislation and the regulatory context.	Admission system and policy	N/A	N/A	UK	Secondary level
Wu (2012)	Explore the major characteristics of school choice in the Chinese context.	N/A	Structure (Bourdieu)	Social class equality	China	Third level
Wu (2012)	Explore c role of cultural capital in the competitive school admission process	N/A	Structure (Bourdieu)	Social class equality	China	Third level
Xiang et al. (2022)	To reveal the relationship between pupils' socio-spatial characteristics and travel distance.	Participation data (travel distance)	N/A	Spatial equality	China	Primary and secondary level
Xiaohao (2007)	Explore the role of socio-economic status in determining access to higher education over time.	Participation data	N/A	Social class equality	China	Third level
Xiaoxin (2014)	Explore Chinese school choice practices.	N/A	Structure	Social class equality	China	Primary and secondary level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Xu et al. (2021)	Document the patterns of White-Black and White-Hispanic enrollment gaps in Advanced Placement (AP) and Dual Enrollment (DE) programs across thousands of school districts in the United States by merging several data sources.	Participation data	N/A	Racial equality	USA	N/A
Xu et al. (2022)	Address gender equality by highlighting the intrahousehold allocation of education expenditure.	Resource distribution	N/A	Gender equality	Bangladesh	Secondary level
Yan et al. (2019)	Focus on the distribution of basic educational facilities in China.	Resource distribution	N/A	Spatial equality	China	Primary and secondary level
Yates (2006)	Discuss the relevance of curriculum to current UN Millennium targets to extend access to education and equality in education for women.	N/A	Structure	Gender equality	United Nations	N/A
Yin et al. (2021)	To explore the impact of gender differences on specialty choosing among Chinese medical students.	Participation data	N/A	Gender equality	China	Third level
You and Hu (2013)	Explore how to solve the dilemma of balancing diversification and equality in Chinese College Entrance Examination Reform in China.	Admission system and policy	N/A	N/A	China	Third level
Young-Loveridge (1989)	Explore the relationship between children's home experiences and their mathematical skills on entry to school.	N/A	Structure	Social class equality	New Zealand	Primary level
Yue (2015)	What is the relationship between the fast expansion of higher education and the equality of college enrollment opportunity in China?	Participation data	N/A	Social class equality	China	Third level
Zekeri Momoh et al. (2020)	Assess the levels of female enrolment, gender literacy and gender representation in the Nigerian educational system.	Participation data	N/A	Gender equality	Nigeria	Primary, secondary and third level
Zhang and Chen (2014)	Investigate 'how the expansion of college admission induced gender equality in higher education opportunities.'	Participation data	N/A	Gender equality	China	Third level
Zhang and Chen (2018)	Explore how tenant discrimination in school enrollment in urban China produce rent-yields gaps among housings.	Human relation	N/A	Spatial equality	China	Primary level

Author(s) and year	Topic	Metric of equality	Perspective(s) to explain equality	Type of equality	Country (Region)	Level of education
Zhu (2010)	Explore the development of access to higher education for ethnic minorities in the policy context since the 1950s and analyzes inequality between Han Chinese and ethnic minority groups.	Participation data	N/A	Racial equality	China	Third level
Zisk (2017)	Discuss the United States Supreme Court's decision that race may be considered when a college or university decides whom to admit and whom to reject.	Admission system and policy	N/A	Racial equality	USA	Third level

Appendix 3: Characteristics of the discipline of economics in China

Three characteristics make the discipline of economics more closely related to the topic of this study: the close relationship with upward social mobility, the large gender gap and more competition than other disciplines regarding access.

Close relationship with upward social mobility

Figure 1 shows graduates' average first-year salary in economics' doctoral schools in China's world-class universities (CNBS, 2018). Compared to the average graduates' income among all doctoral schools in world-class universities, which is ¥12,058, the incomes of economics graduates are much higher (CNBS, 2018). Another analysis conducted by Chinaverture on 874 people who have been on Hurun or Forbes Rich List in China with higher education backgrounds between 2003 and 2012 illustrates that graduates of economics account for the highest proportion, which is 12.7%, followed by business and management and computer science, which is 11.4% and 9.9% respectively. Apart from higher average income and the production of more affluent people, economic graduates' performances are also notable in the political field. I collected 26 national-level government officials' educational backgrounds and found that seven graduated from economics schools, ranking first place (See **Figure 2**). If we compare the figures with the proportion of students admitted by different subjects, we can find that the possibility for economics students to become rich or powerful is much higher (See **Table 1**, CNBS, 2018). In conclusion, accessing doctoral schools of economics is closely related to the realisation of upward social mobility and becoming elite in China.

Figure 1. Graduates' average first-year salary in doctoral schools of economics in world-class universities in 2017

| 19.8% | 38.2% | 29.3% | 7.2% | 5.5% |

■ <¥10,000 ■ ¥10,000-¥20,000 ■ ¥20,000-¥30,000 ■ ¥30,000-¥50,000 ■ >¥50,000
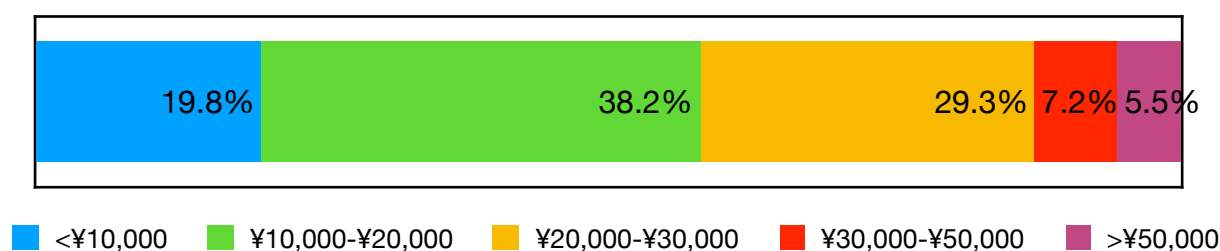
Figure 2. 26 national-level government officials' educational backgrounds

● Economics ● Law
● Literature ● Business and management
● History ● Nature science
● Engineering

27%, 23%, 15%, 12%, 8%, 8%, 8%
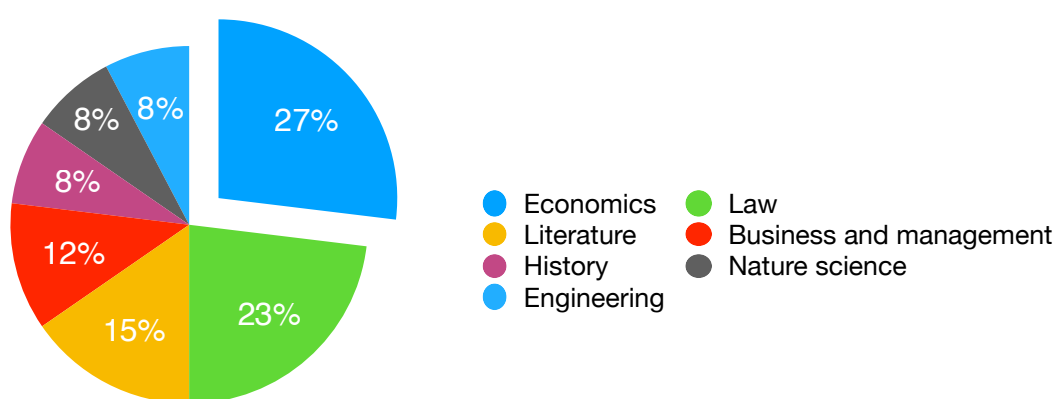
Table 1. the proportion of PhD students admitted by different subjects in 2016

Subject	2014	2015	2016
Engineering	38.1%	38.3%	38.5%
Natural science	18.9%	18.7%	18.8%
Medicine	12.1%	12.3%	12.1%
Management	8.4%	8.4%	8.2%
Economic	5.1%	4.9%	4.7%
Law	4.2%	4.2%	4.3%
Literature	4.3%	4.3%	4.2%
Agriculture	4.1%	4.1%	4.1%
Education	1.8%	1.8%	1.9%
History	1.7%	1.7%	1.7%
Philosophy	1.3%	1.3%	1.4%
Source: CNBS 2018			

Large gender gap

In the US, women accounted for less than 15% of professors and 31% of assistant professors in economics departments in 2020 (Committee on the Status of Women in the Economics Profession: CSWEP, 2020). Also, the number of women who won economic-related awards were small. There were just two female Noble Prizes winners in the economic field since 1969. In terms of school access in the US, women represented around 30% of doctoral and master's graduates in economics in 2014, which was similar to 1995, compared with 60% in STEM fields and 45% in business and humilities (Bayer and Cecilia, 2016). Female graduates in the economics discipline are also under-represented at the PhD level in China, although they are over-represented at the bachelor's and master's levels. It seems that the situation was better in China than in the USA. However, the gap regarding the percentage of female graduates between PhD level and master's level was the main problem in China. It was more expansive in the economics discipline than in other disciplines in 2018, where female graduates fell by 27 percentage points. This fact made gender imbalance (especially to the disadvantage of female students) more evident and easier to observe in the economic discipline (see **Figure 3** below).

Figure 3. Percentage of female graduates in different disciplines at master's and doctoral level (2018)
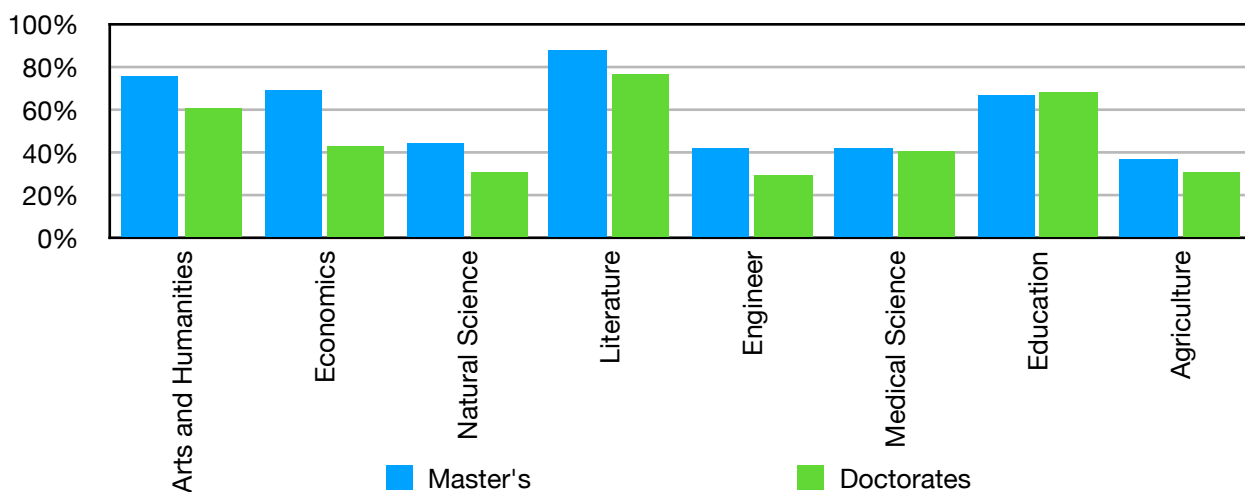
More competition regarding access

Doctoral students are expected to expand and develop the knowledge base in their field of study. Therefore, unlike undergraduate and master applicants, doctoral applicants tend to specialise more heavily in the fields related to science and technology, which are possible and necessary for in-depth explorations. Across OECD countries, the field of natural sciences, statistics and mathematics attracted the highest proportion of doctoral graduates, which was 23% on average, followed by the field of engineering, construction and manufacturing, and health and welfare, which were both 17% on average (see **Table 2** below; OECD, 2019). In China, although these fields also ranked top three in terms of the percentage of doctoral graduates, the field of engineering, construction and manufacturing ranked the first place, which was 39% in 2016, followed by natural sciences, statistics and mathematics, and health and welfare, which were 19% and 12% respectively. In contrast, economics, which accounted for a much higher proportion of bachelor graduates (13%), represented only 4.7% at the doctoral level in China. In addition, economics is the only major where the proportion of graduates among total PhD graduates has dropped significantly in recent years. These facts made the doctoral school access more competitive in the economic discipline than in other fields.

Table 2. The percentage of doctoral graduates in different fields

	OECD countries on average	China in 2016
Natural sciences, statistics and mathematics	23%	19%
Engineering, construction and manufacturing	17%	39%
Health and welfare	17%	12%
Economics	<10%	4.7%
Source: CME official website		

Appendix 4: The four elite doctoral schools of economics in China

In this study, I aim to generate in-depth, comprehensive understandings of a phenomenon: the impacts of social class and gender on students' access to elite DSOEs in China. All the explorations and inquiries were within a particular real-world context: the four elite doctoral schools of economics in China. A detailed discussion of them will be provided here.

1. Context

In the era of the planned economy, education was an extension of the political field. The central government controlled the universities and their subordinate doctoral schools in almost all aspects, including organisational structure, policy formulation, and culture. All the universities and doctoral schools were run by the central governments and inevitably shared the same identities. After entering the reform and opening-up period, the government's inertia in the administration and management of universities still exists. Chinese universities and their affiliated doctoral schools still do not have sufficient autonomy in school-runnings despite several reforms and changes, which, as a result, led to a high degree of similarity between them.

