

**Universities and regions—the role of regional
engagement in the development of new universities
in India**

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Declaration

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

The word count of this thesis is 44,981 words.

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Date: May 14, 2019

Abstract

This study explores the role of regions in the development of new universities in India. It was carried out in seven national-level single disciplinary universities—referred to as higher education institutions (HEIs)—established by the government. The HEIs were aged between eight to twenty years old; and were situated in semi-urban, urban and metropolitan regions. I collected the data by conducting semi-structured interviews with seventy-three faculty members in the HEIs, and from official documents, media reports and opinion pieces about the HEIs. Using the conceptual frameworks about institutionalisation of regional engagement of universities and path dependency, I investigated the tensions and challenges faced by the new HEIs for leveraging contributions from the regions, and the factors that shaped their openness to engage with the regions.

I find that the placement of the HEIs in their corresponding regions—an exogenous contingent event—, and the influential role their Heads can have effects that are hard to shake off causing their path dependent evolution. Having to develop their infrastructure and constrained by resources, the new HEIs started their academic programmes first, followed by research activities, that led to reactive sequences reinforcing their evolutionary paths. Three antecedents—historical relational networks, threshold resources, and institutional legacies— influenced the tensions and challenges faced by the new HEIs as they engaged with the region during their path formation and development phases of their evolutionary paths.

I used the conceptual frameworks of path plasticity and motivational systems theory to find that the varied goals of faculty—developing an institute of national cadre, achieving disciplinary excellence, and social responsibility—shaped their openness to engage with the region. I revise the conceptual framework for regional engagement of universities with additional enablers or constraints applicable for new national level HEIs in India.

Impact statement

Even with nearly 900 universities and 34 million students, Gross Enrolment Ratio in higher education (HE) in India is only 25.6%, far below the world-average of 36.7%. This situation is not unique to India alone; the growing demands of mass higher education has put tremendous pressure on many Asian countries that have low enrolment in HE. As countries expand their HE systems to meet the growing demands of massification of HE, expanding out—adding new universities—and expanding up by adding new programmes or increasing enrolments in existing universities are necessary and competing agendas. In this context, the goals of this study are to understand the role of regional engagement on the development of the new universities, and the openness of new universities to engage with the regions.

The study was carried out in seven national-level single disciplinary universities in India—referred to as higher education institutions (HEIs)—established by the government. I find that the placement of the HEIs in their corresponding regions—an exogenous contingent event—, and the influential role of their Heads can have effects that are hard to shake off causing their path dependent evolution. Having to develop their infrastructure and constrained by resources, the new HEIs started their academic programmes first, followed by research activities, that led to reactive sequences reinforcing their evolutionary paths.

Based on the preliminary findings of this study, I, along with another doctoral student, was awarded the interdisciplinary grant by UCL Grand Challenges to organise two workshops in India on encouraging collaborations between cities and universities. Over 40 researchers and faculty members from different universities in India attended the workshops. During the workshop, the approach and findings of this study was discussed in context to several on-ground case studies of collaboration between universities and cities. In continuation of the above, me and my collaborator are now working with a network of eight faculty

members from India to co-edit a book on this topic. We hope that the book would be useful to disseminate the findings to a wider audience in India including urban planners, policy makers, students, and faculty members.

To my knowledge, this is hitherto the only study on regional engagement of universities in India, and the first such to apply path dependency theory to understand the evolution of new universities. Most of the research on HE in India has largely been done due to interest from other departments in the topic of HE rather than by education researchers. I am hopeful that this study and its findings will provide the required impetus to improve indigenous HE research from India. Up on invitation, I have presented the findings at the Yale-NUS College Singapore, where the findings have resonated with their national HE systems as well. The findings have been accepted to be presented at the SRHE Annual Conference, 2018, in the UK. I hope, through these presentations, the study will provide wider recognition to HE studies carried out in an Indian context.

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Chapter 1

Introduction

In the past few decades, several countries, such as China, India, Singapore and Russia, have established new universities that are aspirational and have the essential ingredients – access to significant funding, a great degree of autonomy and major partnerships – to become leading national or global universities (Altbach et al., 2018; Marginson, 2016). One of main reasons for establishing such universities, rather than upgrading existing universities, is because developing them provides a great deal of freedom from the constraints of tradition of well-established universities and does not require breaking down traditional academic barriers (Altbach et al., 2018). Depending on their national higher education (HE) context, these universities are expected to expand access to top quality education, act as signposts in global knowledge networks or become agents of national or regional transformation (Marginson, 2016; Brennan et al., 2018). The rise of such universities has gained so much attention that prominent global rankings like the QS and THE World University Rankings have introduced specialised rankings for universities that are younger than 50 years. This study was conducted to understand the development of such new universities in India.

A small number of studies in the academic literature suggest that the location of new universities and their considerations for the surrounding region influence their uniqueness (Huisman et al., 2007), trajectory (Stensaker and Benner, 2013) and pace of development (Altbach et al., 2018). Other studies (Goddard and Puukka, 2008; Weerts, 2014), although not specific to new universities, show that engaging with the region helps universities in image building, attracting faculty and increasing student enrolment, and by providing funding op-

portunities and social capital support. Yet, existing studies (Brennan et al., 2004; Cowan and Zinovyeva, 2013; Gunasekara, 2006a; Lebeau and Cochrane, 2015) on regional engagement of universities focus on well-established ones and their contributions to the development of regions, rather than the other way around.

This study explores how regional engagement contributes to the development of the new Higher Education Institutions (HEIs) in India. I use the term HEI to refer to a specific type of university that is focussed on a single disciplinary area of study¹. The central research question that I investigate in this thesis is: *How can engagement with the region contribute to the development of the new HEIs?* The efforts to engage with the region in a formal, institutionalised and proactive way make additional demands on the universities. In order to benefit from the region, they are required to integrate regional missions into their core missions of research and teaching and find adequate support and resources internally and externally for such missions. In doing so, universities encounter tensions between their anticipated regional roles and their national or global aspirations. The expectations and demands of the regions from the universities, and the associated tensions and challenges faced by them, get magnified for new universities. Hence, the guiding research questions of this thesis are:

1. What are the tensions faced by the new HEIs to leverage the region for their research and teaching missions?
2. What are the challenges faced by the new HEIs to meet the expectations and demands from the regions?
3. What are the factors that determine the openness of the new HEIs to engage with the regions?

Regional engagement of universities refers to their formal and informal engagement with institutions located in their surrounding regions to serve the needs of the regions and boost their cultural, economic and social development (Boucher et al., 2003; Brennan et al., 2018;

¹In addition to the multidisciplinary universities, HEIs are a common feature of the Indian HE system. Some of the disciplines in which such HEIs exist include management, medicine, science, statistics, and technology. Established as a special cadre of institutes by the government, called the Institutes of National Importance (INI), the HEIs in India operate as centres of excellence in their respective areas at the national level and enjoy the same status as universities.

OECD., 2007). Such institutions include businesses, developmental organisations, government agencies, industry associations, not-for-profit organisations and other research or educational institutions. Regional engagement is based on mutuality, and systemic and ongoing involvement of the universities and the region. Universities contribute to the development of regions by developing human capital, fostering socio-cultural environment and regional innovation, and accelerating establishment of new enterprises (Asheim and Coenen, 2005; OECD., 2007; Youtie and Shapira, 2008). Similarly, regions help universities in their research and teaching activities through various means such as provide additional state funding and infrastructural support, launch academic programmes and increase enrolments from local population (Kwiek, 2012; Charles et al., 2012). In this context, an important question is why do regions matter to new universities, particularly to the new HEIs in India that are established by the government at the national level? The answer to this lies in three main aspects of development of new universities – legitimisation, strategic response and organisational management – with specific emphasis on the new HEIs in India.

The funding and resources needed for establishing new universities is often larger and require upfront commitment than is required for transforming existing ones (Altbach et al., 2018). In order to justify the above, new universities need an argument to legitimise their position in their national HE system (Huisman et al., 2002). For instance, the Indian Institute of Technologies were set up with each nearly £70 million funding and 500 acres of land to ‘expand access to top-quality technical education’. The initial argument for new universities gets institutionalised through concept notes, vision documents and strategic plans even before their operations begin. The new universities inherit this argument and aim to justify it in the course of their development. As a result, they develop distinctive features and gain legitimacy, and their differentiated positioning in their national HE system emerges.

Gaining legitimacy and a consequent differentiated position for new universities is substantially shaped by their considerations of their location and surrounding region (Brennan et al., 2018). The region provides the new universities the space for institutional interpretation of their initial argument and for taking action to justify the same while at the same time giving them the room to pursue academic ideals and excellence. In doing so, new universities create effective dependency relations with the region, get early acceptance by

the regional stakeholders, and finally, gain legitimacy in a national context. For instance, the Singapore University of Technology and Design (SUTD) was established in 2009 with an argument to provide an alternative educational path to its students. Singapore has been an important factor to legitimise the same by providing students a vibrant learning environment and attract students (Magnanti, 2018).

This can be challenging for the new HEIs in India as the country is undergoing a massification of its HE system. In the past few decades, the Indian government has allocated substantial funding and resources to establish new universities². Despite the additional funding to new universities, the government spending on HE in India is much lower than developed countries, with a persistent gap between the projected demand for funds by the existing universities and the actual allocations made. Thus, in order to justify the funding and resources for the new HEIs, the government has established many of them in rural and semi-urban regions with a rationale to link them to the development of the surrounding regions. Notwithstanding the region in which they were situated, the new HEIs were also established with an initial argument related to their research and teaching roles to legitimise their position in the national HE system. In cases where their initial argument is not aligned with the characteristics, capabilities and plans of the region, the region can become a barrier in seeking legitimacy, and thus, making it harder and longer for them to cement their position in the Indian HE system. In such cases, the new HEIs can face scepticism and sense of urgency from their stakeholders (Pinheiro et al., 2012), eventually slipping to lower ranks or searching for an alternate argument for their legitimisation (Stensaker and Benner, 2013).

In order to compensate for their need for legitimisation and reinforce their differentiated positioning, new universities tend to raise the bar for themselves with grand vision statements and promises to their stakeholders. This creates an aspirational image of the new universities and helps them attract and motivate faculty members and students. However, such an aspirational image can raise the demands and expectations from different sources in their external environment. Such demands and expectations are further enhanced for the new HEIs in India that are established as part of an existing group of well-established and

²At the timing of writing this thesis, the Indian government allocated an approximate £400 million in 2019 to establish 13 new universities. This was nearly double of the total funding allocated to the Higher Education Financing Agency – an entity responsible for creation of capital assets in existing universities (Ministry of HRD, 2018).

highly reputed cadre of institutions - the Institutes of National Importance (INIs). As a result, they are subjected to the same standards and expectations as their well-established counterparts, without having comparable resources and reputation. This can lead to a situation of ‘demand overload’ on the new HEIs (Clark, 1998) in which they are always catching up with their external environment. Zong and Zhang (2019) observe a similar trend in the nine Tier 1 ‘Project 985’ universities in China³ to be upgraded to world class universities where despite generous investment from the government, there was a long-term tendency of publication saturation due to premature academic ‘burn out’. In such a situation, monotony can set in, eventually taking away the ability of the new HEIs to innovate and excel, and they can drift to become similar to the well-established counter parts (Morphew and Huisman, 2002).

Under such circumstances, new universities can become entrepreneurial to balance external demands with internal resources and challenges. Besides an entrepreneurial culture, this requires them to develop a diversified funding base, an improved steering capacity, a developmental periphery and a strong academic heartland (Clark, 1998; Etzkowitz et al., 2000; O’Shea et al., 2007). By integrating unique characteristics of the region in the above aspects of their development, new universities can provide a strategic response to the expectation and demands of their external environment. In absence of certain specific characteristics of the region, their development can become more ambiguous and dislodge them from their differentiated position within national HE systems (Stensaker and Benner, 2013). Huisman et al. (2002) show that the location and functioning of three new universities established in late 60s’ in Europe were one of the main factors for retaining their distinctiveness from traditional universities even after three decades of their establishment. In this way, the region can be significant for new universities to be different than their well-established counter parts rather than being inferior (Altbach et al., 2018; Stensaker and Benner, 2013).

New universities that are smaller and focused on specific areas find it easier to be flexible and innovative in their development and adopt an entrepreneurial approach (Clark, 1998). Given that the new HEIs in India are focussed on a single discipline, regions will be of higher significance to their strategic response than that of multi-disciplinary universities.

³Project 985 was a project in China to promote the development and reputation of the Chinese higher education system by founding world-class universities with allocation of large amounts of funding. In 2009, the original nine founding member universities of Project 985 formed the C9 League.

The science and technology-based new HEIs can develop to become entrepreneurial first whereas social science-based new HEIs will find it to be most difficult and are likely to have an opportunistic response to the external environment. Similarly, as the new HEIs grow in size, they spread in to various areas of study and find it difficult to maintain a unified character across their departments. They will find it more challenging to remain entrepreneurial and make the region significant to their strategic response. Thus, as the HEIs grow larger, integrating the region in their development can make their development more ritualistic or operational, rather than strategic, aimed at maximising institutional flexibility (Stensaker and Benner, 2013).

The new HEIs in India are established in a neo-liberal environment where they are subjected to marketisation, competition and accountability (Ministry of HRD, 2018). Under such circumstances, they are required to function as organisational actors who have goals, have plans to attain them, and monitor and evaluate their progress (Ramirez, 2010). However, India lacks HE management professionals and organisational management in universities are mainly done by the academics. Thus, an essential part of the organisational management of the new HEIs India is to learn from other universities and from the expertise of others on how to improve and show continuous progress in achievement of their goals. In such cases, their location becomes an important conduit for them to connect to counter parts. In addition, the economic competitiveness of the region can help new universities attract the best resources and develop the agility needed to execute on their plans. Analysing eight new universities established in major cities, such as Hong Kong, Singapore and Abu Dhabi, Altbach et al. (2018) find that the new universities were able to accelerate their development with the help of expert panels, external consultants or institutional partners - made accessible due to their urban locations. The new HEIs in rural or semi-urban regions in India can be disadvantaged on these aspects and thus, may be seen as not performing even though they may have strong academic norms and practices. These HEIs can be at risk to lose out on subsequent funding and rankings, potentially impacting their competitiveness and reputation.

The significance of the region for the organisational management of the new HEIs will vary depending on the HE landscapes of the region. New universities that are single-player universities in peripheral regions—universities that are the largest institutions in the

region with very few other universities—comprehensively engage with the region where as the new universities in traditional areas in core regions face challenges to leverage the region due to competition and hierarchy effects from their well-established counterparts (Boucher et al., 2003). Thus, the new HEIs in India may lose out to well-established universities in the same region who have proven credibility and relationships with the region and thus are better positioned to leverage them for their organisational management.

Given the above described significance of regions to the development of universities, more particularly for the new HEIs in India, I problematise the university-region relationship to understand how a new university prepares itself and responds to the demands of the region, and eventually how it leverages the region for its own development. The focus of the analysis is on the universities themselves and not on the regions. I structure the study and carry out the analysis from the perspective of the new HEIs and exclude those of the regions. This does not imply that new universities do not contribute to the development of the regions or their relationship with the region is not mutual. However, given the inward focus of new universities in the initial years on development of academic programmes and research activities, establishing academic norms and values, and hiring of faculty and leadership, they may not yet be fully prepared to contribute to the development of the region. Thus, the objectives and the research questions of this study are more narrowly defined than studies (Boucher et al., 2003; Chatterton and Goddard, 2000) that examine regional engagement as a phenomenon and conduct two-way analysis of the university-region relationship.

1.1 Structure of the thesis

The remainder of this thesis is divided into nine chapters. The next chapter provides the context and scope of the study. I give an overview of the higher education(HE) system in India, where the study was carried out, explain its rapid growth over the past two decades, and discuss the importance of the research questions to the new HEIs in India. I explain the interpretations of regions and new universities adopted for the purposes of this thesis.

In the third chapter, I provide the rationale for the study, and explain the relevant theoretical concepts. I discuss the literature related to regional engagement of universities and the HE system in India. I explain the theoretical framework pertaining to institutionalisation

of regional engagement of universities through the regional interface tensions faced by them, and the enablers and constraints for their regional engagement.

I begin the fourth chapter with a discussion about the commonly used research methodologies to study regional engagement of universities. I subsequently explain the research methodology adopted in this study and discuss its ethical considerations. This is followed by a detailed discussion of the research methods used to collect and analyse the data from seven new HEIs in India. I conclude the chapter by discussing the limitations of this study. I discuss the findings in the subsequent five chapters.

The fifth chapter begins with an analysis of the evolutionary nature of the HEIs, followed by an introduction to the concept of path dependency used in the subsequent chapters. In the sixth chapter, I investigate the role of antecedents for path dependent evolution of the HEIs, followed by a discussion in the seventh chapter on the regional interface tensions faced by the HEIs. In the eighth chapter, I examine the role of enablers or constraints for leveraging the region in the the path development phase of the HEIs. In the ninth chapter, I discuss the findings pertaining to the openness of the faculty members of the HEIs to engage with the region by analysing their goals and motivations. I analyse the role of the disciplinary and regional contexts in shaping their openness to engage with the region.

In the tenth chapter, I validate the theoretical framework adopted in this thesis, and present a revised one to explain the role of regional engagement in the evolution of the new HEIs. I subsequently summarise the main contributions of the study and discuss the scope of future work. Finally, I discuss the implications of the study on my own practice and explain plans for disseminating the findings.

Chapter 2

Context and scope of the study

As countries expand their HE systems to meet the growing demands of massification of HE (Wu and Hawkins, 2018), expanding out—adding new universities—and expanding up by adding new programmes or increasing enrolments in existing universities are necessary and competing agendas (Chapman and Chien, 2014). Yet, with the exception of few studies on new universities (Altbach et al., 2018; Mellanby, 1963), very little is known in the literature about new universities (i.e., why are they established, how do they function in the initial years, and what challenges they face). In this context, the goals of this study are to understand the role of regional engagement on the development of the new universities, and the readiness or openness of new universities to engage with the regions. Whatever the region can (or cannot) do, may have varied influence on the development of the new universities. Hence, I problematise the university-region relationship to understand how a new university prepares itself and responds to the demands of the region, and eventually how it leverages the region for its own development, particularly for achieving its research and teaching missions. The above objectives and the research questions are more narrowly defined than studies (cf Boucher et al., 2003; Chatterton and Goddard, 2000) that examine regional engagement as a phenomenon, and conduct macro-level analysis of the university-region relationship. Given the above, I structure the study and carry out the analysis from the perspective of universities and exclude those of the regions.

A similar approach to exclusively understand the internal contexts of universities can be found in the literature related to community engagement of universities. Lebeau

(2008) analyses the contradictions arising out of the transformation of HE system in sub-Saharan Africa and suggests that such transformation efforts need to be understood with evidence from the capabilities of the universities themselves, as is the case in this study. He argues that understanding such transformations from the perspectives of the regional stakeholders has the risk of representing their own anticipated impacts of such transformational efforts. Benneworth and Sanderson (2009) in the study of engagement of universities with socially excluded communities lay the emphasis on “placing universities’ regional activities into context; therefore, understanding both how these peripheral activities fit together with teaching and research activities, and the comparative strategic emphasis placed on them by university managers” (p. 1). Analysing such alignment between community engagement activities with research and teaching activities, Humphrey (2013), in the case study on a university in Scotland, found evidence for the dislocation of policy and practice governing university-community engagement within universities and the marginalisation of community engagement projects from research and teaching. He found engagement with the communities in the region to be constantly threatened with closure because of recurring fund shortages. Instead of looking at macro-level institutional arrangement as in the above studies, Weerts and Sandmann (2010) analysed the motivations of faculty members to engage with communities. Such studies indicate that a focussed analysis with goals to understand the new universities, and without attention to the regions or regional stakeholders, is not only needed but is also a valid way to investigate the relationship between universities and the region.

This study is situated in the HE context in India during the period 1995-2015, a period of rapid expansion of the HE system in India. I provide here a brief introduction to the HE system in India, and to the Institutes of National Importance—a specific category of HEIs in India—where this study has been carried out.

2.1 The higher education system in India

With nearly 900 universities and 34 million students as of 2016 (All India Survey on Higher Education, 2017), India has one of the largest HE systems in the world. Yet, as per the data from the World Bank (UNESCO Institute for Statistics), it’s Gross Enrolment

Ratio (GER)¹ in higher education was only 26.9% in 2016, way below the world-average for GER at 36.7% . Except for a few selected national-level publicly-funded institutions (some of which form part of this thesis) that are research intensive, most universities in India are teaching institutions with very little differentiation between them (Altbach, 2009). Since the establishment of universities in the independent India in the 1950s, there has also been very little change in the structure of the HE system and the practice of it (Jayaram, 2007). The HE system in India is regulated by the Ministry of Human Resource Development (MHRD) of the Government of India. Universities in India can be established by the Government of India—referred to as the “Central Government” in this thesis—through legislations in the parliament or, by the governments of the states—referred to as “State Governments” in this thesis—through legislation in their corresponding assemblies. Beside the above, Private Universities, funded and managed by private organisations or individuals while adhering to regulations specified by the MHRD, can be established by the State Governments. The University Grants Commission (UGC), a government-run establishment under the MHRD, determines and maintains standards of universities, provides recognition to universities, and disburses funds to such recognised universities (Ministry of HRD, 2018). MHRD stipulates the number of students that can be admitted, and the numbers of faculty and staff that can be recruited by a university established by the Central Government. Universities established by the Central Government admit students through entrance examinations administered at the national level. They are required to reserve close to fifty percent of their seats for students from less-privileged socio-economic backgrounds such as Scheduled Castes, Scheduled Tribes and Other Backward Classes (Ministry of Law and Justice, 2007). Besides this, no other preference is shown to students or faculty from any other background, including those from the state or the region. The universities established by the State Government(s) can follow their own admission process, and provide preferential admission to students from their respective states. The faculty members of all the universities are appointed at three levels of seniority: Assistant Professor, Associate Professor, and Professor. Senior administrative positions in the universities are typically held by their faculty members, who are responsible for

¹GER in HE in India is calculated for 18-23-year age group. It indicates the total enrolment in higher education, regardless of age, expressed as a percentage to the eligible official population (18-23 years) in a given school year.

all their strategic and planning activities. Tactical or administrative tasks are undertaken by administrative staff, categorised as non-teaching staff, who have an oversimplified definition as those who do not have an academic employment function (Whitchurch, 2008).