However, although there were numerous similarities, it was undeniable that there were also some subtle differences between the four DSOEs (see **Table 1.** below). I argue that these differences did not affect the researched topic. The SID could be resolved, and the four elite DSOEs could be analysed and discussed together. In the following part of this section, I will discuss the differences between the elite DSOEs and why these differences do not impact data analysis and discussion.

Table 1. Comparison of contexts on doctoral school by doctoral school basis

	PKU	CUFE	RMU	FDU
Similarities	Doctoral school revenue			
	Doctoral school organisations			
	Doctoral school policy-making			
	Doctoral school culture			
	Doctoral school strategies			
Differences	Beijing	Beijing	Beijing	Shanghai
	Comprehensive University	Finance and Economics specific university	Comprehensive University	Comprehensive University

1.1 Different types of university

The first difference is that unlike the other three universities, which were comprehensive universities with various disciplines, the CUFE is a specialised university concentrating on finance and the economics. Regarding the number of doctoral disciplines and programs, the CUFE is far less than the other three universities (see **Table 2** below). In 2021, it had only four doctoral disciplines (law, economics, science[25] and management) and 27 doctoral programs. This difference further led to the variations in financial and educational resources, and students' career opportunities between the CUFE and the other three universities.

Table 2. Number of doctoral disciplines and programs in four universities

	Number of doctoral discipline	Number of doctoral program
PKU	11	210
CUFE	4	27
RMU	8	122
FDU	9	142

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[25] Doctoral programs in the discipline of science in the CUFE included economic statistics, mathematical statistics, financial statistics and risk management, applied statistics. They are all related to finance and economics.

First of all, in general, it is easier for comprehensive universities with broad disciplines to obtain more resources, especially financial resources. The actual data also conforms to this rule. Although the four universities are all directly affiliated to the MOE, the primary source of fiscal revenue is the government. From the perspectives of the total financial budget and the financial budget per student, CUFE is lower than the other three universities (see **Table 3.** below). However, the focus of this research was only on the elite DSOEs of these universities that ranked the top 2% in the fourth Chinese National Discipline Evaluation (NDE). As the best doctoral schools in the universities, there were significant advantages for them in resource acquisition. Therefore, although there were financial gaps considering the university as a whole, the financial resources the DSOE of the CUFE could get was no less than that of the other three DSOEs.

Table 3. Financial budgets of the four universities in 2021

	Financial budget (million)	Number of student	Financial budget/ student
PKU	22,133	53,757	411,739
CUFE	2,051	16,546	123,979
RMU	7,806	21,666	360,298
FDU	14,162	49,140	288,197
Source: the MOE			

Moreover, as a university focusing on finance and economics, the educational resources related to other fields that the CUFE could provide to its students are less than those of the other three universities. However, although comprehensive development is vital for a student, doctoral education aims to cultivate high-end talents in a specific field rather than all-rounders. Therefore, whether there were enough opportunities to obtain educational resources in other fields is essential but not decisive for doctoral students' decision-making (the impact of this on doctoral school access will be discussed later when possible and necessary).

In addition, being a university that concentrates on finance and economics, the CUFE's ranking is lower than the other three universities. The **table 4** below shows the rankings of the universities in this study in four popular Chinese rankings lists in 2020. In recent years, these university ranking lists have attracted widespread attention in the job market and strongly influenced employers' decisions. However, PhD graduates are generally engaged in highly professional jobs, so the impact of university rankings on their career opportunities is far less than that of undergraduate graduates. Employers often pay more attention to the abilities of students and the comprehensive strength of their graduated doctoral schools. So although the rankings inevitably had a certain degree of impact, their influence was minimal (I will discuss this point later when it is possible and necessary), which did not shake my decision on the discussion of the four elite DSOEs as a whole.

Table 4. Rankings of the four universities in 2020

	PKU	CUFE	RMU	FDU
Wu Shulian	2	126	21	5
Cuaa	1	95	7	4
Netbig	2	64	8	6
Wuhan University	1	72	19	6

1.2 Different doctoral school locations

The second difference is that three DSOEs (PKU, CUFE and RMU) are located in Beijing and the other (FDU) in Shanghai. Beijing is the capital of China. It is a municipality located in the north of China and determined by the State Council as the political, cultural, international exchange, and science and technology innovation centre. Beijing is also the location of the head office of the Central Committee of the Communist Party of China and the Central People's Government of the People's Republic of China. In contrast, Shanghai is a provincial-level administrative region and municipality directly under the central government. It is located in the south of China. The State Council considers Shanghai the

international economy, finance, trade, shipping, and science and technology innovation centre.

No matter in Beijing or Shanghai, PhD students face high financial pressure. In 2020, Shanghai's per capita consumption was ¥47,288, ranking first in China. Beijing's per capita consumption was ¥43,128, following closely behind. In the same year, China's total per capita consumption was ¥22,942. Meanwhile, high consumption was always accompanied by high income. The per capita income of Shanghai and Beijing also occupied the top two places in Chinese cities in 2020. However, as doctoral students' income depends mainly on the allocation of national grants and scholarships, which the MOE issues following a unified standard, compared with doctoral students studying in other cities, those in the elite DSOEs could not avoid facing more financial challenges.

In addition, it is more convenient and attractive for doctoral graduates to work in the city where the doctoral school is located due to the more familiarity, abundant network resources and higher average income (in 2020, Shanghai ranked first place and Beijing ranked second place in China). However, the prerequisite for working in these two cities is to have the local Hukou, the residence and the working permit in China. Concerning acquiring the local Hukou, privileged educational background and a job offer are necessary. Because the four elite DSOEs are all in the List of World-class Disciplines, their doctoral graduates meet educational background requirements. Moreover, both Beijing and Shanghai have vast universities, research institutions, enterprises, and companies that could provide plenty of job opportunities for PhD graduates (see **Table 5** below).

Table 5. Job opportunities in Beijing and Shanghai (2021)

	Beijing	Shanghai
Number of higher education institutions	92	64
Research and development investment (million yuan)	223,360	152,460
Number of graduate students in higher education institutions	19,466	2,027
Number of world's top five hundred companies	56	7

Number of China's top five hundred companies	61	115
Number of regional headquarters of multinational companies	189	763
Foreign investment (million yuan)	14,200	19,048
Number of legal entities in financial and economics industry	12,796	9,539
Number of people work in financial and economics industry	546,900	333,900

Nevertheless, regarding the type of job opportunities, differences could be witnessed between Beijing and Shanghai. In terms of the academic jobs, which were traditional and popular among PhD graduates, Beijing had more opportunities than Shanghai due to more higher education institutions and the larger amount of research and development investment (see **Table 5.** above). In terms of jobs in enterprises, in 2021, Fortune Magazine published the list of the World's top five hundred companies. In total, there were 129 companies in China, 56 in Beijing and 7 in Shanghai. Likewise, in China's top five hundred companies, there were 115 companies in Beijing and 61 in Shanghai. If we take a closer look at the companies in these lists, we could notice that the companies in Beijing were primarily state-owned enterprises while Shanghai were mainly private and foreign enterprises. Moreover, in 2021, there were 763 regional headquarters of multinational companies located in Shanghai, compared with 189 in Beijing. We could see that Shanghai provided more opportunities for jobs in foreign companies than Beijing. Finally, as the political centre and the seat of the central government, Beijing could undoubtedly provide doctoral graduates with more opportunities to develop careers in politics.

Regarding job opportunities related to finance and economics, Beijing and Shanghai have different advantages and disadvantages (see **Table 5.** above). In 2020, the number of legal entities in Beijing's financial and economics industry was 12,796, surpassing Shanghai's 9,539. In terms of employment in the financial and economic industry, Beijing had 546,900 people, more significant than the 333,900 people in Shanghai. Moreover, Beijing is the centre for the headquarters of large national financial institutions, especially

banking institutions and insurance institutions. In comparison, Shanghai's advantages are mainly in securities financial institutions. As the national securities trading market location, Shanghai had the most corporate securities companies, public funds, futures companies, and private equity funds among the cities in China.

In general, there were two main differences between the four elite DSOEs, and the two differences further led to three key points that might impact students' access (see **Table 6.** below). Because the similarities were far more than the differences, and the impact of the three key points was relatively small, the four elite DSOEs were put together for analysis and discussion. When possible and necessary, I will discuss the impact of the three key points on students' elite DSOE access.

Table 6. Differences among elite doctoral schools of economics

Difference	Key point
Different types of university	University and doctoral school ranking
	Educational resources in other fields
Different doctoral school locations	Job opportunities

2. Doctoral school revenue

Zhou (2015) argued that an organisation's behaviour is determined mainly by its incentive structure, and the same incentive structure will shape the same behaviour. The incentive structure here primarily refers to the way of resource allocation, especially financial resource allocation. The doctoral school is undoubtedly an organisation, and school revenue is its core resource. Sufficient funding is conducive to improving teaching and scientific research conditions and recruiting better teachers and researchers. Therefore, the methods of obtaining fundings are at the core of doctoral schools' incentive structure. I noticed that there were three main types of funds received by elite DSOEs in China:

435

1. The funds provided by external political institutions such as the MOE: These funds are allocated according to clearly defined allocation standards. The right to distribute this type of fund is in the hands of government authorities and administrative officials.

2. The funds provided by the doctoral schools through educational services: These funds are generally obtained independently by the elite DSOEs, such as owning their own land, property or donations. The right to distribute this type of fund is in the hands of elite DSOEs.

3. The funds provided by consumers of educational services such as students: These funds are usually obtained through doctoral schools selling services such as teaching, research, and consulting. The right to distribute this type of fund is in the hands of customers.

According to different funding providers, the elite DSOEs' revenue could be divided into bureaucratic, doctoral, and market models. These models strongly determined elite DSOEs' behaviours. Despite the different proportions, I found that all elite DSOEs utilised these three models in a combination (see **Table 7.** below). However, although the market model occupied the most significant proportion of the revenue allocation of the three elite DSOEs (PKU, RMU and FDU), China's market model was not accurate. It was just a variant of the bureaucratic model. The elite DSOEs did not have complete autonomy in enrolment. The government decided how many students to recruit and how much tuition fees to charge. While research fundings were competitive on the surface, most of them came from government-controlled foundations. In addition, income under the doctoral model, such as investment and land lease, was also primarily influenced and determined by the government. In a word, although it seemed that the elite DSOEs could get funding from different providers, the government still controlled their funding sources under the bureaucratic model.

Table 7. Funds of different providers in elite doctoral schools of economics (2020)

	PKU	CUFE	RMU	FDU
External political institutions (million)	4,461.95 (27.5%)	625.38 (38.6%)	1,767.74 (30.8%)	2,678.55 (29.2%)
Doctoral schools (million)	3,753.26 (23.1%)	400.00 (24.7%)	1,563.02 (27.2%)	2,200.00 (24.0%)
Consumers of educational services (million)	8,009.80 (49.4%)	595.00 (36.7%)	2,412.20 (42.0%)	4,298.81 (46.8%)
Total (million)	16,225.01	1,620.38	5,742.96	9,177.36

The fact that financial resource allocation was carried out from top to bottom and controlled by the government led to homogeneity among elite DSOEs. To obtain more fundings, elite DSOEs had to cater to the values and expectations of the government in all aspects. As a result, there existed similarities regarding their organisations, policy-making, culture and strategies, which will be discussed later.

3. Doctoral school organisations

The university organisations in China were always based on transplantation and imitation. Peking University initially borrowed from Germany's educational philosophy; Fudan University originally imitated the American universities. In Mao's era, all universities were modelled on the former Soviet Union universities. Then after the reform and opening up, the design of university organisations is mainly based on the models of developed countries in Europe and America. All of the transplantation and imitation processes mentioned above were generated and supervised by the central government. Therefore, the survival and development of Chinese universities depended highly on the adaption of the surrounding environment, primarily the highly centralised and unified governmental management system. The governmental management system ensured the legitimacy of the universities, provided them resources and services for further development, absorbed and utilised their talent training and scientific research achievements, and also designed

and monitored their organisational structures. It constrained and restricted almost every behaviour of Chinese universities through various standards and regulations, including regulations for their organisations. Hence, there was a tendency for organisational homogeneity among Chinese universities and their subordinate doctoral schools.

3.1 Administrative organisations

Universities had to adapt and cater to the surrounding environment to survive and develop in China. As Tang (2009) explained, any university not rooted in the institutional environment and recognised by the legitimacy mechanism would have high organisational turbulence, which might affect its survival and growth. In this study, I noticed that all the selected universities and doctoral schools worked hard to satisfy the external institutional environment and made the choices with the lowest cost and risk for them, which was to apply a similar administrative structure to the central government and its subordinate departments. Therefore, regarding the administrative organisation, there were not many differences among them.

China is a typical centralised country, and the centralised political structure has comprehensive control over its education system. In the Global North countries, the administrative organisations of universities were naturally formed based on demand. However, in China, they were mandatory and uniformly set up by the relevant management department. All the elite DSOEs were under the jurisdiction of the Ministry of Education (MOE). The MOE determines their resource acquisition and designs their administrative organisations. Elite DSOEs do not have sufficient autonomy to build their administrative structure but to imitate the MOE. The MOE's administrative departments include the development plan, human resources, finance, public security, and cooperation. Similar departments could also be found in elite DSOEs. In addition, as far as the doctoral schools' specific departments were concerned, I found that the elite

DSOEs all had party committees, school councils, academic committees, degree evaluation committees, faculty representatives and student representatives, and the powers and responsibilities of these departments were unanimous. Therefore, there exists a high degree of consistency between different elite DSOEs regarding their administrative organisations.