2.1.1 The Institutes of National Importance (INIs)

The Institutes of National Importance (INIs) in India are established by the Central Government as independent category of HE institutions in a single disciplinary area, but grouped as per their disciplines. For example, all the INIs in the area of technology are called Indian Institute of Technology(IIT) with campuses in various locations. However, except for admitting students through a common admission test, each IIT in different locations operates as an independent institution and is distinctly known by its campus name (e.g., IIT Mumbai, IIT Delhi, and IIT Chennai). Each INI is governed by an independent Board of Governors (BoG) that has a nominee from the Central Government, a nominee of the State Government in which it is located, eminent experts from industry and academia, and faculty representatives from the INI. Unlike other universities that are regulated by the MHRD, the INIs enjoy the maximum autonomy from the Central Government in the Indian HE system, and the State Governments did not interfere either. The INIs have complete flexibility on most research and academic matters (e.g., launch of programmes, research funding through grants, industry collaborations, and curriculum design), except for the number of faculty to be hired that needs to be approved by the MHRD (Agarwal, 2007; Ministry of Law and Justice, 2010). The salaries for faculty and staff are paid directly by the Central Government. The INIs apply for external research grants offered by various departments of the Central Government and by international grant-making agencies. While the INIs are accountable for deployment of funds allocated by the Central government, which are typically meant for capital expenditure, they are accountable to their BoG for research and academic matters.

The first group of INIs was established around 1950s, soon after India gained independence, in disciplinary areas of technology, science, and management. Many of the graduates of the INIs established during that period have risen to eminent positions globally in different spheres of activity. Owing to the quality of education and success of the graduates, these well-established INIs enjoy a strong reputation globally, and in India. Similar to

public universities in other countries (Hunt, Callender, and Parry, 2016), the well-established INIs enjoy a higher prestige compared to the State and Private Universities in India. Ranked among the top institutes in their respective disciplines², the well-established INIs attract the best faculty and students from across the country in their respective disciplines (Altbach, 2009).

Almost five decades after the establishment of the initial group of INIs, the Central Government established several *new* INIs, and upgraded of some of the existing HEIs to the cadre of INIs between 1995 and 2015 to cater to the growing need for high quality education in India. The 11th Five Year Plan of the Planning Commission of India, the nodal planning agency of the Central government, approved the establishment of several new INIs in 2006. The INIs are established by passing of a separate act in the parliament. The Central Government, in consultation with various State Governments, decides their location. Very few of new INIs established between 1995 and 2015 were in urban areas, most were in semi-urban areas, and a few in rural areas. An independent committee of experts, convened by the MHRD, prepares a Detailed Project Report (DPR) for each of the new INIs, based on which the MHRD allocates an initial corpus of funding for their establishment. The major components of the DPR are capital expenditure funds for construction of buildings, programmes to be launched, the number of faculty to be recruited, and the number of students to be admitted. Once the DPR is approved by the MHRD, it appoints a Director as the Head of the INI and forms the BoG. The Director subsequently takes charge of further hiring of faculty and expansion of the INI.

2.2 Scope of this study

Although the definition of a new university is hard to find in the literature, its connotation differs depending on the context of the study. In the context of regional innovation systems in Italy, Cowan and Zinovyeva (2013) study new universities established over a period of fifteen years, and show that the opening of a new university leads to increase in

²In the India Ranking 2018 published as per the National Institute Ranking Framework of the Central Government (Ministry of HRD, 2010), eight of the top 10 institutes in engineering or technology, four of the top 10 institutes in architecture and planning, and nine of the top 10 institutes in management were INIs. In addition, the INIs invariably featured as top ranked institutes in India in several rankings published by private organisations.

regional innovation activity within five years of its starting. Mellanby (1963) analyses the challenges of establishing a new university in Africa fifteen years after its establishment. In the UK, the term “new university” refers to universities that were established after a major policy reform in 1992—the Further and Higher Education Act—that made major changes to the funding and management of HE (The National Archives, 1992). In India, the need to increase participation has led to the massification of the higher education sector with notable changes in its scale and scope over the last few decades. After the tabling of the Private Universities Bill in 1995 (Shah, 2015) to give provision to the states to establish Private Universities, there were 234 Private Universities in India in 2016. There were similar expansion in universities set up by the Central Government as well. The number of INIs increased from about 10 in 1995 to 100 by 2016. Since then, several plans made by the Centre Government (Ministry of HRD, 2018; NITI Aayog, 2018) included goals to increase the GER to 15% by 2011-12, and subsequently to 21% by 2016. Spatially, these new universities are distributed over semi-urban and rural regions to increase access to HE. Due to such drastic changes in HE sector during 1995-2015, I focussed on universities set up during this period, and refer to them as new universities in this study.

It is important to understand what constitutes regions and who are the relevant regional actors for new universities in India. Depending on the context, studies on regional engagement of universities have identified regions in varied ways. Benneworth and Sanderson (2009) consider the first administrative boundary in which the university is situated as the region. However, depending on the classification of the region, the regional development agenda of regions may involve participation of actors outside their administrative structures (Nath, 2009). Hence, Charles et al. (2012) treat the economic boundary of the city as the region. Brennan et al. (2018) followed a more flexible approach by referring to an area surrounding the university—a town or a group of towns or cities—as the region not defined by administrative boundaries but by the interactions, relations and identities associated with it. Due to economic development post liberalisation in the early 90s, regional development in India has gone beyond the core and urban regions to the peripheral and semi-urban or rural regions. I refer to the first administrative boundary of the city in which the university is located as the relevant region for a new university. The All India Survey of Higher Education by the MHRD

(All India Survey on Higher Education, [2017](#)) classifies the locations of universities as rural or urban region. However, considering the significant variation in socio-economic activities of different urban regions, I further classified the urban region to semi-urban and urban regions for the purposes of this study. The urban region have high talent, investment-friendly policies and constitute almost 100% of the R&D pool in India. The semi-urban regions are witnessing significant economic activity spurred by the establishment of R&D centres, upgraded infrastructure by the government, and new entrepreneurial and educational activity. The rural regions are slowly witnessing economic progress but only over the last few years. Regional stakeholders from universities situation in these regions typically involve the departments of the State and Central governments involved in developmental initiatives, business organisations, international development agencies, industry associations, and research think-tanks operating in the region.

Chapter 3

Literature review and theoretical framework

The rationale for this thesis is based on three main concerns about the regional engagement of universities. The first one draws from the contextual environment in India, where the study is situated, and the remaining two are academic concerns, drawn from the literature.

i. Rapid expansion of HE in India and implications on regional engagement of the universities

The growing demand for HE in India has led to the establishment of nearly six hundred universities between 1995 and 2015 (NITI Aayog, 2018). As shown in Table 3.1 the total number of universities have more than doubled in the last decade alone, with maximum growth due to the establishment of Private Universities. Yet, the contribution of the regions to the development of the new universities and the integration of the new universities with the regions in India have hitherto remained unexplored in the literature. New universities, established under such a rapidly expanding HE system, face several challenges depending on their age, disciplinary focus, location, and regulatory structures. Mellanby (1963) describes the challenges for setting up appropriate infrastructure, designing of relevant courses, and maintaining high academic standards while establishing a new university in Africa. Salmi (2010) suggests that the prevalence of favourable governance in the region is one of the most

important enablers to develop a world-class university in developing countries. The new universities in India grapple with challenges such as delay in allocation of land by the government, lack of autonomy and stable governance structures (Bhattacharyya and Vijayraghavan, 2015; Mohanty, 2015). Regional campuses of universities face issues related to attracting and retaining staff, higher expectation to serve regional needs than their metropolitan counterparts, low research funding, and low student numbers (Allison and Eversole, 2008). Nearly half of the new universities in India established in rural or peri-urban regions face additional challenges in attracting faculty and establishing connections with industry (Service, 2017; India, 2017).

Table 3.1: Growth of different types of universities in India between 2005 and 2017^a

Type of University	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Central University	25	25	40	42	42	42	42	43	43	43
Central Open University	-	-	-	-	1	1	1	1	1	1
INI	33	33	39	N.A. ^b	59	62	68	75	75	100
Deemed University	103	103	128	128	128	127	127	122	122	122
State Private University	-	14	21	60	105	122	154	182	198	234
State Open University	-	-	-	-	13	13	13	13	13	13
State Public University	242	228	234	256	282	292	309	316	329	345
Universities by State Legislation	5	5	5	5	5	5	5	5	5	5
Others	-	-	-	-	3	3	4	3	13	0
Total	408	408	467	N.A.	642	667	723	760	799	864

^a Source of data: Data until the year 2010-11 was obtained from the India Data Portal, the public data portal of the Government of India (NITI Aayog, 2018). Data from 2011-12 onwards was obtained from the All India Survey for Higher Education, carried out by the Government India (All India Survey on Higher Education, 2017).

^b "N.A." implies data could not be obtained. "-" indicates HEI of that type did not exist during that period.

One of the principle feature of this period of expansion in India is to increase access to quality higher education through the rapid increase in the number of INIs. The Central

Government followed a two-pronged approach to achieve this expansion. The first was to *convert* many existing HEIs to the stature of INIs. This has many implications to these existing HEIs, such as increased autonomy, higher funds, change in admission criteria, to adorn the tag of an INI. The second was to establish *new* INIs. This expansion has led to debates around the dilution of the brand of the INIs and declining standards of student quality. Lebeau (2008) analyses the local contradictions arising out of a similar rapid expansion of HE system in sub-Saharan Africa in the early 1970s, and argues the “degraded state of most universities in the region should not be taken to mean that they had become irrelevant to the societies and politics in which they were embedded” (p. 139). He finds that such transformation was marked with compromised academic freedom and politicisation of important academic and administrative positions, and thus, the universities were faced with the need to balance teaching with quality inherited from the highly elitist higher education systems and the necessity to widen access to higher education. Hence, the challenges faced by the new universities in India raise concerns about their ability to maintain the quality of research and teaching, while being able to engage with and leverage the contributions from the regions.

ii. Complex interrelated factors responsible for contributions of the regions to the new universities

Most of the prevailing studies (Cowan and Zinovyeva, 2013; Gunasekara, 2006a; Uyarra, 2010) on regional engagement of universities focus on well-established universities. They conceptualise regional engagement as the “third mission” (Laredo, 2007; Lebeau and Bennion, 2014) for the universities in addition to their teaching and research missions. As the universities adopt the third mission, the regions help them attract and retain faculty, provide opportunities for funding through collaboration with local industries, increase enrolments from the local population, and provide social capital support in the form of networks (Goddard and Puukka, 2008; Weerts, 2014). At the same time, the universities are required to reorganise and re-prioritise their core activities in order to integrate regional mission and to leverage it for their research and teaching missions. Hence, the benefits of regional engagement to the new universities differ depending on the context in which the new universities

operate and on a complex set of factors involving the regions and the universities. In Australia, the state government has provided infrastructure for an Engineering Lab in Monash University (Charles et al., 2012). In Poland, regional engagement of universities resulted in additional state funding, establishment of new study programmes, and new academic career ladder for faculty (Kwiek, 2012). Pinheiro et al. (2012) suggests, “Future research efforts should focus on cross-national case studies encompassing a variety of institutional forms (public and private, small and large, and old and new, etc.) and national systems faced with similar institutional and technical drivers: deregulation, competition, etc.” (p. 252). Thus, the existing theories (Pinheiro et al., 2012; Gunasekara, 2006b) about the factors that influence the regional engagement of universities need to be revalidated in the context of different regions and new universities in India.

iii. Openness of universities for leveraging benefits from the regions

The level of openness of the universities to leverage the regions for their development depends on the degree of alignment among their missions, activities, and norms of operation (Uyarra, 2010; Boucher et al., 2003). Universities are open to engage with the regions if regional actors understand and appreciate their norms of operation (e.g., academic freedom, flexibility, and universal nature of knowledge). Similarly, regional actors need to set right expectations of the universities (Allison and Eversole, 2008). Kwiek (2012) finds that nearly 20% of the corporates—one of the many regional actors of universities—in Poland did not know that it was possible to collaborate with universities and 40% had never tried to get in touch with a university. Thus, regional actors need to be willing to invest the time and resources to establish trust with the faculty members and the management of universities in their region (Bruneel et al., 2010). Communication by universities with the regional actors about their mission and activities, and awareness of the regional actors about possibilities and mechanisms of collaboration are also important for successful engagement between universities and regions. In addition, economic characteristics of the region such as per capita income, levels of R&D, and education level of labour force influence the ability of the regions to engage with the universities (Cowan and Zinovyeva, 2013). This evidence raises concerns that the new universities in India, particularly those in rural and semi-urban regions, face

additional challenges as they engage with the regions and leverage the potential benefits those regions have to offer.

3.1 Theoretical framework

Given the objectives and the research questions of this thesis, I adopted the theoretical framework for institutionalisation of regional engagement of universities proposed by Pinheiro et al. (2012) in their book titled “Universities and regional development: A critical assessment of tensions and contradictions”. Developed based on a series of in-depth case studies done across the five continents, the theoretical framework (shown in Figure 3.1) is useful for interpreting the tensions associated with regional engagement in the light of internally and externally driven efforts aimed at institutionalising the regional mission of universities. I used the above theoretical framework to arrive at the themes of analysis for each of the guiding research questions for this study. Pinheiro et al. (2012) suggest five interrelated ambiguities—intention, understanding, history, structure, and meaning—to describe the tensions faced by the universities. The ambiguity of intentions arises due to conflicting goals and agendas of various internal stakeholders of the universities such as faculty, administrators, and students. The ambiguity of understanding refers to the differences in understanding of the perceived roles of the universities around their core activities of research and teaching. The ambiguity of history pertains to the university structures that are shaped by past trajectories or path dependencies of the universities. Although new universities typically do not have as strong a history as established ones, in certain cases, their disciplinary area and governance structure are predefined by the regulatory structures in which they are established. The ambiguity of structure is related to the weak interdependencies in different units and knowledge domains present in the university. Typically, different academic departments of a university are not linked to each other—each department sets its own research agenda, offers its own education programmes, and carries out independent activities. The ambiguity of structures will be less prominent in the specialised new universities that focus on a single discipline than in multidisciplinary universities. The ambiguity of meaning implies that internal stakeholder groups not only sense external dynamics differently, but also disagree in the ways in which university structures, functions and traditions ought to be locally adapted to meet the demands of

external stakeholders. I used these five ambiguities to analyse the regional interface tensions created within new universities due to their engagement with the regions.

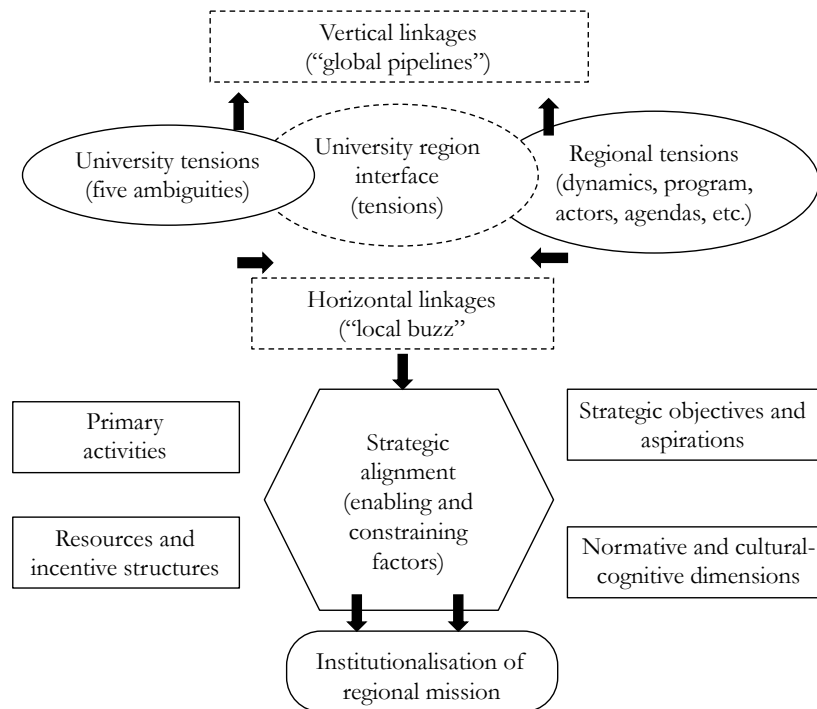


Figure 3.1: Theoretical framework for institutionalisation of regional engagement, adopted from (Pinheiro et al., 2012, p .250)

In order to fulfil the expectations and demands of the regions, universities face challenges to allocate resources (both people and funding) between their core missions of teaching and research, and to subsequently participate in regional developmental activities through mediums such as outreach, consultancy, and research programmes. Internal support from within the universities to deal with the challenges is most effective when regional engagement is institutionalised in their core activities. However, in order to institutionalise regional engagement, the new universities may find themselves trying to engage with the regional actors at the same time forcing through organisational changes and structures that were incompatible with the regional actors (Goddard and Puukka, 2008). Brennan et al. (2018) analyse several case studies in the UK to argue that relationships between universities and region cannot be explained fully as part of strategic missions with coordinated approaches by both regions and universities. Their argument is that universities are embedded in the policy or

economic contexts of the region at the micro level, and the third mission is a response to the “placed realities of everyday institutional life” (p. 6). Lebeau and Bennion (2014) suggest that the territorial, political/policy and economic embeddedness of universities into their region shapes their nature of engagement with the region in an informal and non-tangible manner, and the challenges faced by the universities to engage with the region. These studies suggest that the need to focus on formalisation and institutionalisation of regional engagement, along with the associated need to focus on measurable impact, is dependent on the context in which a university is situated in.

The successful institutionalisation of regional engagement by the universities depends on four critical factors (Gunasekara, 2006b). I used these factors to analyse the openness of the new universities to take advantage of the benefits offered by regional engagement. The first factor is the degree of alignment between the activities of the universities with the expectations and the needs of the regional actors and the region as a whole. The second factor is the degree to which university’s objectives and future ambitions are aligned with the regional development plans (mid- to long-term vision) and the interests and agendas of various regional actors. The third factor is related to the normative and cultural-cognitive dimensions. This refers to the level of dissonance between the values, norms, roles and identities of various members of the universities and those of regional actors. The last factor pertains to the resource and incentive systems, which is the degree of support (national/regional funding agencies and university’s steering core) towards active academic engagement with activities that directly contribute to regional development. The thesis analyses the applicability of these factors to explain the openness of the universities for engaging with the regions. It will validate the theoretical framework in relation to new universities in India and propose revised theoretical propositions for them to leverage contributions from the regions.

Chapter 4

Research methodology and data collection

Regional engagement of universities has been analysed at the micro-, macro-, and meso-levels. At the micro-level, researchers have studied the goals, motivations, values, and identities of faculty members involved in community engagement and public scholarship¹ A second stream of studies have conducted macro-level analyses across multiple HE systems and regions. These studies are motivated by the need to develop effective policy and innovation systems at the local, regional and national level. A third stream of studies have conducted meso-level analysis at the level of universities and/or regions to understand the complex nature of their reciprocal relationships within a national-level HE system. A detailed description of these different methodological approaches to analyse regional engagement of universities has been provided in Appendix 1. This study is conducted at the meso-level, and investigates the regional engagement of new universities at the level of universities in India.

4.1 Research methodology

Since the study proposes to answer a *how* question, a qualitative study using multiple cases is most suited (Goodrick et al., 2014). A qualitative design with multiple cases representing the different attributes is preferred when: (a) the focus of the study is to an-

¹Community engagement and public scholarship have similar connotation as that of regional engagement except that they are not specific to a geographic or economic boundary.

swer *how* and *why* questions; (b) the behaviour of those involved in the study cannot be manipulated; (c) contextual conditions are relevant to the phenomenon under study; or (d) the boundaries are not clear between the phenomenon and context (Yin, 2009). However, regional studies, including those that concern relationships between universities and regions, in too many instances, take the approach of qualitative studies that lead to the development or enhancement of conceptual frameworks. It is important to acknowledge that the reliance on such approaches has faced its share of criticism by methodologists². I thus reinforce the point made by Peck (2003) that “in theoretically informed intensive research, conceptualisation occurs through abstraction and through continuous dialogue with concrete case, selected on the basis of their potential elucidation of the relationships in question, not according to the frequency of their occurrence or their statistical representativeness” (p. 732). In research methodology of this kind, the quality of claims made is judged on their veracity and not on the spurious grounds of representativeness. Several researchers (Pinheiro et al., 2012; Peck, 2003; Hudson, 2003) call for embracing qualitative methodologies, especially that covers evidence from cross-regional, multi-site and transnational fieldwork, in order to tease out some of the effects of context, situation and conjuncture, and to aid transferability of theory claims. Hence, I have selected the new HEIs for this study with variations in the following attributes: age of the HEI, region in which it is situated (i.e., urban, semi-urban, and rural) and disciplinary focus. As explained below, the selection of the HEIs across these attributes allowed for data triangulation by collecting data from different contexts, and thus ensures the validity and reliability of the findings

The nature, mechanisms, and extent of interaction for knowledge transfer between organisations and universities, one of the main drivers for regional engagement of universities, depend on the basic characteristics and the disciplinary origins of knowledge (Bekkers and Freitas, 2008) and economic sectors where the universities are located (Schartinger et al., 2002). Faculty members with appointments in certain disciplines, such as social and behavioural science, agriculture, business, and health, are more likely than those in other disciplines, such

²Markusen (2003) claims that the emphasis on qualitative methodology on regional studies has resulted in declining standards of evidence, ‘fuzzy’ theorising, and a drift into policy irrelevance. She even equates these studies to proximity research, conducted in researchers’ own backyards, with an aversion to genuine graft in far-off parts. There have been two counterviews published to this, one by Hudson (2003) and another by Peck (2003). Both make a case for extending qualitative case-based studies to encourage methodological pluralism, and suggest positive steps to deepen and extend such studies.

as physical sciences, humanities, arts, engineering, and math, to be involved with service and commitment to improving communities (Abes et al., 2002; Antonio et al., 2000) . Similarly, faculty members involved in community engagement often approach research from a different epistemological stance than is held by others (O'Meara et al., 2011). Hence, I considered to include new HEIs across different disciplinary areas to understand their influence on regional engagement.