3.2 Research organisations

Research organisations could be separated into three types: research centre, editorial centre and postdoctoral centre (see **Table 8** below). All elite DSOEs had these three types of research organisations, which played different roles.

Table 8. Research organisations for elite doctoral schools of economics in China

	PKU	CUFE	RMU	FDU
Number of research centre	21	20	18	36
Editorial centre	Y	Y	Y	Y
Number of postdoctoral centre	2	2	2	2

Research centre

I found that each elite DSOE has set up several research centres. These research centres are non-profit organisations that claim to be independent of government and enterprises. They share high-level talents, databases and other academic resources with universities and doctoral schools and combine the academic purposes with practical purposes to a certain degree.

To achieve academic purposes, the research centres make great efforts to complement and promote teaching and research. Their main aim is to gather resources and elites from all works of life, combine scientific research with talent cultivation and promote the

localisation and standardisation of economic research in China. It is worth mentioning that some researcher centres could grant doctoral degrees[26], such as the China Centre for Economic Research (CCER), which was belonged to the DSOE of PKU. For practical purposes, a vital role of these research centres is to serve as an essential component of China's think tank system. All these research centres concentrate on public policy and aim at influencing government decision-making processes and promoting economic reform and development.

All the research centres are the combination of the two types of purposes and share various similarities. As was discussed before, the primary source of university and doctoral school revenue is the government. Hence, although claiming to be independent, these research centres are still financially supported and indirectly controlled by the government. The primary way for the research centres to obtain funds is to apply for national projects such as those sponsored by the National Social Science Foundation and the National Natural Science Foundation. In addition, to have projects and funding as well as the right to speak in government decision-making processes, these research centres work hard to maintain a good relationship with relevant governmental departments. The same goal makes their operation system similar.

Editorial centre

All the elite DSOEs sponsored various publications and had their own editorial centre. Some of them were the national Chinese core journal on economics theory, the Chinese Social Science Citation Index (CSSCI) source journals, and core journals of Chinese humanities and social sciences. For instance, *Economic Science,* which the DSOE of PKU sponsored, the *World Economic Papers,* which the DSOE of FDU sponsored and the *Political Science Economic Review*, which the DSOE of RMU sponsored. The

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[26] Elite doctoral school access in this study did not include access to research centres that was belonged to the elite DSOEs for PhD degrees.

principal role of these editorial centres was to flourish economic theory, promote academic exchanges, and serve the reform and opening up and socialist modernisation in China. Publications edited by these editorial centres have significantly increased the influence and attractiveness of elite DSOEs.

Postdoctoral centre

All elite DSOEs have two postdoctoral centres: the postdoctoral centre in applied economics and the postdoctoral centre in theoretical economics. These postdoctoral centres provide doctoral graduates opportunities to continue engaging in academic research for some time. He and Wang (2021) found that 21.07% of doctoral students were willing to work in postdoctoral centres after graduation. Moreover, the better the doctoral schools were, the higher the proportion of students willing to enter the postdoctoral centres (He and Wang, 2021). Therefore, having postdoctoral centres increases the attractiveness of elite DSOEs to a certain extent.

4. Doctoral school policy

4.1 University regulation

The policy is the legal basis for the establishment and operation of the universities and their subordinate doctoral schools. In 1950, the MOE promulgated the Interim Regulations of Beijing Normal University, which was the first official university regulation since the founding of the People's Republic of China. Since then, no formal university regulation has been approved in China. During that period, the Chinese government implemented centralised management and macro-control on universities. In terms of policy-making, it was only necessary for universities to implement the opinions and spirit of the competent

department without any compromise. The same thinking determines the same action. As a result, decisions and policies made by universities are highly consistent.

Being aware of the severe consequences that the high consistency among universities in terms of regulation would cause, in 2012, the central government proposed the goal of 'accelerating the transformation of government functions and promoting the rationalisation and de-administration of public universities and the competent departments' and required all universities to formulate their own regulations. Chinese scholars called it the regulation movement, which was a mandatory system change planned, initiated, and promoted by the central government, rather than the autonomous behaviour of universities (Zhou, 2014; Zhao and Cao, 2016). However, Chinese universities already had their own operating mechanisms at that time, and the formulation of regulations engaged merely sorting out and fine-tuning these already existing mechanisms. Few universities take this opportunity to research in-depth the issues of university governance and development. As a result, there is still a high degree of convergence in university regulations.

4.2 Doctoral school admission policy

In China, there were three main doctoral admissions methods: material review, written test and interview. All doctoral programs' admission process could be divided into two stages, each involving one or more of the three methods. Moreover, while this study was conducted in the transitional period of doctoral enrolment, there were two modes of enrolment for the regular doctoral program (written test model and application-assessment model). Combined with the enrolment models of the other two doctoral programs, I have identified four enrolment models in total. Please see **Table 9.** below for different doctoral programs' admission models in China.

Table 9. Different doctoral programs' admission models in China

Doctoral program	First stage of admission	Second stage of admission	Admission model
Regular doctoral program	Material review and written test	Interview	Written test model
	Material review	Written test and interview	Application-assessment model
Bachelor-straight-to-doctor program	Material review	Interview (summer camp)	Summer camp model
Successive master-doctor program	Material review	Interview	Internal application model

By comparing the four elite DSOEs' admission policies regarding the four doctoral admission models, I found that (1) the same admission model has little difference between different institutions; (2) the four doctoral admission models examined roughly the same things. These findings reflected the high degree of similarity between Chinese doctoral enrolment in different institutions and by different models.

Similarities between different doctoral schools regarding the same admission model

As mentioned above, there were four doctoral admission models in China when this study was conducted[27]. I compared the four DSOE's admission policies model by model and found that their contents were highly consistent. The first is the written test model for the regular doctoral program. This study found that all the two DSOEs using this model underwent material reviews and written tests at the first stage of admission. The required materials were similar; both included research proposal, reference letters, master's transcript and thesis, degree and graduation certificates, publications and proof of research achievements. As for the written tests, both of them included one English test and two professional knowledge tests. The doctoral schools were responsible for generating questions, scoring test papers and setting enrolment standards. Then,

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[27] In 2020, all four DSOEs completed the transition from the written test model to the application-assessment model regarding regular doctoral program admissions. Since then, there have been three doctoral admission models in total instead of four.

concerning the second admission stage, both DSOEs utilised the interview method, which was conducted by the supervisors and other qualified staff.

I then compared the application-assessment model for the regular doctoral program and found that the DSOEs that utilised it also had similar policies. Both of them applied the method of material review for the first stage of admission and written tests and interviews for the second stage of admission. Potential candidates firstly submit required materials for doctoral schools to review. The materials required by different doctoral schools were similar. In 2019, both elite DSOEs required: (1). registration form; (2). degree certificate and transcript; (3). research proposal (both PKU and CUFE required 3000 words); (4). personal statement and CV; (5). proof of academic achievements (including thesis, award certificates and publications); (6). letters of recommendation (both PKU and CUFE required two letters of recommendation from an expert with a professional title of associate professor and above in the field of economics); (7). English proficiency certificate/results of English proficiency test. After collecting all the required documents, both doctoral schools set up an expert group to comprehensively review and score the application materials. Applicants with high scores would be informed to enter the next admission stage. Although the original descriptions of the material review in the admission policy were slightly different, the actual operation processes were basically the same.

The following admission stage in both elite DSOEs included a written test and an interview. As for the written test, both of them concentrated on professional economic knowledge. The difference was that the CUFE included a part of the English test, accounting for 10% of the total score. Given that the proposition was relatively small and students' English abilities were further examined in both elite DSOEs through the interview, I argue that the main content of the second admission stage was highly similar. Apart from English abilities, other factors such as research potential, innovation and

thinking skills were stressed during the interview. In addition, although the final admission result calculation formulas were slightly different, the entire retest processes were almost the same (firstly, written test and then interview, the final result combined the two parts). Please see **Table10.** below for more detailed information.

Table 10. Second admission stage's contents (application-assessment model)

	Written test content	Interview content	Final result
PKU	Economics	Professional knowledge, logic, innovation ability, and research potential	The written test and interview each account for 50% of the total score. Failure in either (less than a score of 60) will not be accepted.
CUFE	Economics (90%) and English (10%)	Academic skill and potential, and English	Total retest score = written test score * 40% + interview score * 60%.

The third model was the summer camp model for the bachelor-straight-to-doctor program. Applicants need first submit the required documents to doctoral schools to obtain summer camp opportunities. The required documents were similar to what was required by the written test and the application-assessment model. The admission doctoral schools then organise experts to review and evaluate the documents and invite eligible applicants to participate in the summer camp. The invited students will visit the doctoral school during the summer vacation and stay there for around three to five days. During these days, they will attend lectures, seminars, and, most importantly, interviews. The doctoral schools will decide the admission results based on the overall performance of the summer camp attendants. However, no clear standards were officially announced for evaluating students' performance in all elite DSOEs, which made the entire PhD admission process opaque and flexible. Moreover, another requirement must be met for applicants to be finally enrolled in doctoral schools: obtain a recommendation from the undergraduate university. To obtain such a recommendation, students must have outstanding results and performance during their undergraduate studies. In China, only a

small number of universities were eligible to recommend students (the MOE announces the eligible universities every year, in 2020, there were 368 eligible universities in China); an undergraduate department has only a few places, which means that the relevant competition was highly fierce.

The last doctoral admission model was the internal review model for the successive master-doctor program. Since a great majority of the students were applying to continue their doctoral studies within their master's schools and even under the supervision of their master's supervisors[28], agreement from potential supervisors must be obtained before the start of the application. The application process can be divided into two stages. The first stage was the submission and review of required documents, and the second stage was the interview. For most applicants, the second stage was exempted. In addition, due to the convenience of practical operation, applicants still required to attend the second-stage admission process will be interviewed with the applicants of the application-assessment model simultaneously by the same experts under the same standards. In other words, the internal review model for those students was the application-assessment model minus the step of the written test.

Overall, the same admission model in different doctoral schools was similar, which supported my choice: to analyse data on a single case rather than a doctoral school by doctoral school basis. The next chapter will discuss more similarities between doctoral schools regarding their admission policy.

Similarities between different admission models

In the last section, we discussed China's four doctoral admission models. In this section, we will talk about the similarities between them. **Table 11.** below shows that all doctoral admission models in China include the material review in the first stage and the interview

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[28] Very few students apply to the successive master-doctoral program across majors and schools. Relevant cases were not considered in this study.

in the second stage. Both of them comprehensively examine applicants' professional knowledge and skills, academic potential and other general competencies. It is undeniable that they each have unique characteristics, but I believe these characteristics did not make the overall test content different.

Table 11. Doctoral admission models and their characteristics

Admission model	First stage of admission	Second stage of admission	Characteristics
Application-assessment model	Material review	Written test and interview	• Most comprehensive process • Newest and the most widely used model
Written test model	Material review and written test	Interview	• Stress on written test
Summer camp model	Material review	Interview (summer camp)	• No written test • Different forms of interview • Need to acquire permission from undergraduate schools
Internal application model	Material review	Interview	• No written test • Exemption of interview (for most applicants) • Need to acquire permission from master's schools

Among the four doctoral admission models, the application-assessment model was the newest and most widely used one. It represents the direction of China's doctoral enrolment reform. In addition, it involves the most comprehensive admission process. Due to these facts, I will use the application-assessment model as the standard to compare with other models and prove that these models were highly similar.

Compared with the application-assessment model, the written test model involves a similar process. The difference is that this model places more emphasis on the written test. Instead, material reviews and interviews received less attention. Under the written test model, the doctoral schools will not formally organise an expert group to evaluate and score applications' materials. They merely filter applicants roughly without a clear standard. Moreover, the number of experts involved in the written test model for the interview is also less than in the application-assessment model. Students' performance

has relatively little impact on the final admission result. In general, the process of the two models is almost the same. It was just their focus that was different.

Moreover, compared to the application-assessment model, the summer camp and the internal application model involve no written test. However, both of them require additional permission from the student's previous schools. The keys to obtaining such permissions are a high GPA and outstanding academic performance, meaning students master adequate professional knowledge. This requirement makes up for the vacancy of the written test, which also concentrates on the applications' professional knowledge.

In addition, the interview process involved in the summer camp model was slightly different. Students were required to attend the summer camp, with interviews interspersed. However, although specific criteria could not be found, the interviews conducted through the summer camp model also focused on the applicant's overall ability and academic potential. As for the interview involved in the internal application model, many applicants were granted immunity. However, this is based on the fact that most students apply for continuous study with the same supervisor, which means there is a previously established mutual understanding. In other words, the supervisor already knew the applications' overall ability and academic potential. It is reasonable for the interview to be exempted in such cases.

Table 12. below illustrates the four elite DSOEs and their recruitment models between 2017 and 2019. Based on the above discussions, I argue that while there were differences among elite DSOEs, this study can still analyse data on a single case basis rather than a doctoral school by doctoral school basis. Furthermore, due to the similarities between the different doctoral admission models, this study did not intend to compare data differences between different admissions approaches.

Table 12. Doctoral schools and their recruitment models between 2017 and 2019

	PKU	FDU	CUFE	RMU

Regular doctoral program (written test model)		✓		✓
Regular doctoral program (application-assessment model)	✓		✓	
Bachelor-straight-to-doctor program (summer camp model)	✓	✓	✓	✓
Successive master-doctor program (internal application model)	✓	✓	✓	✓

5. Doctoral school cultures

There has never been a university which has been related so closely to the fate of a nation and its people as Peking University. Similarly, it is true and appropriate to say that there has never been a university's economics school which has been related so closely to the development of a nation's economic discipline as the School of Economics at Peking University.

(Zhiyong Dong, Dean of the School of Economics Peking University)

5.1 Contribution to the national development

All four DSOEs mentioned in this thesis were among the earliest economic schools built in China. Since their establishment, they have been endowed with the responsibility to produce and revive China's rejuvenation. When first introduced to China, economics was understood as the tactics of enriching the country (economics was translated into the Wealthy State Policy at the beginning), which was in line with the pursuits of traditional Confucian scholar-bureaucrats but quite different from the initial meaning of economics in Global North culture. Such interpretation further influenced the spiritual content and cultivation purpose of elite DSOEs in China. This interpretation could be mainly due to the primary meaning of learning in Chinese culture: the purpose of learning is to pursue the fundamental roles of the world and preserve the people in suffering. Traditional Chinese scholars often take the country's affairs as their own responsibilities and are the first ones

to worry for the future of the state and the last ones to claim their share of happiness. Following this tradition, elite DSOEs aim at prospering the country and benefiting its people through the thorough and accurate analysis of the economic phenomenon. In this way, the elite DSOEs were closely linked to the development and fate of China, attracting talented students with patriotism and lofty ambitions.

Instead of merely following the demand or trend of the employment market, elite DSOEs in China emphasises that the academic journey is detached and lonely and requires a calm mind and noble value. Doctoral students in elite DSOEs often have compassionate feelings and pay special attention to people's livelihood issues. By combining the vigour with suppleness, the indigenous and overseas and the ancient and modern knowledge, they endeavour to achieve their ultimate pursuit and contribute to the national development.

It was predicted by Dazhao Li, a famous Chinese economist, that the revitalisation of Chinese industry relies profoundly on the implementation of socialism. As the earliest bases of economics education and research in China, the elite DSOEs was the cradle of numerous well-known economic findings and theories such as the reform and opening up theory and socialism with Chinese characteristics that guided China's remarkable economic transition. Taking advantages of their academic strength and research ability, they actively participate in the discussions and research on significant issues related to the development of the national economy and people's livelihood. Painstaking efforts were made to construct a think tank that contributed a large number of valuable, informative and insightful research reports and policy recommendations to advance China's economic reform and modernisation processes. In today's China, the wisdom from the elite DSOEs could be found in almost every crucial academic and policy discussion and decision-making process.

5.2 Contribution to the development of China's economic discipline

Western theories and experience do not play a decisive role in my research. It is precisely China's economic development that has worked wonders in the world. What we need to do is to study it and develop it into theory.

No matter how clearly we remember and understand other people's theories, it is still other people's theories. To indeed contribute to the development of Chinese economics, were must discover and analyse real-life issues.

(Yifu Lin, Professor, DSOE of PKU)

The elite DSOEs are the most crucial and advanced economic education and research base in China. A lot of leading economists used to study or work there. Many significant discoveries and developments were born there. For instance, Fu Yan translated Adam Smith's *The Wealth of Nations* in 1901, which marks the introduction of the Global North economics to China; Dazhao Li firstly ran courses on Marxism in the DOSE of PKU; Qixiu Chen translated Marx's *Das Kapital* in 1931, disseminated the Marxist economics.

Human beings are facing unprecedented and complex social and economic changes today. All human beings' civilisation is accelerating to mingle, and all the countries have a shared destiny. However, every economic school and theory have their own merits and demerits. There does not exist anyone that could explain all the phenomena and facts, especially the phenomena and facts in China. Therefore, in the elite DSOEs, all the opinions and perspectives, regardless of domestic or abroad, live in harmony.

Apart from learning from others, elite DSOEs also emphasise the significance of initiation and innovation and argue that economic research should not only have a global perspective but also be rooted in the land of China. Determining to promote the localisation, standardisation and internationalisation of China's economic research, the elite DSOEs mobilise resources from all walks of life and gather a group of outstanding scholars and doctoral students to contribute to the reform and development of China's

economy and the research of contemporary economics. Elite DSOEs focused on introducing and popularising the Global North economics at the beginning of their establishment. However, theories of economics come from the summary of economic phenomena or are proposed to solve economic problems. They are unavoidably impacted by the economic, social, and institutional conditions of the place where they were generated. Therefore, the prevailing theories may be replaced by new ones. The Global North economic theories are not always universal. As a result, elite DSOEs now pay more attention to the development of Chinese economics. Committed to studying China's economic transition, they integrate the pursuit of prospering the country and benefiting the people into the focus of China's reform and development. They provide fertile soil for the prosperity and growth of modern economics in China.

Yifu Lin argued in 1994 that the next century would be the century of Chinese economists. Reality is developing towards this vision. Elite DSOEs have given birth to many critical economic theories. For instance, Yifu Lin's 'comparative advantage' theory not only made up for the shortcomings of development economics but also explored the path and direction of China's development; Qiren Zhou used institutional economics and property rights theories to design a large number of specific operational ideas for reforms in many fields. Some developing countries with similar conditions have noticed that China's economic theories are more helpful than those from developed countries. Meanwhile, the mainstream international economics community is also paying more and more attention to the Chinese economy and the economic thinking triggered by China's reforms. With the unremitting efforts of DSOE, Chinese economics has gradually caught up from a very backward state and continuously improved its influence.

6. Doctoral school strategies

In today's uncertain business world, the Chinese economy faces even tougher challenges after China has become an upper-middle-income country. As we will need to enhance the students' ability to adjust, analyse and develop in a world full of uncertainties, we regard it as our responsibility to do better research, become internationalise, and build closer ties with society, businesses, governments, and our alumni.

(Jun Zhang, Dean of the School of Economics Fudan University)

6.1 Doctoral school-enterprise cooperation

The elite DSOEs are well-known for their close connection with enterprises to benefit doctoral students' research and achieve a win-win situation. As the leading organisations for high-end talent training, the elite DSOEs have inherent advantages in experts, intelligence, and scientific research resources. Their strong teaching and scientific research capabilities are beyond the reach of many other organisations such as enterprises. Meanwhile, as the main body of the market economy, the enterprises are at the forefront of production and operation. They have strong abilities to update technology and transform scientific achievements, providing stages for doctoral students to display their results and realise their value. Therefore, doctoral school-enterprise cooperation helps cultivate well-rounded talents for the country and enhance the strength of universities and enterprises simultaneously to survive and develop in today's fierce competition.

With the cooperation between universities and enterprises, numerous out-of-campus bases were built recently to provide undergraduate and master students internship opportunities. Many of the attendances have been retained for their outstanding performance and become official employees. For doctoral students, doctoral school-enterprise cooperation aligns research with reality and provides them opportunities to put

theoretical knowledge into practice. The practice bases established under the influence of doctoral school-enterprise cooperation integrate resources inside and outside the elite DSOEs and built up the industry-education-research platforms to introduce the results of scientific research into actual operation. In addition, all elite DSOEs pay close attention to the economic development of their regions and obtain financial and policy support from the government through integration with local economic development plans.

Given that they all have close connections with the enterprises, the elite DSOEs adopted the dual supervisor system to combine academic scientific research with practical industrial application. PhD students within the system are supervised by two supervisors: an on-campus university supervisor and an off-campus industry supervisor. The on-campus university supervisor is mainly responsible for training students' professional skills and helping them with thesis writing. The off-campus industry supervisor mainly focuses on providing students with practical industry resources and information and supporting them with career growth. Apart from the dual supervisor system, the cooperation of elite DSOEs with the enterprises also leads to a large number of off-campus courses provided by industry leaders and elites. Those courses usually occur in the application scenario, making them vivid and accessible and inspiring for doctoral students.

6.2 International cooperation and exchange

In the context of economic globalisation, it is impossible for any subsystem to survive and develop in isolation. Only by active international communication and cooperation can it continue to gain vigour and vitality. Consequently, China's higher education has entered a new era of foreign exchanges and cooperation, which improve universities' teaching and talent cultivation capabilities and international competitiveness. Affected by this trend, the elite DSOEs also attach great significance to international cooperation and exchange,

which provides doctoral students excellent opportunities to broaden horizons and accumulate experience. I noticed that comprehensive, multi-domain, and rich-level international exchange and cooperation systems had been initially established in elite DSOEs and had become essential measures for them to attract high-level talents. Generally speaking, their international cooperation and exchange could be separated into three types.

The first type is international forums and conferences. Relying on their disciplinary advantages, the elite DSOEs integrate academic resources at home and abroad to launch a series of international forums and conferences in economics in recent years. These forums and conferences connect Chinese and foreign experts in academic, political and business fields to discuss issues of China and the world's economic development. Through these international forums and conferences, doctoral students and their supervisors could introduce their research results to more people, get helpful guidance and suggestions, and track and understand the most cutting-edge research directions and content in their fields.

The second type is international lectures and courses. The elite DSOEs invite well-known foreign scholars, including Nobel Prize winners, foreign ambassadors to China, global top journal editors-in-chief, and heads of economics organisations to share their findings and experiences with students and teachers. These lectures bring cutting-edge theories to elite DSOEs and provide strong support for teachers and doctoral students to get to know and engage in the newest academic research. Apart from lectures, elite DSOEs also offer short courses provided by scholars from overseas. These opportunities are attractive to doctoral students. On the one hand, they need a broader perspective and understanding of their field to do well in doctoral research. On the other hand, these activities give students opportunities to build their social networks, which are beneficial to their future academic careers.

The third type is student exchange. The elite DSOEs cooperate with many other world-class universities and doctoral schools to open up and promote high-level international scientific research and teaching cooperation such as dual degree programs (only for undergraduate and master students), short-term exchanges programs and joint training programs. Short-term exchange programs are crucial for doctoral students because numerous academic positions require overseas experience when recruiting talents. Relevant systems were built by elite DSOEs to guarantee student exchange, including but not limited to financial support systems and credit transfer systems. All elite DSOEs provide funds for doctoral students to go abroad for short term exchanges and recognise the credits obtained in overseas universities. Moreover, each elite DSOE has many supervisors presiding over or participating in international scientific research projects. As a result, the doctoral students also have opportunities to participate in those projects so as to understand the key points and difficulties of international research in their field and accelerate to become forward-looking talents with internationally competitive.

With the rapid development of the economy, information, culture, and science and technology, internationalisation has become an important feature and noticeable trend of elite doctoral education. All elite DSOEs in China provide doctoral education that could face the challenges of global economic integration, and the talents cultivated by them could adapt well to the international market and have a bright future.

Appendix 5: Research timeline

Table. Research timeline

Activity	Time
Pilot study	May 2019
Unconstraint brainstorming	September 2019
Focus group discussion (Shanghai)	November 2019
Focus group discussions (Beijing)	December 2019 to January 2020
Data analysis	February 2020 to April 2020
Semi-structured interviews (online)	April 2020 to August 2020
Data analysis	August 2020 to March 2021
Follow-up interviews and data analysis	March 2021 to October 2021

Appendix 6: Processes and results of the pilot study

1. Processes of the pilot study

Before the formal study, a pilot study was carried out in May 2019. The pilot study was conducted in Beijing and Shanghai, with ten PhD students participating. I conducted ten mock interviews and two focus group discussions (one in Beijing and one in Shanghai). The participants were invited to share their feedback after the mock interviews and focus group discussions in order to refine the research methods during the formal study and lend weight to the rigour of this work. I had yet to decide to concentrate on the discipline of economics at that time. Therefore, the ten PhD students were from different subjects, only one in economics. During the pilot study, seven basic capabilities related to elite doctoral school access were identified, which were later reduced to five and revised during the formal study.

2. Results of the pilot study

Combining the findings with the CA and other relevant studies, I propose seven capabilities that are significant for accessing to elite doctoral schools of economics in China. In the following part, a brief discussion on these capabilities will be provided as reference for the further part of this study.

Aspiration

Literature has suggested aspiration as a significant capability for school access (Reay et al. 2005; Hart, 2013; Sheng, 2014). From the study, a noticeable difference can be seen between middle-class and working-class students concerning their capability of aspiration. It seems that for middle-class students, the aspiration of attending an elite doctoral school starts from an early age and is taken for granted within their families. Like what was explained by Douglas (1975: 3), 'it is too true to warrant discussion'.

Both of my parents have higher education degrees which is quite unusual among people born in their age. I was told that I was already at an advanced stage and should start my own life from a higher point. When I was in my high school, I started to hope that I could pursue a PhD degree in one of the most elite doctoral schools. I told this to my parents and found that they feel the same way.

(Zhang, middle-class female student)

Meanwhile, a majority of middle-class students mentioned the impact of their parents' successful educational and life experiences on their PhD aspirations. They were told the importance of education and willing to work hard on their study.

Both of my parents are government officials. They often told me, based on their own educational and career experience, how education, especially higher education, has changed their life. They made me feel that what I have got now all comes from their hard-working, especially concerning higher education competition. I felt that they had high expectations on me and provided me more than enough support. So I always work hard on my study. I know what I want in the future and education is the most efficient way to get them.