Universities that are older are likely to have more number of students and faculty members, be equipped with better infrastructure, and have developed policies, tools and systems, and matured governance structures. Boucher et al. (2003) find that single relatively large-scale universities located in peripheral regions tend to more comprehensively engage with their regions than small-scale universities in core regions. Pinheiro et al. (2012) suggest that universities have to deploy resources for engaging with the region. Such resources are more likely to be available with universities that are older. Thus, as new universities get older and more established, they are likely to enhance or modify their approach to regional engagement. Hence, I have included new HEIs with different ages or years of establishment in to this study.

The size and socio-economic characteristics of the region have considerable influence on the regional engagement of the universities. Economically developed regions will be better equipped to provide resources (e.g., funding, infrastructure support and services) to universities located in their regions. Universities situated in highly skilled regions will have higher demand for their academic and training programmes, and hence will be able to leverage the region to achieve higher participation rates in their programmes. Boucher et al. (2003) identify differences in the nature of regional engagement of European universities located in the core and peripheral regions. Goldstein and Drucker (2006) carry out a comparative analysis of the impact of universities on regional development in the U.S. based the different sizes of the regions they are situated in. Gunasekara (2006b) develops a conceptual framework for regional engagement of universities and applies it to three universities in Australia in peri-urban, provincial city and rural regions. Hence, to be able understand the effects of the region, I selected new HEIs that were situated in urban, semi-urban, and rural regions.

4.2 Selection of the new universities

Opportunities for regional engagement of universities are not mutually exclusive or successive to either their teaching or research activities (Uyarra, 2010). Thus, to allow for a wide scope of interpretations and implications of regional engagement, only those new universities that conduct both research and teaching were deemed eligible for consideration in this study. Of the various types of universities in India, the INIs are considered to be the most research and teaching-intensive institutions. A total of 62 INIs were established during 1995-2015 in India across various disciplines (Ministry of HRD, 2018). I excluded institutes in the areas of petroleum engineering, biotechnology, pharmaceutical, and information technology from this study since the specialised nature of these disciplines may not allow for a wide-ranging engagement of the INIs with the region. I considered the remaining 26 INIs from four disciplines—architecture and planning, management, science and technology—to be eligible for inclusion in this study. Table 4.1 shows the break-up of the twenty six INIs as per their age, disciplinary focus and the region they were situated in. The INIs in the areas of technology are called the Indian Institutes of Technology (IIT), in the areas of management are called the Indian Institutes of Management (IIM), in the areas of planning and architecture are called the Schools of Planning and Architecture (SPA), and in the areas of science are called Indian Institutes of Science Education and Research (IISER).

Including four to ten case studies in a qualitative analysis allows for exploring differences between case studies and replicating the findings from one case across cases, and provides a good basis for generalisation (Eisenhardt, 1989). Of the eligible INIs, the final selection of institutions for this study was done to include an appropriate sampling of the HEIs across three attributes mentioned above—age, disciplinary focus, and the region they are situated in—to allow for data triangulation by collecting data from different contexts. For instance, including two IIMs established in the semi-urban regions, and of seven and twenty years of age, allowed for collecting evidence across their ages while controlling for the effects of discipline and the region. Similarly, by selecting one INI from each of the four disciplinary areas located in urban region and established between 2008 and 2010 allowed for examining the role of the discipline, something that is not yet addressed in the current studies. Considering the above, of the total twenty six eligible INIs, seven—three IITs, two IIMs,

Table 4.1: Break-up of the institutes deemed eligible for inclusion in this study

Criteria for inclusion	Year of establishment	Discipline	Type of region	No of eligible INIs	No of INIs included in this study
Age	1996-98	Management	Semi-urban	2	1
Age	2008-10	Management	Semi-urban	3	1
	2008-10	Management	Rural	4	0
Discipline	2008-10	Technology	Semi-urban	4	1
Discipline	2008-10	Science	Semi-urban	5	1
Discipline	2008-10	Architecture and Planning	Semi-urban	3	1
Region	2008-10	Technology	Urban	2	1
Region	2008-10	Technology	Rural	3	1
Total				26	7

one SPA, and one IISER—were sufficient for to collect data from a wide-range of contexts needed to establish the reliability and validity of the findings of this study. Each of these seven institutes represented a category of INI with a unique combination of age, discipline and the region it was established in.

In order to select the seven institutes, I sent out requests to the Directors of the 26 eligible INIs for inclusion of their institutes in this study, along with a summary of the study. Twenty Directors did not respond, one declined to provide any support, and the Directors of five institutes, one from each category of the INIs, agreed to provide the necessary support for their institution’s participation in the study. For the remaining two categories, I selected the two INIs with the highest number of faculty in their respective category, and approached the faculty members directly seeking their participation in this study. For the remainder of the study, I refer to these seven institutes as Higher Education Institutions (HEIs).

4.3 Ethical considerations

The main ethical consideration for me was to obtain candid responses from the participants during the interviews without putting them at risk. Participants appeared cautious while describing the regional engagement activities of the HEIs. In some instances, participants were careful to not refer to events or decisions showing them involved in activities not approved by the MHRD. This could be because the participants worked as employees of

the Central Government and might not have felt comfortable to offer comments with negative implications to their own job. I promised them anonymity by asking them to agree to participate in the interviews by signing on an Informed Consent Form. I clarified that the research study is not intended to showcase the regional engagement activities of one university over the others, but instead is an academic research activity whose findings will be reported anonymously.

Since the topic of the study was closely related to my own professional practice, I had to be conscious to remove my personal biases about the objectives and functioning of the HEIs during the interviews. I developed an interview schedule to better organise my interview, which I adhered rigourously. Besides, my professional experience was restricted only to the management discipline; only two of the seven HEIs in this study belonged to this discipline. However, as I conducted the interviews, I realised that since the HEIs in this study were publicly-funded government institutes, they had very little commonality with the institute that I worked at, which was privately held and not regulated by the MHRD.

As I started to analyse the data and write the thesis, I realised that because of the attributes of age, disciplinary areas, and their location, it may be possible to identify the INIs used in the study. However, this does not mean that the participant's anonymity is compromised. Nevertheless, in order to not even be able to identify the INIs, I have used pseudonyms for the names of the INIs to anonymise their location that is a key identifier of the INIs.

4.4 The pilot study

Since I was planning to conduct semi-structured interviews with nearly 60 participants in the seven HEIs, and considering the complexity of the topic and the fact the faculty in India may not be used to such studies, I felt it was important to carry out a pilot study. I carried out a pilot study in an HEI in the disciplinary area of architecture and planning, located in a semi-urban region. I conducted six semi-structured interviews with the faculty in this HEI and summarised the findings of the transcripts. I discussed my reflections and learning from this pilot study with my supervisor.

The purpose of the pilot study was to establish if my original research design of

speaking to faculty members about their regional engagement, transcribing and analysing them would be the best method for this study. It proved to be very useful. I realised that the participants were answering the questions beyond just regional engagement but were broadly interpreting this as external stakeholder engagement and institution development. Thus, the most significant learning was to approach the interviews with a broad perspective that extended into the development of a new HEI with an explicit focus on regional engagement.

Secondly, I realised that different faculty members in the new HEIs have different administrative roles and responsibilities. For instance, the Dean of Academic Programmes of the HEI in my pilot study did not have any knowledge about how the HEI is engaged with the region for research purposes. I realised that not all the questions would be relevant to all the participants. During the actual interviews, I thus spend the initial few minutes to understand the participant's research and teaching interests, as well as her/his administrative responsibilities. This helped me contextualise the discussion to every participant's involvement with the HEI.

Lastly, I was surprised with the state of the infrastructure of the pilot institute that I had visited. The HEI was operating out of a temporary building, despite being in operation for five years. Participants spent a lot of time explaining the state of the infrastructure and the reasons for the delay. As I investigated further, many of them I had selected were experiencing delays in the construction of the campuses. Hence, during my interviews in the final study, I included few questions about regional engagement in relation to their infrastructure development. As explained later in the thesis, the role of regional engagement in infrastructure development turned out to be one of the key findings of this thesis.

4.5 Data collection

i. Participant interviews

Several studies (Glass et al., 2011; Demb and Wade, 2012) suggest that junior and non-tenured faculty are less likely to participate in community engagement or public scholarship-related activities than senior and tenured faculty. Abes et al. (2002) find that among the faculty not involved in community engagement, junior faculty and non-tenured

Table 4.2: List of institutions included in this study

No	Name of the HEI	Age at the time of the study	Discipline	Type of region	Campus size (in acres)
1	IIT-UN	8 years	Technology	Urban	576
2	IIT-SN	9 years	Technology	Semi-urban	501
3	IIT-RN	8 years	Technology	Ruran	510
4	SPA-SN	9 years	Planning and Architecture	Semi-urban	74
5	IISER-SN	8 years	Sciences	Semi-urban	125
6	IIM-SN	8 years	Management	Semi-urban	200
7	IIM-SO	20 years	Management	Semi-urban	193

faculty are the least likely to begin participation. Based on the reviews of the committees, leadership positions, and governance structure of the HEIs, I found that the junior faculty members of the rank of Assistant Professor were often engaged in teaching activities and were early career researchers. Senior faculty members in the HEIs occupied senior administrative roles and carried out strategic and planning activities, whereas administrative staff carried out tactical or operational tasks. Hence, I considered all the faculty of the rank of Associate Professor or above and/or in senior administrative role as being eligible participants in this study. I sent requests for participation by email to all the eligible participants in the seven HEIs. I also sent a summary of the proposed study, and the approval from the Director of the HEI, wherever obtained. In two HEIs where I could not obtain the Director's consent, I made it clear to the Directors that I would be approaching the faculty members directly for their participation. I also made it clear to the faculty members that I would be conducting the interview without the consent of the Director. I sent a reminder email to the faculty members, who did not respond to the first request. A total of 185 faculty members were approached of which 99 did not respond, eight declined to participate, seven were unavailable to participate and 73 agreed to participate. Table 4.2 shows the final list of institutes who participated in the interviews of each of the HEIs and Figure 4.1 shows their geographic distribution across India . Table 4.3 show the break-up of participants based on their academic rank and administrative positions held.