(Li, middle-class male student)

Comparatively, working-class students' access processes are more blind. Their access to elite doctoral schools are more like 'unexpected gift' in their life.

I had never thought about doing a PhD until my master supervisor told me that there was a chance I can consider. I was a little worried about my financial situation at first. Then I have learned that I can apply for scholarships and student loans during my PhD. Since there won't be too much burden, I finally decided to do it.

(Wang, working-class female student)

Unlike middle-class parents who can act as the role model and provide encouragement and support to their children, working-class parents' impact is relatively small.

I made the decision by myself and told my parents after everything was done. They felt surprised and happy about the news. They do not have higher education degrees…I can feel that they are proud of me.

<div align="right">(Zhao, working-class male student)</div>

Overall, the study found that middle-class students expect for PhD in elite doctoral schools at an early age. Their parents' successful educational experiences and advantaged cultural capital seem to have a positive impact on their success. By contrast, working-class students' successes are more out-of-plan. Their access to elite doctoral schools is less attributed to the impact of parents.

Information

Capability to get relevant information is proved to have an impact on students' school access in the UK by Reay et al. (2005). They found that prospectuses, guides, visits, websites, league tables, career advisors, friend and family are the primary sources of information used by UK students. From the study, I found that in China, the website is mostly used by PhD applicants to collect information.

When I decided to start my application for PhD, the first thing I did was to go online and have a look at the official websites of the universities I would like to go.

<div align="right">(Li, middle-class male student)</div>

I found the recruitment information on the department website. The school website is informative. I reviewed it frequently to ensure that I did not miss any news.

<div align="right">(Zhao, working-class male student)</div>

Apart from the website, middle-class students also mentioned friends and family, which could provide them with hot knowledge, as a source of information.

My father also had a PhD degree at another university. Although it is not the same university, he did provide me with lots of help. His major is not economics, but he

<div align="center">460</div>

knows what a qualified research proposal should be like. I talked to him about my research plan, and he gave me some useful suggestions. He also conducted a mock interview with me, which I believe helpful.

(Liu, middle-class male student)

My mother has a friend whose son happened to be in another department of this university as a PhD student. I contacted him and asked about the details of the application. He provided me with a great number of personal suggestions which saved me lots of time and effort.

(Wang, middle-class female student)

Ball and Vincent's (1998) study found that with respect to school access, 'hot' knowledge is more helpful than 'cold' official information. The study found that working-class students tend to have no access to 'hot' knowledge which has a 'far higher currency and exchange value' (Reay et al. 2005: 157). It is in this way the inequitable differences and distinctions between different social class were maintained and reinforced.

Social relations (Guanxi)

Social relations were argued to influence school access by a great number of researchers in both the Global North countries and China (Reay et al. 2005; Sheng, 2014). From the study, I found that middle-class parents in China often use their privileged social relations to increase the possibilities of their offsprings elite doctoral school access. Social relations provide not only insights and information (as described above) but also influence and strategic approaches that could eventually facilitate student's success in the competition for doctoral school entry.

Both of my parents studied economics in university. After graduation, they went into business. Although they have both obtained a higher education degree, they did not have a close connection with the field of education. Most of their friends are working

in the area of business. They could not provide me with any direct Guanxi within my doctoral school. However, they helped me in other ways. Because of my parents, I got opportunities to do internship in different companies every summer, which made me stand out from the competition.

(Wu, middle-class male student)

Because my parents work for the government, they do not directly know people work in universities. They managed to get in contact with a professor at my university who introduced me to my supervisor. That is not an easy thing for my parents. They spent lots of time and energy. Lucky, my supervisor was satisfied with my background. I, therefore, got the chance to become his student.

(Li, middle-class male student)

Comparatively, students from intellectual families are more securely located in the field of elite doctoral education.

My parents work in this university, they know quite well about PhD application and gave me lots of guidance. We live on the campus; all my neighbours are teachers in this university. I knew some of the teachers in my department before application. I discuss with them about my interests, and they recommended my supervisor. My parents did not involved in the whole process, but I know I got all this because of them.

(Sun, middle-class female student)

As for working-class students, it seems that there is no social relations used during their application. The only benefit they mentioned was considering other successful people they know as their role model.

My family did not know anyone who works at the university. There is no support of this type I could receive from them. My father has a distant relative who find an excellent job after PhD graduation. I consider that relative as my role model.

462

Both inter-class and intra-class differences can be found in terms of the capability of social relations. Middle-class parents often manage with their privileged social capital to facilitate their children's school success. Different types of middle-class Guanxi are with different tie strength and route of connectivity to provide different benefit.

Knowledge and research ability

The selection of knowledge and research ability as a significant capability was inspired by Robeyns's (2003) study. I noticed from the study that PhD applicants' developments of relevant knowledge and research ability are more influenced by schools than families. It is easier for middle-class students to establish a close student-teacher relationship and to feel valued and confident to seek guidances when they require them.

> I enjoyed communicating with my undergraduate or master teachers. We still have a close relationship and keep in contact now.
>
> (Sun, middle-class female student)
>
> I felt stressed when communicating with my college teachers. My parents always encouraged me to seek advice from teachers due to their inferior knowledge of the higher education field. However, I don't know how to have a close relationship with them like some other students.
>
> (Qiao, working-class male student)

Apart from teachers' guidance and suggestions, practical supports provided by school is also essential. Some elite universities could offer information about and contacts with elite doctoral schools making their students' access practical and realisable. I believe that school support is an important resource for non-traditional students to make up their family disadvantages and realise elite doctoral school access.

I studied in an elite university for my undergraduate and master degree, which have a close connection with this doctoral school. I met my supervisor at a conference held by my university during my master. I then contacted him and sent some of my papers. He was interested in my research and offered me the chance to do my PhD.

(Zhao, working-class male student)

I also noticed that the more elite students' previously attended universities are, the less effort he or she needs to put into PhD examinations.

The PhD entrance examination is not hard. I have already learned everything during my undergraduate and master study. I spent around two months preparing for it.

(Zhao, working-class male student)

I did my undergraduate and master in an ordinary university which is less elite than this one. I spent more than half a year to prepare my PhD entrance examination. There were some new things for me to learn. I even spent a lot of money to attend cram school.

(Li, middle-class male student)

English test was found to be more complained by male students than female students which is in line with Zhang and Tsang's (2012) finding that there a positive gender gap (female better) in English learning.

I was struggling with my English during my preparation. The English tests during my undergraduate or master were much easier than the PhD entrance examination.

(Li, middle-class male student)

English is always my strong point. I got the highest score in English test for PhD entrance. I did not purposely study English during my college. I just watch the US or UK TV series and listen to BBC news every day. I feel I have a gift for language learning.

(Wang, middle-class female student)

Respect

The study found that gendered social norms and traditions make it more difficult for female students to have access to elite doctoral schools than male students. Working-class parents are less likely to encourage their daughters to apply for PhD compare with sons in China because they feel spending too much time on school might miss the best time for their daughter to get married.

> When I decided to apply for a PhD, my parents were worried about my marriage. They even told me that they wouldn't agree with me to do a PhD unless I have a boyfriend. Although this did not change my final decision, it bothered me a lot during that time.
>
> (Wang, working-class female student)

During my interviews, working-class students emphasized the traditional biased notions of female PhDs in China. However, these things were less mentioned by middle-class students. It seems that middle-class parents have more confidence in their daughter and want them to become open-minded through doctoral education and live their life in the way they like.

> My mother encouraged me to do my PhD and told me that an interesting person will always be attractive.
>
> (Wang, middle-class female student)

Emotions

During the study, negative mental states, including not being able to sleep, worrying, and lonely, were mostly mentioned by students. Because some students have spent one whole gap year preparing for PhD application at home, it is hard for them to maintain a regular schedule through self-control.

I stayed at home for a whole year without going to school or work. I had to plan my schedule by myself, and the only activity on it was studying. During that year, I studied at night and slept during the day. I don't know why, but I was not able to sleep at a normal time. That year has been a torment for me.

(Huang, middle-class female student)

Unlike middle-class students who often have a sense of confidence and certainty, worrying is more found to be mentioned by working-class students.

The preparation process was suffering. The competition was fierce, and many applicants were more excellent than me. I could not relax for an extended period.

(Wang, working-class female student)

I also noticed that the sense of lonely is more common among women than men. This might because PhD examination preparation could only be finished alone, 'women, as opposed to men, are socially and biologically channeled towards nurturing others, part of which includes giving social support. The difficulties implicit in fulfilling demands of support from others as well as the undervaluing of this role may contribute to the greater prevalence of psychological distress in women compared to men.' (Further,1999).

I was unhappy during that period because I could not spend enough time with others. I went to the library every day by myself. It was like a long and lonely journey.

(Sun, middle-class female student)

Another noticeable thing is that women suffer more than men when they have to live apart from their children, which is the usual case among Chinese PhD students. I still remember when I asked a young mother about the balancing between her personal life and study. That young lady suddenly cried and told me how regretful she was about missing her son's growing up.

Time-autonomy

466

The study shows that female students have more time stress because 'they have to cope with different sets of responsibilities and are subject to social norms that lay more responsibilities on them for the way the household is run or family members are publicly presented' (Robeyns, 2003: 82). In China, female students are often expected to spend more time to take care of the children or do housework. The unequal gender division with respect to domestic work and non-market care puts female students in a disadvantaged position compared to male students in PhD competition.

> I had to take care of my family while preparing for my PhD application. Things like cooking, house cleaning and laundry are time-consuming. As a mature applicant, I felt hard to be fully devoted in studying because I had different sets of responsibilities.
>
> (Jin, working-class female student)

Appendix 7: Sample interview transcript

This appendix provides a sample interview transcript to allow the reader to assess the material independently of my data selection. Given that I had mentioned in the participant's information sheet, 'All the transcripts and data analysis processes will be conducted by the researcher alone, which means no one else will have direct access to them', I contacted this participant when this thesis was written and obtained his agreement to place the interview transcript here.

In this transcript, Q refers to the interviewer, and A refers to the interviewee.

Q: Shall we start now?

A: Yes, please.

Q: The first question is, when did you first get the idea that you wanted to do a PhD?

A: I got that idea during my master's period. Because I... I studied computer science before. My story is a bit special.

Q: Can you tell me more about your background?

A: Of course. I majored in computer science as a master's student and transferred to economics for a PhD. During my master's period, I had some friends at another university who majored in economics. They often did some internships or relevant projects with their supervisors. They told me that combining economics with technology is the future trend. China had already come out with this kind of strategic plan. I then learned that the computer is merely a tool, and it has its own career bottleneck at around the age of 30 or 40. I applied for the PhD twice. Although I got second place on the written test when I made my first application, I did not succeed at that time. I succeeded at my second attempt.

Q: I'm sorry to hear that. Did you fail the interview?

A: Yes, I did not pass the interview.

Q: Was it an application-assessment system?

A: It wasn't at that time, although it is the application-assessment system now. The supervisor that I was interested in recruited two students. Their written test ranked first and third place. I ranked second place but failed the application. Maybe I did not perform well during the interview.

Q: Did you reflect on it later?

A: There may be three reasons. The first is that I did not perform well during the interview. At least not as good as other participants. The second may be because, at that time, the applicant who ranked third place came from the recruit university. This fact might have had some impact on the final result. Our written examination results were similar, and the supervisor had substantial autonomy to choose what he wanted. Also, when I applied for the first time, I didn't know anyone who could help me. I just browsed the official websites and online forums for information. So I failed my first attempt. Then I worked for two years and applied again.

Q: Why are you still so persistent after two years of work?

A: I considered PhD in economics a way to change my life. There was another classmate that had a similar understanding with me. He also failed the application. I had no idea what happened next to him. But I thought difficulties were inevitable, but persistence would always pay off. I held the belief that careers related to computer science are not promising. As a computer science student, I learned things like big data, artificial intelligence, advanced computer principles and data mining. Graduates, as far as I knew, would go to Internet companies. If we draw a curve of their career development routine, it will start to rise very fast because their income is high at the beginning. Then, their development would slow down at around 30 to 40 years old. If they cannot be promoted to manager, they must change jobs, go to some state-owned enterprises or start their

own business. Such a phenomenon is undoubtedly what the vast majority of people have to face. Now a lot of my master's classmates want to change careers. Computer science-related jobs are challenging. What I wanted to do at that time was to find a road. A road that might not be so easy at the starting point but can be easier with time going by. Economics doctorate led to such a road. Now I think I didn't make a mistake. And I now feel lucky to have made this choice. Now chatting with my classmates, I can feel that they are exhausted. Have you ever heard the word 996? It was like that. They go back home late every day and have a terrible work-life balance. I do not regret choosing economics. I believe it is a wise choice.

Q: So you just mentioned that during such a process, your friends' influence on you was particularly great?

A: Yes. I may not know all these things if I didn't meet them. They are my classmate's friends. Because their university was not far from ours, we met constantly and gradually built a close relationship. In the beginning, we just had some free chats with each other. As we became close friends, they shared this information with me.

Q: You mean if you did not meet them, you won't choose to apply for a PhD in economics?

A: Yes, we must admit that one's ideas and life choices are strongly shaped by the people we meet.

Q: What about teachers? The teachers when you were a master's student in computer science. Have you ever talked about this with them?

A: Well, yes. But to be honest, they didn't know this type of thing. Their expertise was the pure computer. They had no idea about other industries. Also, my master's university belongs to the military department, which means the teachers within it had sufficient projects in their own field and did not need to learn about other areas. So they basically did not influence me.

Q: How about your parents? Did they influence you?

A: Well, it is hard to tell. My parents were very supportive when I applied for undergraduate and master's studies, but they felt it was unnecessary for me to do a PhD. They are farmers. They did not understand what a PhD meant. I tried to explain, but it did not work. So I called them and asked for their opinion before starting my application. After that, I seldom talked to them about my progress. I avoided this topic until I succeeded in my second application.

Q: Did such silence bother you?

A: Well, it did bring me problems. I could not ask my parents for financial help. Maybe, I did not want to do that also. Although the doctoral school provides sufficient financial support, it is only during the doctoral study. My problem was with the cost of the doctoral application. I needed to pay various fees, such as application and materials fees. More importantly, I needed to go to other cities to participate in the written test and interview, which required transportation, accommodation and other expenses. All these together were a lot of money for my family.

Q: So, how did you solve this problem?

A: In the end, it was a friend of mine who lent me some money to pay for the application. I then worked the whole summer after my master's graduation and gave the money back to him.

Q: How about your second application?

A: The situation was much better because I got my own savings after two years of work. However, It seemed to me that the PhD was for students with no financial burden and good educational resources. People like me needed more effort and even luck to be successful.

Q: What was your parent's reaction when hearing the news that you were admitted for doctoral study?

A: They were happy, I think, although, in the beginning, they were hesitant about doctoral education. As the only doctoral student among the relatives and friends of my family, there was no previous example for my parents to refer to. They held suspicious attitudes toward what doctoral study means. Of course, what they care about most, and what is also the most practical and easiest to measure, is the increase in income it could bring.

Q: So what did you do for preparation? What information did you use, and where did you get them?

A: Well, I first used official information on the website. The easiest way to get information is to open whichever search engine, type in the name of the doctoral school and open its official website. The most attractive point for me is that every word on it is trustworthy.

Q: What specific information was on the official website?

A: I just looked at the university and doctoral school rankings and the introduction pages on the official website. This was just to have a brief overview. For detailed information, I consulted the friends I mentioned before—especially those who were economics PhD at that time.

Q: Some of them were already economics PhD students at that time. That's amazing.

A: Yes. If without their help, I wouldn't develop this idea. We were in a good relationship at that time, although we haven't had much contact recently. They were friends with one of my classmates and later turned into friends of mine.

Q: Apart from helping you develop this idea, were there any other things they had provided help?

A: The first thing was related to the reading list. Because I majored in computer science, I had to start from the very beginning. They recommended some classic books in this field for me to start. Because without some basic understanding of economics, I could not indeed begin preparing for the doctoral application. After finishing these books, they gave me a reading list specific to the written test and, together with it, a sample paper. I spent

a long time reading books on the list and analysing the sample paper. You know, I am an interdisciplinary applicant. Everything was not easy for me. Also, they provided me with the latest news about the application; for example, they told me there was no English listening test that year. So, in general, they gave me a list of reference books and a sample paper and told me there was no more English listening test that year. Figuring out these in advance saved my time and energy. And also, their help was proven to be useful as I ranked second place for the written test.

Q: How long did the whole process take?

A: Well, it took around one year. I participated in the written test in January and started one year before. I was lucky to know these friends early. So I started early and prepared well.

Q: How would you describe your level of hard-working during that year?

A: Actually, it was fine. I was not as hard-working as when preparing for my College Entrance Examination or master's application. Well, PhD application is less competitive than the other two. Because we choose the supervisor first; for example, if the supervisor recruits one to two students, they would ask applicants whose written test results rank top three to five to attend the interview. As for the interview, it is impacted by one's fortune. If the applicant is lucky enough, there are not many students that choose their intended supervisor. Their application would be less competitive. Generally speaking, I spent around five to six hours every day on preparation. There were a lot of books; I started with the basic ones. It was a long list, but I read them one by one. Some books were quite long and hard to understand. I even read many of them more than once. When I made my second application, I reread all of them.

Q: Apart from reading these books, did you make any other effort?

A: Well, I attended a lot of lectures. My university offered them. The lectures offered by the school broadened my horizons and, more importantly, enhanced my abilities that

could not be developed through attending professional courses alone. For example, the language and expression skills required for PhD interviews were something that needed extra training, which I obtained from school lectures. I even attended some school lectures as an alumnus before my second application.

Q: Is that allowed?

A: That is difficult, but I contacted my master's teachers, who helped me book the sessions. And also, I strongly suggest students who want to apply for a PhD take advantage of such resources as early as possible. Most of these things didn't come into use until I was preparing for my PhD application. I then learned that the school had prepared sufficient resources for our learning, especially self-learning, but many students did not even know their existence.

Q: Regarding other skills, how about English? Did you find preparing for the English test hard?

A: My English test score was low. But its preparation is not hard for me. I didn't use any material specific to the doctoral application. I just use the same materials as my master's preparation. There is nothing special. From my experience, the test was a little harder than CET-6, and they got similar questions.

Q: Did you attend any paid training programs?

A: No, I didn't. Everything was on my own.

Q: If everything was on your own, did you feel alone?

A: Yes. It was a very lonely process.

Q: How about the friends you mentioned? Did they comfort you?

A: Well, not really. As men, we do not comfort each other. We would help find solutions or provide some relevant information. But emotional support is limited.

Q: Were there any people around you who do not understand or oppose you during that time?

A: Of course there were. But honestly, I tried not to share this decision with others at the beginning. Because, understandably, others might have different opinions from me, and I do not want to be bothered by such things. Until I was admitted, I shared the news with some people around me. There is no need to tell them early because whether you can succeed is still yet to be discovered at that stage.

Q: You mentioned guanxi during the focus group discussion. Could you please tell me more about this? Did you use guanxi for your application?

A: Guanxi is helpful from my perspective. One thing is that you can contact your intended supervisor's student for help.

Q: Did you contact them?

A: To be honest, I did. But I failed when I made my first application and succeeded when I made the second one. From my experience, applicants with advantaged social networks would contact the supervisor directly, and others like me would try to contact the supervisor's students.

Q: Could you please tell me more about how you contacted the supervisor's student when you made your second application?

A: Well, usually, potential applicants would send an email to their intended supervisor. If the supervisor is interested in that person, they will replay things like 'welcome for your application'. Otherwise, they will tell you things like 'there is no space this year' or 'our expertise is not similar'. If the supervisor welcomes your application, you can make further contact. I contacted a friend's friend the first year, but he was unwilling to share things with me. He just gave me some basic information which I could also find online. The story related to my second application was interesting. When I made my first application, I knew another person who also applied for my interested supervisor. He was the person whose written test ranked first place. He was admitted, but I was not.

However, we became friends later and kept in contact. When I made my second application, he provided me with much help.

Q: That is quite interesting.

A: Absolutely. So when I decided to start my second application, he was the first and the only person I contacted.

Q: What type of help could this type of guanxi provide?

A: I would say information first. You can get information related to examination, and the person could help you determine which materials are useful and which are not. This would help save a lot of time. However, as I was about to make my second application, such things were unimportant to me. Because I had already experienced the whole application process, and the materials wouldn't change a lot. Another type of information which I found helpful was the information related to the program. Although we could find some background information related to the university and doctoral school online, detailed information about the doctoral programs was hard to find, making it difficult for potential applicants to determine which doctoral program they should apply for and whether the program they've chosen was a good fit. He recommended my current program. He told me that the program leader wanted to recruit some doctoral students with computer science backgrounds. This information helped me a lot.

Q: Is that program leader your current supervisor?

A: Not really. He was genuinely interested in me and admitted me at first. But he later learnt that he did not have enough space for all the students he admitted. So he referred me to another supervisor, which is my current supervisor. My current supervisor is from the industry, so he is less well-known.

Q: What do you mean by referring you to another supervisor?

A: It means I did not need to make another application. I was admitted, but not to the supervisor I wanted. The change of supervisor bothered me a lot. Our areas of expertise

do not fit very well. I know my interested supervisor's expertise well but not my current supervisor. I need to spend extra time and energy learning what I have never heard before. I feel tremendous pressure. I should have done more research before agreeing. I could try to contact other supervisors, at least those with similar expertise.

Q: Absolutely. You should at least have a try.

A: Apart from providing the information mentioned above, that friend also helped me meet my interested supervisor in advance. That supervisor was preparing for a conference and needed someone to help him. My friend recommended me. I left him with some impressions due to this. I can share with you some of the things I know. Some applicants with an advantaged family background might contact and meet supervisors directly with the help of their parents or other relatives. For these applicants, as far as they pass the written test, they will be admitted. Also, applicants with high written test scores will be admitted because supervisors like this type of student. For those who cannot stand out on the written test, guanxi is crucial because it is the supervisors that make the final decision.

Q: Do many of your classmates have a computer science background?

A: Not really. Only two of them have a computer science background. Most of my classmates majored in economics or similar things before. But I think my computer science background helped me a lot. I have four job offers now. Three of them are related to computer science. A lot of my other classmates without computer science backgrounds still have no offer until now. Many companies now want someone who knows things like big data, artificial intelligence and cloud computing. I attended a conference this year and met a supervisor. I showed him my analysis conducted through the computer, and he was attracted. He recently contacted me to help him process some data because he cannot do it by himself. Many people in our field know nothing about programming and computer science. Apart from computer science, mathematics is also a

good background to have. A lot of the supervisors in the economics department are with mathematics PhD.

Q: What else do you think your previous university helped you?

A: I have mastered the necessary knowledge and skills at my previous university. Also, I value the opportunities it provided me to experience academic research. I was fortunate to be an assistant in a research project before, where I got to know some supervisors and PhD students. I learned a lot from them about the knowledge and methods of doing research, which benefited my doctoral application later. Finally, thanks to its excellent location, I was able to make friends with students from other elite universities around.

Q: How did that happen?

A: My hobby is basketball. I played it every weekend with students from my university and other universities nearby when I was a master's student. Through basketball, I made a lot friends. They were very kind and helped me tremendously with my PhD application.

Q: It seems that extracurricular activity helped you. Apart from basketball, did you participate in other activities?

A: No, I didn't. Basketball was the only extracurricular activity I participated. This hobby can be cultivated first because I am naturally muscular and talented, and secondly, this sport does not cost much money. In general, the opportunities for me to participate in extracurricular activities were less than that of my classmates from wealthy families.

Q: That makes sense.

A: But I was lucky because I truly made a lot of good friends through it. Every time any of us were in trouble, others would try their best to help that person. This is also the spirit of basketball.

Q: Do you have a lot of female classmates?

A: There are some female students in my department, but not many.

Q: Do you think their application is more challenging than yours?

A: I know some supervisors who do not want to recruit female students. There are some reasons for this type of preference. Some supervisors fear that if female students get married and have a baby during their PhD period, it will occupy too much of their time and energy, negatively impacting their studies. Also, some supervisors consider female students emotional and sensitive. I know some female students have conflicts with their supervisors or classmates. This type of thing would distract them from doing their own research.

Q: How many doctoral students does your supervisor now have? How many of them are women?

A: He now has seven male students and one female student.

Q: What do you think caused such an imbalance?

A: As far as I know, my supervisor does not have a gender preference when recruiting doctoral students. There are fewer female applicants than male applicants.

Q: Why are there fewer female applicants than male applicants?

A: I think there is only one reason for women to do a PhD—they want to work in academia. A lot of female PhD I know made their application out of this reason. While there are many reasons for men to do a PhD, some of them want to work in academia, while others want to work in industry or just want to realise self-improvement.

Q: Why women cannot realise self-improvement?

A: Maybe because of China's tradition. Women need to take care of their families. At least, I do not think women are less intelligent than men. Many of the female students I know did their research well. In addition, the job market prefers men to women. Like supervisors, employers also worry about women's marriage and child-raising issues. Another issue is related to time. Most of the PhD graduates are around 30 years old. It is hard for females in China to find a boyfriend and get married at that age because men in China prefer women younger than them.

Q: Can you tell me a little bit about the financial situation of doctoral students in your university?

A: We do not have much financial pressure. There is a tuition fee, but there is an academic scholarship, which everyone has. The academic scholarship can cover the tuition fee. The minimum amount of it is 10,000, and the tuition fee is 10,000 as well. Apart from the academic scholarship, we also have a lot of other scholarships.

Q: How to get other scholarships?

A: You need to have publications. The doctoral school award those who make publications. There are also national scholarships which are granted to students with good grades. Also, there are a lot of enterprises that provide us with scholarships. Generally speaking, finance is not a big issue for PhD students in China.

Q: How about the living expense?

A: It is also not a big issue as we have a lot of methods to earn money as far as we want. Take me as an example; every year in total, I can even save around 30,000 to 50,000. I did some projects which gave me money and also won some awards. Together it is a large amount of money.

Q: Did you feel anxious during your application process?

A: Not really. Because unlike undergraduate or master's entrance, which is something necessary. Doctoral study is just something personal. Even if I fail, I still have a lot of other choices and can apply later. I felt no pressure, especially when I made my second application. If I fail, I could continue doing my job.

Appendix 8: Ethical considerations in the approved ethical form

UCL ethical form reference number: Z6364106/2019/06/33

In this study, the author will follow the ethical guidelines provided by The General Data Protection Regulation (GDPR) 2018 for research stages and participants involved. In the following of this part, the author will discuss potential ethical issues that may arise in this research and the way she is going to manage them.