I visited all the HEIs to carry out semi-structured interviews with the participants as per the interview schedule developed. Except for one faculty whose interview was carried out



Figure 4.1: Geographic distribution of the HEIs included in this study

at her residence, the remaining interviews were conducted at the offices of the participants or at a location within the campuses of the HEIs. Each interview lasted between 45 and 90 minutes. I informed the participants that the interview will be audio-recorded and anonymised for analysis. All the participants signed an Informed Consent Form to opt in to participate in the study. I took notes for two participants, who did not want their responses to be recorded. All the remaining participants agreed for their responses to be audio-recorded.

ii. Official documents pertaining to the HEIs

In addition to the interviews with the participants, I obtained the following type of documents from publicly available sources, and from the websites of the HEIs and the Government: (i) government legislations, reports and official documents, (ii) planning documents for HE in India, (iii) vision or mission documents, annual plans, and annual reports of the HEIs, and (iv) speeches of government officials. These were not limited to the specific HEIs included in this study but corresponded to the overall expansion of the HE system in India during 1995-2015. These were included to understand the conditions leading to the

Table 4.3: Breakdown of participants interviewed

Name of the HEI	Break up of the participants based on rank			Break up of the participants based on role				Total
	Assistant Professor	Associate Professor	Professor	Dean / Chairperson	Director	HoD	None	
IIT-UN	0	7	1	1	0	2	5	8
IIT-SN	1	10	1	6	0	5	1	12
IIT-RN	4	8	3	7	1	4	3	15
SPA-SN	0	5	4	5	0	2	2	9
IISER-SN	0	3	8	3	1	3	4	11
IIM-SN	4	3	1	4	0	0	4	8
IIM-SO	0	3	7	2	1	0	7	10
Total	9	39	25	28	3	16	26	73

establishment of the new HEIs, and the decisions and events of the HEIs in the initial years.

iii. Media reports and articles

Based on secondary research, I have compiled media reports relevant to the establishment and growth of the HEIs. I also included articles by few of the participants describing their experience in developing the HEIs.

4.6 Method of analysis

The audio files of the interviews were given to four transcribers. Each of the transcribers signed a non-disclosure agreement to conceal the identity of the participants and the associated HEIs. I reviewed transcriptions of a sample audio file of each transcriber to ensure that there were no significant variations in the quality of the final transcribed files. Except for missing pieces in a few places due to bad audio quality (in which case, I listened to the missing parts in the audio files and transcribed them myself), the overall quality of the transcribed files was uniform. I also provided the transcribers a template of transcription file to maintain consistency in formatting of the transcribed files. The interviews and transcriptions were carried out in English, and thus did not involve any translation. The transcribed files and interview notes were anonymised to conceal the identity of the participant by removing any direct or indirect references that could help identify them. I used

NVivo for Mac (Version 11.0) for analysing the data. I included in the analysis the age of the HEI, the region where it was situated, and its disciplinary focus as attributes in NVivo for each of the transcripts or reports or documents (called “sources” in NVivo). Each source was coded with relevant codes and categorised into the broad themes mentioned in the theoretical framework adopted in the study. All the codes that did not fit into any of the existing themes of the theoretical framework were categorised as “uncategorised” in NVivo. Post completion of the analysis of one HEI, I reconsidered the uncategorised HEIs to evolve sub-themes and themes. I repeated the above analysis for all the seven HEIs to finally evolve the revised theoretical framework proposed. With every additional HEI that I analysed, I reanalysed the codes of all the completed HEIs to make any readjustment to the initial themes. Once all the seven HEIs were completed in the above manner, I looked at all the “uncategorised” themes to evolve the proposed revised framework for the study. The secondary data-official documents from the HEIs, media reports and articles-were also uploaded to NVivo, coded and analysed to reinforce or validate the themes during the analysis. If the data from the secondary sources pertained to a specific HEI, they were coded to correspond to the same. In case the data from the secondary sources did not correspond to any specific HEI, they were used in the analysis to understand the links between external macro-level factors with those internal to the HEIs, particularly about the macro-level conditions that led to their establishment. Using analysis of the secondary data helped in methodological triangulation (i.e. using more than one method to collect data) to increase the validity and credibility of the results (Cohen et al., 2002). Such triangulation technique was helpful to provide a more complete and balanced picture of the phenomenon being analysed, by not just validating themes emerging from the interviews but also to provide alternative perspectives.

4.7 Limitations

I discuss below two sets of limitations of this study and their implications on the findings. The first is related to the scope of the evidence and the second is about the methods used to collect it. I address the concerns that the limitations raised about the external validity of the findings, i.e. the applicability of the findings to HEIs beyond those included in this study.

i. Limitations associated with an exclusive focus on the HEIs as sources of evidence

Relationships between universities and regions are based on mutuality, and any analysis of the same calls for (equal) attention to both. In order to fully understand the institutionalisation of regional engagement in universities, Pinheiro et al. (2012) suggest to consider including interactions with stakeholders beyond the geographic boundaries of the region, nationally and internationally. In examining university-region relationship, evidence from multiple stakeholders allows for methodological triangulation that strengthens the validity of the findings. Although I have collected evidence for this study from three sources—interviews with faculty members, official documents of the HEIs and media reports and articles about the HEIs—the views of several internal stakeholders of the HEIs (i.e. administrative staff, service providers, board members, and students) and most prominently, of the stakeholders from the regions have been excluded. This singular reliance on evidence from sources pertaining to the HEIs alone represents only one side of the HEI-region relationship, i.e. from the perspective of the HEIs. However, as explained in Section 4 (p. 17), such an approach is not problematic since the focus of the study is on development of new universities, which naturally positions universities and their different constituents as the primary participants of this study. The views of regional stakeholders are relevant, and are often included in macro-level studies. A comprehensive study that covers the perspectives of the regions and universities will be out of scope of a single Doctor in Education (EdD) thesis that is limited by 45,000 words, and does not have the scope of 100,000 words, as that of a PhD thesis³.

The other rationale for exclusion of the regional stakeholders in this study has to do with the sampling of the HEIs. Established at national level as INIs, engaging and developing relationships with the region would not occur spontaneously for the new HEIs in this study, but would need proactiveness of the faculty members and prioritisation by the HEIs to make regional engagement activities to be at par with their research and teaching activities. As will be discussed later, the HEIs had a limited number of large-scale projects with the regions;

³Regional studies around universities are often part of large-scale initiatives spanning multiple projects across regions and universities. The Universities in Regional Development (UNIREG) project was funded by the EU Targeted Socio-Economic Research Programme and involved seven European research centres and one Australian partner. The OECD initiated a major programme in 2007 of work for in-depth comparative review of 14 regions across 12 countries. This thesis is not part of any such programme.

instead, they had a few pilot or one-off initiatives with the regions, and did not have adequate internal structures or policies to institutionalise their engagement with the region. During the initial years of the new HEIs, the internal tensions and barriers faced by them are critical to shape the strategy and institutionalisation of regional engagement activities. Besides, regional stakeholders involved with the HEIs in the initial years may no longer be in the same positions making it difficult to locate and access them at the time of the study. Hence, the exclusion of regional stakeholders does not ignore any significant and pertinent evidence, and hence, may not significantly compromise the validity of the findings.

Despite the above described objectives and the manner in which the university-region relationship has been problematised in this study, the response or the preparedness of the new HEIs to engage with the region depends on its political, social and economic characteristics. Indeed, many interview participants described their experiences of regional engagement in light of certain characteristics of the region or the regional stakeholders. For studies such as this that are based on social constructivism, triangulation helps to consider, acquire and analyse valid and reliable multiple and diverse realities from multiple sources or contexts (Jenner et al., 2004). In qualitative studies such as this, exceptions in data triangulation they may be useful to develop and modify theories (Golafshani, 2003). Hence, instead of establishing the validity of the findings by collecting evidence from the region or regional stakeholders, I do it by including a large sampling of seven new HEIs that are located in similar and different regions. Five of the seven HEIs selected were located in semi-urban regions, and one each in urban and rural regions. While the five HEIs in semi-urban ensure reliability of the findings, the inclusion of the HEIs from urban and rural regions allows for data triangulation by collecting data from different contexts, and thus ensures the validity of the findings. In addition, the faculty members interviewed joined the HEIs at different points of time, were associated with them for varied durations (as can be inferred from their ranks in Table 4.3), and thus were able to describe the evolution of the HEIs at various phases starting from its founding years. This allowed for collecting evidence that captured the temporal dimensions of the growth of HEIs, thus allowing for data triangulation from different times.

In order to fully understand the evolution of the HEIs, evidence from other internal

stakeholders including students, service providers and administrative staff involved in the development of the HEIs could have allowed for data triangulation from different sources. Indeed, a few participants advised me to speak to student(s) and to some of the founding member(s), who lend their support to the HEIs in the initial years. However, considering the large size of the academic programmes in the HEIs, it would have been difficult to identify a representative sample of students to conduct a qualitative study. The other stakeholder that are missing in this study, and is often included in studies of this nature, is the administrative or management staff of the HEIs. In the HEIs, the administrative staff were involved in tactical and service roles, which required maintenance of processes and standards, and were relatively prescribed. This is not unique to new HEIs alone but broadly applicable to the Indian HE system at large (Moran and Misra, 2018). Whitchurch (2008) describes such administrative staff of the HEIs as bounded professionals—“professionals who locate themselves within the boundaries of a function or organisational location that they had either constructed for themselves, or which had been imposed upon them” (p. 5). Senior management roles, including engaging with the region, in the new HEIs were often taken up by the faculty members. The HEIs did not have a specific department or unit to engage with the region. Thus, individual faculty members were engaged with the region for their research or teaching needs; similarly, senior management staff (e.g., Dean of Research and Dean of Programmes) were engaged with the region as part of their roles. As can be seen in Table 4.3, out of the 73 participants, 47 held administrative positions. In fact, the responses of a faculty member as an administrator and as a teacher or researcher could very easily be distinguished during the interviews. Given the above, the views of the senior managers or administrators of the HEIs have been adequately represented in the analysis.

ii. Limitations associated with using self-report methods to collect evidence

I discuss below four limitations of this study associated with the usage of semi-structured interviews—one of the most commonly used self-report methods of data collection in qualitative studies. The first limitation, called the ‘actor-observer effects’, is the tendency for participants to attribute their own behaviour to situational factors and other people’s behaviour to dispositional factors (Barker et al., 2015). As stated earlier, a majority of the

participants were early-career researchers (with the rank of Assistant or Associate Professor), for whom it was their first experience of working in a new HEI. During the interviews, they commingled their individual experiences with reflections/inferences/judgements about actions and activities of their departments or institutions, making it difficult to distinguish between institutional and individual intentions, activities and outcomes. Pinheiro et al. (2012) terms this as ambiguity of understanding, intentions and meaning where “it is difficult for universities to establish clear patterns of causality between organisational actions and intended outcomes” (p. 16). Given the institutional ambiguities and their lack of academic experience, the faculty members may attribute their relationship with the region, or the lack of it, to institutional factors rather than to themselves, or vice versa. Hence, in this case, the actor-observer effects, instead of being viewed as a limitation of the self-report methods, may actually be indicative of the institutional characteristics of the new HEIs and faculty members, and thus contribute to the findings.