Informed Consent

In order to ensure that participants are not coerced into this research, the author will adopt opt-in sampling method. This will start with a visit to the department office explaining the aim and method of this research to the director and make a request for a contact e-mail list of the doctoral supervisors. Then the researcher will send the recruitment letter of this research directly to the supervisors on the contact list via e-mail. The information sheet will include some basic information of this study, why they have been invited to take part, the requirements of participants (including detail of amount of time needed) and their freedom to decline to participate and/or withdraw at any time. Given that this research will need the participation of both doctoral supervisors and their students, the recruitment letters sent to supervisors will include an extra explanation and requirement for the participation of their students (including making it clear that they will be interviewed separately). After receiving reply for participation, the author will provide the participant with an information sheet including a written description of the research, the nature of the study, the method for the protection of participants and data and the way their contribution will be reported. During this process, participants will be able to ask questions about the research and withdraw at any time. Then one week prior to the interview, the author will send consent forms

including consent for the recording of the audio to participants via e-mail to provide them ample time to read and study. Those who are not willing to be audio recorded will not considered as participant in this research. The formal hard copy consent forms will be signed before interview. Interviews will last around one hour and will be conducted face-to-face and will be audio-recorded. It will be the participants that determine the times and locations for the interviews.

Confidentiality

Another ethical sensitive issue is that participants will have familial or institutional linkages, therefore, they might feel apprehensive to express their ideas or views. Although the participants will be interviewed separately, it is still necessary to take some other methods to increase their openness to express views and perspectives frankly. Because the individual perceptions will be sought, it is normal that the participants will feel worried that their data will be reported outside the research process or be reported to other participants during the research process. Therefore, full confidentiality will be required and the author will make it clear to participants that she would never discuss the content of interviews with other participants formally or informally.

Following GDPR guidelines, factors related to individual identities and identification will not be disclosed during processes of data collection, analysis, reporting and dissemination. All the digital recordings will be stored in the author's laptop with the protection of a password to prevent access by others until the exam board confirms the results of her dissertation. All the transcripts and data analysis processes will be conducted by the author alone which means no one else will have direct access to them. The transcripts of these interview will be anonymised and will be retained for two years. If the participants are quoted in the final thesis, their name will be anonymised. The author will always try her effort to explain the participants that the richness of this research will be determined by the

variety of their experience and ideas, there is no 'right' answer or comments for the questions, and no preferred or predetermined viewpoints that the authors would like to hear.

Insider Research

It is a fact that as a Chinese PhD student, I am very close to my study object. There are some critics on insider research arguing that researcher can no longer be an objective observer, and might have a biased view towards the context and may unduly influence the result (Denzin and Lincoln, 2005). However, I did my master's degree in UK and then applied for my PhD also in the UK which means I am not familiar with choices of PhD in China and less biased. Also, it is argued by Manion and Morrison (2000) that if the research process is openly shared in detail and honestly represented, then the readers can consider that they are in alignment with the researcher. Therefore the author believes that she can improve the quality of the research by providing narrative richness and authenticity of information.

Publication

The publication of results for the research especially references to participants and their views might influence their openness in the interview. The participants may be concerned about the protection of their recorded audio material, and the form in which the findings of the study are going to be disseminated. The author will use the collected data only for this research and make sure that the participants cannot be identified if the findings become published later in academic areas. The author will also invite the participants to access her analysis of their interview transcripts and to discuss the findings if they wish before submission of her thesis or publication of the result. Some interviews will be conducted in Chinese, however, this will not be a problem because Chinese is the mother tongue of the

author, she can understand and translate them into English. The researcher can also understand the different civil, legal, financial and cultural conditions in China. The whole research processes will refer to international guidelines and conform to relevant local regulations in China as well as comply with the UCL research ethics policies and guidelines and other relevant UCL policies and procedures. The transcripts will be kept in Chinese for analysis through NVivo and will be translated into English for further works.

Participant Information Sheet

Name of the department: Institution of Education, University of College London
Name of the researcher: Wen Xiaoyu

Introduction

I am Wen Xiaoyu, working for Institution of Education, University of College London, I am doing a research on Chinese students' elite doctoral school access. I am going to give you information and invite you to be part of this research. Please feel free to contact me if there are any questions and I am looking forward to your reply on final decision for the participation.

Purpose of the research

It seems that the enrolment of PhD students have increased dramatically in recent years. However, the researcher found that there are some new types of inequalities with the expansion of PhD enrolment. The researcher believes that you can help her by telling her about your PhD enrolment experience and your views towards the process. The researcher wants to understand more about factors shaping PhD students' advantage or barriers on their PhD access and the inequalities created in these processes.

What will you do in the research?

This research will involve your participation in a focus group discussion and a follow-up interview.

Why have you been invited to take part?

You are being invited to take part in this research because the researchers feel that your enrolment experience on PhD can contribute much to her understanding and knowledge of relevant issues.

Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. You may change your mind later and stop participating even if you agreed earlier

What information is being collected in the research?

The researcher would like you to share your personal experience, beliefs and understandings towards PhD enrolment and you do not have to share any knowledge that you are not comfortable sharing. The researcher will audio-record the whole conversion with proper method to protect its confidentiality.

Who will have access to the information?

All the transcripts and data analysis processes will be conducted by the researcher alone which means no one else will have direct access to them.

Where will the information be stored and how long will it be kept for?

All the digital recordings will be stored in the researcher's laptop with the protection of password to prevent access by others until the exam board confirms the results of her dissertation. The transcripts of these interview will remove all identifying information and will be retained for two years.

Sharing the results

If your words are quoted in the final thesis, you name will be anonymised. The researcher will only use the collected data for this research and make sure that you cannot be identified if the findings become published later in academic areas. You are also invited to access to the analysis of your interview transcripts and to discuss the findings if you wish before submission of the thesis or publication of the result.

What happens next?

We are asking you to help us learn more about Chinese students' PhD enrolment. If you accept, please send the signed consent form back and you will receive follow-up email discussing further actions.

Researcher contact detail

Name: Wen Xiaoyu

e-mail: stnvxwe@ucl.ac.uk

Consent to take part in the focus group discussion and interview

This consent form is for PhD students in Peking University (or other universities) and who are inviting to participate in research conducted by Wen Xiaoyu.

- I confirm that I have read the participation information sheet and understood the purpose of the study. Also, the researcher has answered any queries to my satisfaction.
- I confirm that I have understand how my personal information will be used in this study and what will happen to it (how it will be stored and for how long).
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.
- I understand that anonymised data (data that do not identify me personally) cannot be withdrawn once they have been included in the study.
- I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available.
- I understand that I will not benefit directly from participating in this research.
- I agree to my interview being audio-recorded.
- I consent to being a participant in the project.
- I understand that signed consent forms and original audio recordings will be retained in Wen Xiaoyu's laptop with a password until the exam board confirms the results of her dissertation.
- I understand that a transcript of my interview in which all identifying information has been removed will be retained for two years.

- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I am willing to share personal information, including my gender and my parents' occupations, in this consent form.

Information for the researcher

Name: Wen Xiaoyu

Supervisor: Tatiana Fumasoli

Degrees: PhD degree

Department: Institution of Education, University of College London

E-mail: stnvxwe@ucl.ac.uk

My gender: _____

My father's occupation: _____

My mother's occupation: _____

(Print Name): _____

Signature of participation: _____   Date: _____

Appendix 11: Classification of social class in this study

This study understands doctoral students' social class in terms of their parents' socioeconomic status. Nevertheless, it seems that a wide range of factors can be used to define a person's socioeconomic status, including but not limited to parental educational background, marital status, cultural capital, intergenerational resources, and career histories. As a result, a wealth of studies that focus on the classification and definition of social class in contemporary China were found (Lu, 2010; Ru et al., 2011; Bian et al., 2015; Wang, 2015). I utilised Lu's (2012) occupation-based theoretical model to distinguish social class in this study. This model was selected because occupational classification is the most basic and easily operated way to identify the social class. In today's China, there exist many occupational subgroups that differ profoundly from one another in terms of income, reputation, levels of educational attainment, and political backgrounds, which makes occupational classification possible (Li and Li, 2010). Lu (2012) argued that Chinese social stratification is based on the division of labour (i.e. the divisions between manual labour and non-manual labour, technical and non-technical); authority ranking (i.e. the divisions between managers and managed, high-level manager and middle-level manager); productive relations (i.e. the division between the owner of means of production and employee) and institutional segregation (i.e. the division between in-system unit and the outside-system unit, core department and marginalised department). These four divisions shape social relations and social hierarchy in today's China (Lu, 2010). People's positions within the social hierarchy determine their socioeconomic status and occupation of three types of resources (organisational resource, cultural and technical resource, economic resource) (Lu, 2010).

Although both the Global North countries and China use people's occupational status to distinguish their social class, there are some differences. In the Global North countries, the occupational classification concentrates only on productive relations. However, in

China, other factors such as organisational, cultural and technical resources; educational backgrounds are also considered (Lu, 2012; Guo and Guo, 2016). For example, Sheng (2018) identified that people's educational achievements and party membership are closely connected to their social status. A person with higher education level is more likely to possess more cultural and technical resources and become a professional elite (professionals and technocrats) with higher social prestige; while a person with both higher educational attainment and party membership can obtain abundant organisational, cultural and technical resources and become administrative elite (party and government officials) with 'the attendant social prestige, authority and material privileges' (Sheng, 2018: 10). Based on this fact, Lu (2010) identified ten social groups concerning different types of resources in China. The ten social groups could basically cover all the Chinese people. The information is listed below (see **Table** below).

Table. Ten social fractions in China

	Social class	Social group	Possession of three types of resources	Proportion in the total population
1	Middle class	party and government officials	great deal of organisational, cultural and technical resources and some economic resources	2.1% (2.6% in urban area and 0.2% in rural area)
2		manager of enterprises	large degrees of organisational, economic and cultural and technical resources	1.6% (3.4 in urban area and 0.4 in rural area)
3		private entrepreneurs	large degrees of economic resources	1% (1.5% in urban area and 0.7% in rural area)
4		professionals and technocrats	large degrees of cultural and technical resources	4.6% (8.6% in urban area and 0.7 in rural area)
5	Working class	clerical people	a small amount of cultural and technical or organisational resources	7.2% (14.2% in urban area and 3.9% in rural area)
6		household business	a small amount of economic resources	7.1% (12.3% in urban area and 5.2% in rural area)
7		service staff	a small amount of economic resources	11.2% (20.1% in urban area and 5.2% in rural area)

8		industrial workers	a small amount of economic resources	17.5% (21.2% in urban area and 8.3% in rural area)
9		peasant	a small amount of economic resources	42.9% (2.7% in urban area and 70% in rural area)
10		jobless or unemployed or semi-unemployed person	nearly no resources	4.8% (10.2% in urban area and 1.2% in rural area)
	Source: Lu (2010)			

In recent years, a growing number of studies could be found to try to define the newly emerged middle class in China. Scholars generally agree that managers of enterprises, professionals and technocrats are the components of the middle class (Li, 2000; Li, 2005; Qin, 1999). Meanwhile, a relatively controversial issue is whether party and government officials and private entrepreneurs should be considered middle-class. Although some scholars such as Qin (1999) maintains that party and government officials should be excluded from the middle class, in this study, I included them as they were offered lifelong employment and generous insurance and welfare benefits (Walder, 1986; Li and Li, 2010). Although they are not the owners of production and economic resources, they could control and distribute a large amount of them. In addition, although the party and government officials were lakes of cultural and technical resources before 1980, in recent years, the government's large amount of education and training has changed this situation. Furthermore, a significant number of newly recruited party and government officials have higher education degrees. As a result, this class now possess abundant cultural resources. As for private entrepreneurs, a primary concern is about the conflicts between capitalist ownership and Communist ideology. However, after the reform and opening up, the Communist Party welcomes party members from all social classes, including private entrepreneurs. According to a survey conducted by the Private Economic Research Association in 2010, 30% of private business owners were party members in China. Moreover, the vast majority of people in this class emerged after the

491

reform and opening up, and they were outstanding talents who worked hard on their own. Hence, in this research, party and government officials, managers of enterprises, private entrepreneurs, professionals and technocrats were considered middle-class.

Lu (2010) mentioned that with the rapid economic growth, China is in the golden age of the rise and development of the middle class. In 1978, the middle class accounted for only 5% of the country's total population (Lu, 2010). This proportion rose to 9.5% in 1991 and 22% in 2007 (Lu, 2010). This promotion was caused not only by economic development but also by policy adjustment. In 1997, China announced that the economic system is composed of mainly public ownership, but meanwhile, other types of ownership are also welcomed. Moreover, the distribution of China's middle class is uneven. Most of the middle class is concentrated in the Southeast coast and large cities. In 2007, the middle class in Shanghai reached 40% of the total population.

Bian et al. (2015) further point out that the images of the middle class in China are different from those in highly stratified Global North countries, which are closely related to stable lifestyle, active political participation and mainstream values. China's transitional society is more fluid and unstable (Bian et al., 2015). Hence, it requires more effort for the Chinese middle class to maintain their social positions or for others to realise upward social mobility (Sheng, 2018). For instance, in 2009, 1.05 million people applied to work for the government, and the average recruitment ratio for each position was 78:1. Similar, in 2020, 98,557 applicants from Tianjin compete for 2,996 teaching positions. The facts mentioned above, together with the one-child policy[29], result in Chinese parents' great sacrifices to ensure their children's educational achievements. Parents, sometimes even the entire family, place all of their hopes in their single offspring's academic success and the realisation of upward social mobility.

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[29] The one-child policy was initiated in the late 1970s by the central government of China in order to limit the growth rate of the enormous population in China. It was announced to end in early 2016.

In terms of the working class, Karl Marx defined them as individuals who have nothing to sell but their labour-power to produce economic value for the owners of the means of production or dependent on the welfare state (Palmer, 2015). This definition still plays an essential role in today's China. In this research, working-class[30] refers to those who do not possess the means of production (the means of production are jointly owned)[31] do labour work and rely on wages (or social welfare) as their primary source of income. As a result, despite getting rid of total proletariat, they were able to master merely a small amount of resources (organisational resource, cultural and technical resource, economic resource).

Moreover, as was argued by Reay et al. (2009: 5): 'the old binary between working and middle class has never explained enough about the myriad ways in which social class is acted out in people's lives.' Recent Global North studies also highlight the significance of intra-class differences. There are also segmentations within different social classes in China, and the intra-class differences take different forms, which requires more nuanced and sophisticated analyses. Lu's social categorisation disaggregated crude class classifications and explored different social fractions within China's working class and middle class. Hence, it allows its users to analyse both inter-class and intra-class differences in the Chinese context.

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[30] Some studies identify people work as party and government officials, manager of enterprises, private entrepreneurs, professionals and technocrats who hold the highest positions as the upper class. Those people usually are the wealthiest members of society, and wield the greatest political power. Because the percentage of the upper class in total population is too small. And the sample students are hard to find. This study will concern only the middle class and working class and different fractions within these two social classes.

[31] The working class in the past did not own the means of production at all. The current working class in China is also the (co-)owner of the means of production. They enter the production process equally and share the fruits of output. Therefore, from the economic perspective, the working class is also in the master position of Chinese society.

Appendix 12: Process of the focus group discussions

Before starting each focus group discussion, I made a 15-min presentation with slides in Chinese to briefly introduce the basic meaning of capability, this research project, and the participants' rights. During the focus group discussions, instead of adopting an investigative role by asking questions, controlling the discussions and engaging in the dialogue, I perceived myself as a 'facilitator' or 'moderator' of discussions between participants rather than myself and the participants. In other words, I took 'a peripheral, rather than centre-stage role' since 'it is the inter-relational dynamics of the participants that are important, not the relationship between researcher and researched' (Parker and Tritter, 2006: 26). Arguing that group interaction was more important than answers themselves, I made great efforts to stimulate discussions and thereby understand 'the meanings and norms which underlie those group answers' (Bloor et al., 2001: 42). Moreover, synergy between participants was stressed, whereby all the participants were ensured to contribute to the discussion in some way. All the focus group discussions were 'balanced rather than dominated by a small number of participants' (Parker and Tritter, 2006: 32).

During the focus group discussions, participants were first encouraged to write down capabilities they believed were significant for elite economic doctoral school access. Later, all the capabilities on notes were transferred by me onto a blackboard. The participants were invited to group items with similar meanings together and chose a name and definition for each group. After generating as many capabilities as possible, I invited the participants to discuss the list and pick what they believe important or not and explain the reasons. I believe this is important because it can provide a context to understand 'why a participant feels one way rather than another' (Morgan, 1998: 5). Instead of generating consensus, I tended to identify views that different proportions of the group support. However, each focus group discussion ended up with a capability list that

captured the majority of the participants' standpoints. Which was less important but also

could answer the research question to a certain degree.

Consent to take part in the interview

This consent form is for doctoral supervisor in Peking University (or other universities) and who are inviting to participate in research conducted by Wen Xiaoyu.

- I confirm that I have read the participation information sheet and understood the purpose of the study. Also, the researcher has answered any queries to my satisfaction.

- I confirm that I have understand how my personal information will be used in this study and what will happen to it (how it will be stored and for how long).

- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.

- I understand that anonymised data (data that do not identify me personally) cannot be withdrawn once they have been included in the study.

- I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available.

- I understand that I will not benefit directly from participating in this research.

- I agree to my interview being audio-recorded.

- I consent to being a participant in the project.

- I understand that signed consent forms and original audio recordings will be retained in Wen Xiaoyu's laptop with a password until the exam board confirms the results of her dissertation.

- I understand that a transcript of my interview in which all identifying information has been removed will be retained for two years.

- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I am willing to share personal information, including my gender and my parents' occupations, in this consent form.

Information for the researcher

Name: Wen Xiaoyu

Supervisor: Tatiana Fumasoli

Degrees: PhD degree

Department: Institution of Education, University of College London

E-mail: stnvxwe@ucl.ac.uk

My gender: _____

My father's occupation: _____

My mother's occupation: _____

(Print Name): _____

Signature of participation: _____   Date: _____

Appendix 14: Protocol for interview with doctoral students

Step 1: a 5-min research statement in Chinese to inform the aim of the interview and the interviewee's rights.

Note: the research statement should not impose any prior theoretical explanations or guidance on the participants to help them understand or explain their thoughts, feelings or experiences in a particular way. Nor should the researcher utilise theoretical notions such as 'social capital' or 'economic capital' to facilitate the discussion. Try to give participants voices during the interview and to increase the possibility of generating new knowledge rather than simply confirming the existing ones.

Step 2: ask questions

Questions should:

• Be open-ended rather than close-ended to get lengthy and descriptive answers.

• The researcher should try to avoid leading questions which may cause biases.

• During the interview, the researcher should avoid terms that participants cannot understand, given their knowledge, cultural background, etc.

• The questions should be kept as short as possible. No two-in-one question should be asked.

• The researcher should try to avoid questions with a strong positive or negative association.

• The researcher should start with some warm-up questions to help participant feel comfortable. Due to the fact that a brief introduction on this study had already been made before focus group discussion, there will be no need to explain more before semi-structured interview.

Sample questions:

Capability to aspire: being able to think and reason critically to develop hope and expectations and express and realise them properly.

• For what reasons did you chose to apply for a PhD?

• Who had impacted you to make the decisions on doctoral application?

• Have you ever shared your doctoral application with others before success?

• Did you have any concerns around this decision?

Capability to be respected: being able to act inclusively, be treated with dignity and pursue deserved opportunities.

• Do you think your gender impact your doctoral application? If yes, how?

• Have you ever suffered from any sexism?

Capability to establish guanxi: being able to connect with valuable others through social networks and to provide and receive social support.

• Have you ever used any guanxi during your application? If yes, tell me about it.

Capability to obtain information: being able to collect, process and apply useful information.

• What types of information did you use for doctoral application?

• How did you collect those information?

Capability to acquire knowledge and competency: being able to be educated, to master and make use of the required knowledge and competencies.

• What types of knowledge and competency are important for a successful doctoral application?

• How can people acquire such knowledge and competency?

During step 2, the researcher should:

• Try not to interrupt participants. If something is important or not fully discussed, the research could make a note and come back to the point later.

- If a participant provides answers elating to a question the researcher has not yet asked, the researcher should record the question and avoid repeating later.

- If time permits, the researcher should ask the participant if there is anything else he or she would like to share.

The researcher should use probing questions to gather as much information as possible. Here are some types of probes.

Detail-oriented probes: 'Who else was involved?' 'When did that happen?'

Elaboration probes: 'Could you tell me more about that?'

Clarification probes: 'You mentioned …, what do you mean by it?'

Uh-huh probes: Encourage participants to continue by making affirmative but neutral comments.

Echo probes: Repeating the last thing mentioned and ask participants to continue.

Step 3: express thanks for their cooperation and ask whether the participant is available for a following-up interview if necessary.

Appendix 15: Protocol for interview with supervisors

Step 1: a 5-min research statement in Chinese to inform the aim of the interview and the interviewee's rights.

Note: the research statement should not impose any prior theoretical explanations or guidance on the participants to help them understand or explain their thoughts, feelings or experiences in a particular way. Nor should the researcher utilise theoretical notions such as 'social capital' or 'economic capital' to facilitate the discussion. Try to give participants voices during the interview and to increase the possibility of generating new knowledge rather than simply confirming the existing ones.

Step 2: ask prepared questions

Questions should:

- Be open-ended rather than close-ended to get lengthy and descriptive answers.

- The researcher should try to avoid leading questions which may cause biases.

- During the interview, the researcher should avoid terms that participants cannot understand, given their knowledge, cultural background, etc.

- The questions should be kept as short as possible. No two-in-one question should be asked.

- The researcher should try to avoid questions with a strong positive or negative association.

- The researcher should start with some warm-up questions to help participant feel comfortable. Due to the fact that a brief introduction on this study had already been made before focus group discussion, there will be no need to explain more before semi-structured interview.

Sample questions:

Capability to aspire: being able to think and reason critically to develop hope and expectations and express and realise them properly.

• Do you prefer determined applicants? If yes, how do you tell them from others?

Capability to be respected: being able to act inclusively, be treated with dignity and pursue deserved opportunities.

• Do you think applicant's gender impact your decision? If yes, how?

• Do you think the society is unfriendly for doctoral students with particular gender?

Capability to establish guanxi: being able to connect with valuable others through social networks and to provide and receive social support.

• Do you prefer students with guanxi? If yes, what type of guanxi?

Capability to obtain information: being able to collect, process and apply useful information.

• What is your recommended method for doctoral applications to collect information?

• Do you think successful applicants might use different information strategy? If yes, what are the differences?

Capability to acquire knowledge and competency: being able to be educated, to master and make use of the required knowledge and competencies.

• What types of knowledge and competency are important for a successful doctoral application?

• How can students acquire such knowledge and competency?

During step 2, the researcher should:

• Try not to interrupt participants. If something is important or not fully discussed, the research could make a note and come back to the point later.

• If a participant provides answers elating to a question the researcher has not yet asked, the researcher should record the question and avoid repeating later.

- If time permits, the researcher should ask the participant if there is anything else he or she would like to share.

The researcher should use probing questions to gather as much information as possible. Here are some types of probes.

Detail-oriented probes: 'Who else was involved?' 'When did that happen?'

Elaboration probes: 'Could you tell me more about that?'

Clarification probes: 'You mentioned …, what do you mean by it?'

Uh-huh probes: Encourage participants to continue by making affirmative but neutral comments.

Echo probes: Repeating the last thing mentioned and ask participants to continue.

Step 3: express thanks for their cooperation and ask whether the participant is available for a following-up interview if necessary.

Appendix 16: Guidelines for field notes

Field notes can be taken:

(1) in the early stages of the study when the researcher made efforts to get familiar with elite doctoral schools and the participants;

(2) during the conduction of semi-structured interview to record contexts and background details;

(3) whenever the 'reflexive processes' occurred (Van Draanen, 2017: 364).

Types of acceptable field notes:

(1) On-the-fly notes: words, phrases or points the researcher wanted to remember

(2) Summary notes: weekly summaries of what happened and what the researcher plan to do next

(3) Reflexivity notes: notes about the researcher's feelings and problem-solving processes

(4) Interpretation notes: notes about the researcher's decisions during the sense-making processes

Appendix 17: Capability lists for comparisons

Lorella Terzi (basic capability to be educated)	Nussbaum (central human functional capabilities)	Melanie Walker (capability list that take up the specificity of gender equality in education)	Mario Biggeri (children's valued capabilities)
1. Literacy 2. Numeracy 3. Sociality and participation 4. Learning dispositions 5. Physical activities 6. Science and technology 7. Practical reason	1. Life 2. Bodily health 3. Bodily integrity 4. Senses, imagination, and thought 5. Emotions 6. Practical reason 7. Affiliation 8. Other species 9. Play 10. Control over one's environment	1. Autonomy 2. Knowledge 3. Social relations 4. Respect and recognition 5. Aspiration 6. Voice 7. Bodily integrity and bodily health 8. Emotional integrity and emotions	1. Life and physical health 2. Love and care 3. Mental well-being 4. Bodily integrity and safety 5. Social relations 6. Participation 7. Education 8. Freedom from economic and noneconomic exploitation 9. Shelter and environment 10. Leisure activities 11. Respect 12. Religion and identity 13. Time-autonomy 14. Mobility
Alkire and Black (capability list for universal use)	**Swedish approach (quality of life measurement in Sweden)**	**Ingrid Robeyns (capability list for gender equality assessment)**	**Alkire (capabilities relevant to educational processes)**
1. Life 2. Knowledge and appreciation of beauty 3. Work and play 4. Friendship 5. Self-integration 6. Coherent self-determination 7. Transcendence 8. Other species	1. Mortality 2. Physical and mental health and healthcare use 3. Employment and working hours 4. Economic resources 5. Educational resources 6. Working conditions 7. Political resources 8. Housing conditions 9. Family and social integration 10. Leisure and recreation	1. Life and physical health 2. Mental well-being 3. Social relations 4. Education and knowledge 5. Domestic work and non-market care 6. Paid work and other projects 7. Bodily integrity and safety 8. Political empowerment 9. Shelter and environment 10. Mobility 11. Leisure activities 12. Time-autonomy 13. Respect 14. Religion	1. Empowerment 2. Knowledge 3. Work 4. Relationship