The second limitation of self-report methods is *consistency motif*, in which participants can maintain a consistent line in their responses that aligns with the lay theories that they are familiar with (Podsakoff and Organ, 1986). When asked about judgements or opinions, and not so much about discrete events or factual data, faculty members in this study may attempt to align their responses with prevalent lay theories around regional engagement of universities. However, given the dearth of research effort on regional engagement in an Indian context and lack of research activities in the areas of higher education, many faculty members were not familiar with lay theories about university-region relationships.

Third, personal accounts of the faculty members’ experiences about the HEI-region relationship can be idiosyncratic making it difficult to uncover the reality from evidence. This can be more problematic in this study since, in many instances, the participants had to recollect and recount their experiences that occurred several years ago, and also since in semi-structured interviews they have a tendency to answer in socially acceptable ways. The faculty members in the new HEIs will put in their best foot forward on their regional relationship from their point of view, and perhaps from the institutional point of view. However, such concerns around idiosyncratic and socially acceptable responses are suited for psychological studies that examine or rely on human behaviour or feelings. However, in this study, although

the interview questions and responses went well beyond collecting simple facts (e.g., age, rank, date) to include individual and institutional measures, activities or actions related to regional engagement, they were not intended to explore phenomenological aspects about participants' judgements or feelings about their relationship with the region. Only in discussions about their goals, and context and capability beliefs which shape the institutional openness to engage with the region, participants were engaged in a higher-order cognitive process that required them to weigh, infer, predict or interpret situations-areas of data gathering where self-reporting has the highest concern (Barker et al., 2015). However, even in this case, the responses of faculty members are aggregated at the level of HEIs to report findings. This is similar to the remedial approach of escalating unit of analysis to minimise the limitations associated with self-reporting methods in quantitative studies (Podsakoff and Organ, 1986). Hence, the aggregation of faculty comments to the unit of the HEIs and analysing the same at the level of the HEIs helps reduce the impact of the limitations on the findings.

Lastly, given the establishment of the new HEIs at the national level, the faculty members had no incentive to portray their regional engagement as a socially desirable activity. The interviews were also structured in a way to first and foremost understand the evolution of the HEIs, which in many cases went beyond the role of the region, and discuss regional engagement in light of the same. In fact, many participants even candidly mentioned that their institutions and their own research and teaching activities had very little to do with the region. Thus, the nature of research questions and of the selected HEIs minimises the impact of idiosyncratic and socially desirable responses on the findings of this study.

I discuss the findings of this study in the subsequent five chapters.

Chapter 5

The evolutionary nature of the new HEIs

The main finding discussed in this chapter is that the new HEIs differed in the ways they evolved in the initial years and their different evolutionary paths led to differences in their engagement with the region. I show that the development of the new HEIs was *evolutionary* in nature, and their growth trajectories can be classified into two types. The first can be classified *non-path dependent*. The HEIs with such growth trajectory would evolve into their current state irrespective of their initial state. The second type of growth trajectory can be classified as *path dependent* where the initial conditions and decisions of the HEIs are consequential to their final state. I argue that the initial conditions and decisions of HEIs on such growth trajectory can have long-lasting and irreversible implications on their future, which cannot simply be withered away during the course of time.

5.1 Conditions for evolutionary nature of the new HEIs

I discuss below three conditions of the new HEIs in the initial years that make an evolutionary approach suitable to explain their regional engagement, and enhance the existing theoretical framework about regional engagement.

i. Entrepreneurial environment of the new HEIs

For all the faculty members who joined the new HEIs in the initial years (i.e, in the first ten years of their establishment), it was their first experience of being involved in developing an HEI; for many, this was their first academic appointment. The new HEIs had an entrepreneurial and flexible environment in the initial years, as reflected in the following participant quotes: “Nice place, clean place with less of politics” (P61, IIT-RN); and “Institution that had been started afresh, there was no baggage” (P16, IIT-UN). The participants, who were Directors or senior faculty members who joined the new HEIs in the initial years, described developing an institute from scratch as an exciting opportunity that motivated them to join the HEIs. Many such participants recounted their first day at the HEI as beginning from a vacant piece of land.

Clark (1998) calls such development of institutions as “interactive instrumentalism” where being entrepreneurial and engaging with the region requires structural changes in capability and development of an internal culture that is incremental and is time-consuming. During this period, experienced faculty members from HE institutions guided the new HEIs in policy framing, programme development, curriculum design, and research collaborations. In such situations, many of the policies and routines of the HEIs were not fully developed, or were formed reactively when the need arose. SPA-SN did not have a policy its faculty members to take up consulting assignments until a faculty member, on deputation from another institute, joined with a large consulting assignment. Similarly, at IISER-SN, a policy for technology commercialisation was drafted only when a faculty member was approached by a company to commercialise his research. This form of choice making is similar to the evolutionary approach of the social change where the concrete environmental characteristics rather than intentional acts are generators of variety (Schelkle, 2000, p. 20). Sydow et al. (2009) term this entrepreneurial period as the “preformation phase” of the evolution of institutions that is characterised by a broad scope of action. In this phase, the effect of a choice of options cannot be predicted. Once a decision is made, this choice may, however, amount to a small event that unintentionally sets off a self-reinforcing process.

ii. Limited resources in the initial years

The HEIs operated from a temporary campus, a substantially smaller one compared to their planned permanent campus, until their own campus was developed. At the time of the study, two of the seven new HEIs in this study were operating from their permanent campuses, four out of under-construction buildings in their planned permanent campuses and one out of a temporary campus. Delays in construction, and limited accessibility and connectedness of the permanent campus impacted several activities of the HEIs in the initial years including faculty recruitment, research projects and campus lifestyle. In responding to criticism for such delays by the government auditors, the MHRD cited various reasons including delay in handing over land by the states, preparation of master plans and appointment of architects (Comptroller and Auditor General of India, 2016).

The new HEIs were also impacted by macro-level conditions of the Indian HE system during the initial years. Out of the sanctioned strength of 16,339 faculty members in all Central Universities, 6,107 positions were lying vacant in 2016 (Parliamentary Standing Committee, 2016). In the cadre of INIs included in this study, 39% of the faculty positions in the IITs, 25% in the IIMs, 8% in the SPAs and 13% in the IISERs were vacant as on 2016. In addition, the appointment of Directors or Vice-Chancellors or Chairpersons for some of the many new universities was delayed. As per a government report, the post of the Director of 14 of the 20 IIMs was vacant as on February 2017 (The Hindustan Times, 2017). Inadequate salaries, procedural delays, political interference, and lack of an urban lifestyle have been cited as some of the reasons for not attracting enough candidates to take up Directorship or faculty positions at the new universities (Bhattacharyya and Vijayraghavan, 2015; Mohanty, 2015). In case of the new HEIs in this study, the vacant position of the Director at SPA-SN was filled with recurring temporary appointments, whose tenure extended up to several years. Similarly, the term of the Director of IIT-SN was extended, until the government could appoint a new Director. The temporary Directors were not empowered to take important decisions (e.g., recruitment of new faculty and promotions of existing faculty), halting many major decisions at these new HEIs. Such situation of limited resources and uncertainty does not necessarily indicate a lack of appetite to engage with the region. In fact, in his study on universities in sub-Saharan Africa, Lebeau (2008) finds that even in times when univer-

sities have are constrained for funds and resources, local community engagement remains a significant activity.

iii. An evolving unique identity of the new HEIs

The development of institutional identity varied across the HEIs in the initial years. All the IISERs, including IISER-SN that was part of this study, was started with a unique vision to be the first of its kind of INIs to offer a research-oriented undergraduate programme in the science discipline. IIT-RN differentiated itself from the well-established IITs by working towards the development of the region it was located in. For the other HEIs, the preformation phase was focussed on recruitment of faculty members, launch of academic programmes, and completion of the construction of the campus. A distinct institutional identity was missing or emerging in the narratives of the participants from these HEIs. When asked about the uniqueness of their institute, they described that it was not different from the well-established INIs in the same discipline. For such institutions, which are on an emergent path, as compared to well-defined paths, it is important to understand the actors' aspirations for the future, sense-making of the past, and interpretation of the present to construct the emerging paths and identities of the institution (Garud et al., 2010).

The above analysis indicates that the new HEIs had an entrepreneurial environment, operated with limited resources, and were developing unique institutional identities, strategic objectives and aspirations in the initial years. As the new HEIs evolve, they are likely to search for endogenous innovations, imitate practices from other institutions and eventually evolve their own institutional missions. Schelkle (2000) proposes four paradigms to explain social change-modernisation, development, evolution and transformation. The paradigm of evolution treats social change at the level of behavioural patterns, organisational and societal structures¹. Similar to the evolving institutional identities of the HEIs discussed above, the evolution paradigm does not posit a goal which either is or should be achieved. Studies on regional engagement of well-established HEIs have so far used the concept of transformation that is applied to kinds of processes of change whose goal is well defined. These studies have

¹Development is a process of change that is orderly and continuous that has clearly distinguished stages, steps or levels. In the modernisation paradigm, the observers already know how change had ended; modernity has been achieved, and theorisation operates from that destination.

mostly analysed universities in their current state, and do not delve into historical aspects. In their report that analyse the various changes that universities have created across 15 countries, Brennan et al. (2004) emphasise the important of analysing regional context and history in future research. They state, “Future research will require detailed empirical inquiry that looks beyond the more cosmopolitan worlds of capital cities to the regional and local settings where historical particulars may count for more than the agendas of international agencies. Universities are of their societies and their histories” (p. 9). While a few of the studies² included by Pinheiro et al. (2012) in their edited volume—from where I adopt the theoretical framework for this thesis—are based on new universities, specific emphasis on them as evolutionary institutions is missing in these studies. Hence, many of the factors for regional engagement of universities suggested in the theoretical framework by Pinheiro et al. (2012) may not yet be fully applicable to the new universities to sufficiently explain their engagement with the regions. These suggest that incremental revisions to the theoretical framework or mere adaptation of the framework to the Indian HE context will not be sufficient to answer the issues raised in this thesis; rather the theoretical framework will need to be enhanced or revised by considering the different growth trajectories through which the HEIs arrived at their current situations.

5.2 A brief introduction to path dependency

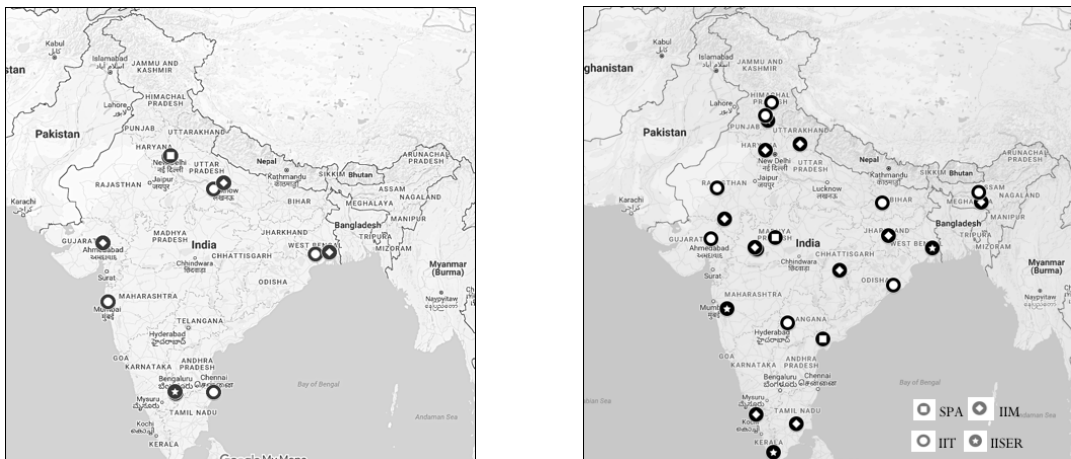
Path dependent organisations or systems are those which are characterised by non-ergodicity—an inability to shake free of history (Martin and Sunley, 2006). The identification of path dependence involves tracing back a given state to a particular set of historical events and decisions, and showing how these events and decisions themselves are contingent occurrences. A contingent event, one of the defining characteristics of path dependency, is an occurrence that was not expected to take place, given certain theoretical understanding about how causal processes work, and has a lingering effect on the path taken by the system or the institution (Garud et al., 2010; Martin and Sunley, 2006). Contingent occurrences cannot be explained on the basis of theoretical considerations and have substantive long-run

²The Nelson Mandela Metropolitan University discussed by Wangenge-Ouma and Fongwa (2012) was established in 2005. The University of Central Asia discussed by Oleksiyenko (2012) was established in 2000.

effect on the future path of organisations or systems.

In path dependent systems, the *order* of events in the early stages also deterministically influences the path that a system will take in the future. The concept of “lock-in” is closely related to path dependency wherein organisations or systems get trapped in a particular trajectory or situation that is sub-optimal or inefficient and are not able to emerge out of it. They can get out of such lock-in situations through the disruptive impact of an exogenous shock or an endogenous crisis. Path dependency has been used by economists to explain why certain regions/states seem to get stuck in a particular condition, whereas other regions are able to thrive on a growth path. Similarly, historians or sociologists have used it to explain the evolution of certain institutions or practices in the society (Schreyögg and Sydow, 2009). One type of analysis of path dependency considers sequence of events as self-reinforcing, i.e., initial setups in a particular direction induce further movements in the same direction such that over time it becomes difficult to reverse it. The other type of analysis of path dependency includes reactive sequences. In a reactive sequence, each event in it is both a reaction to antecedent events and a cause of subsequent events. Self-reinforcing sequences reinforce early events, whereas reactive sequences transform or may even reverse early events.

One of the criticisms of path dependency is its generic nature, which makes it applicable to almost any situation. Scholars (Schreyögg and Sydow, 2009) have attempted to provide specificity to this by analysing its applications to a variety of contexts (i.e. products, situations, industries, and economies). Similarly, universities, like most institutions, can be thought of as evolutionary, and their evolution is path dependent in the usual sense that directions for future development are foreclosed or inhibited by decisions taken in the past. However, the purpose of my analysis is not to prove or disprove the path dependent nature of each of the new HEIs (which will require more detailed and different data collection and analysis), but to identify the conditions under which new HEIs can become path dependent, and how such path dependency will influence their ability to leverage the region for their development. The analysis below presents and analyses evidence in that light. It identifies the contingent and exogenous events that had lasting effect on the paths of the HEIs and set off a series of reactive or self-reinforcing sequences that can create lock-in situations for



(a) Distribution of INIs established prior to 1995 (b) Distribution of the INIs eligible for this study

Figure 5.1: Distribution of INIs in India

them.

5.3 The placement of the HEIs as a contingent event

In path dependent evolution of institutions, the contingent events or decisions—often occurring before the initiation of the path—can only be explained by an accident or chance. The occurrence of such contingent events cannot be predicted based on what is already known about the institution. The initial decision is not a single event but an impetus, a trigger stimulating further action (Sydow et al., 2009). I find that the *placement* of the new HEIs in the region can act as a contingent event and set off a series of sequential or self-reinforcing events for them that are hard to undo.

Several committees set up by the government (Kakodkar et al., 2011; IIM Review Committee, 2008; Prof. Yashpal Committee, 2011), despite having largely agreed on the need for expansion of quality education in India, have not provided a framework or an analysis for deciding the locations of the new universities in India. In its 256-page report—“Taking IITs to Excellence and Greater Relevance”—about enhancing the quality of the IITs, the Anil Kakodkar Committee mentions only one line about the region: “Identify the site (near an industrial area and/or complementary educational institutions; with good access including an airport) and have the site transferred to the Government” (Kakodkar et al., 2011, p .

213). None of the discourses analysed in this study provided accurate details about the processes or norms followed by the government in deciding the location of the new HEIs; most suggested that maintaining regional political balance across different states of India as one of the main drivers. As shown in Figure 5.0b, the 26 INIs, established between 1995 and 2015 and deemed eligible for this study, were widely spread out across India as compared to the ten well-established INIs operating prior to 1995, shown in 5.0a. A faculty who interacted closely with the MHRD and was a member of the Committee set up for expanding IITs writes (Upadhyaya, 2005, para 23):

The final selection [of the location of the IITs] will depend upon both the quality of the institute and the political push and pull. Some states, even those not listed in committee's report, who are demanding an IIT might be pacified by offering other prestigious institutes such as the AIIMS, the National Academy of Science and Engineering, and NITs.

This is not surprising for the Indian HE system where the government has retained control on the upper echelons of HE (Altbach, 1993; Lall and House, 2005), and where universities have been important political institutions, often leveraged by politicians and political parties for patronage and prestige (Altbach, 1993; Mohanty, 2015). The Members of Parliament (MPs) of the region leveraged the establishment of the new HEIs in their region to showcase their contribution to the development of their respective states. This was adequately reflected in the narrative of the Foundation Stone laying ceremony of IIT-RN:

The Union Minister of State of External Affairs emphasised the efforts put by him and other leaders in sanctioning of the IIT-RN. He also expressed hope that IIT-RN will open up opportunities for receiving quality technical education in the state. (Anonymous, 2007)

The comments by the MPs in the parliamentary debates suggest two main considerations for the establishment of the new HEIs; first, the new HEIs were expected to bring employability and economic development to the specific regions that the MPs represented, and second, there was an emphasis to bring about regional parity in distribution of these HEIs across states. Two MPs commented:

A few States only have developed from technical education point of view. But in other parts of India, people are deprived of it. They cannot develop unless

they are given special importance in the field of technical education. (Member of Parliament, Parliamentary Debate, 19 August 2011)

To avoid regional imbalance in the distribution of HEIs in the country, there is need for establishment of IISER in Bihar immediately as Kolkata, Pune and Chandigarh have already got IISER. After bifurcation of Bihar, almost all institutes of excellent education and research went into Jharkhand...Establishment of IISER in Bihar will be a step towards minimisation of prevailing regional imbalance in the distribution of educational institutes across the country. (Member of Parliament, Parliamentary Debate, 27 November 2006)

These considerations were reinforced by the faculty members of the HEIs, as is evident from the following comments: “So actually, influential persons in this region in 1990s wanted that it should not go elsewhere, it should come to this region only. They persuaded the State and the Central Government” (P 43, IIM-SO); “One of the MPs insisted it to be in this region” (P 51, SPA-SN); and “In the beginning, there was a proposal to have four IISERs. This was approved by the Central Government. Then the state government came in and added one more in [this region]. Under the then Prime Minister, it was decided to be setup in [this region].” (P 20, IISER-SN).

The seven new HEIs in this study were situated across five states in India. These states had significant variations in their state of HE and in socio-economic and demographic profiles. Table 5.1 shows a few illustrative indicators of the economic growth and the state of HE in these states. Each of these characteristics, and many more similar characteristics pertaining to the social, economic and cultural aspects of the region, can potentially influence the evolution of the new HEIs. For instance, the availability of higher number of PhD students and faculty members in state #3 could make it easier for the new HEIs to attract faculty members or research staff than other states. Hence, in addition to the apparent lack of consideration given to the region in deciding the location of the HEIs, such heterogeneity in the socio-economic and HE characteristics of the states in which the HEIs were situated further accentuated the uncertain regional conditions that the new HEIs found themselves in.

The above analysis suggests that the final decision about the location of the HEIs was in fact random and exogenous to the context of the HEI itself. It is random in the sense

that it was not based on the context of higher education or the region, but was driven by a political context.

Table 5.1: Indicative socio-economic and HE characteristics of the states where the HEIs for this study are located^a

No	GER (%) ^b	No of PhDs	No of universities	No of faculty ^c	GSDP growth rate (%) ^d	Urban population (%)
1	15.1	131	14	3154	13.2	23.24
2	35.5	277	10	2710	9.2	10.03
3	17.9	1465	10	16070	16.8	27.63
4	28.5	515	3	9162	10.1	37.48
5	33.4	723	13	16851	12.3	33.36

^a Data collected from diverse government sources for the year 2015-16, except for % of urban population that was calculated for 2011, from the India Data Portal.

^b Gross Enrolment Ratio in HE.

^c Includes Professors and Associate Professors only.

^d Gross State Domestic Product.

5.3.1 Initial conditions due to contingent placements of the HEIs

In case of path dependency, the initial events or decisions are usually distinguished from subsequent ones that reinforce a particular institutional path. Not keeping them separate will make the path predictable based on these initial events. In case of an organisational context, Sydow et al. (2009) advises for a less randomised conceptualisation of these initial events, and that the initial conditions cannot be considered causal determinants. A determined process would follow a prescribed course of events right from the beginning.

Except for receiving funds from the government, once the region was identified and the Director appointed, the HEIs were on their own to coordinate and work with the regional stakeholders to start their operations. Various comments by the participants suggested that the regional stakeholders were not consulted prior to deciding to establish the HEIs in the region. This led to challenges for the new HEIs in establishing the campus, as described in the following comments: “We kept on requesting [for support]. I mean there has been continuous requests going and but these were out of control, otherwise we would have taken much pace [in establishing the campus]” (P32, IIT-SN); “If you see, we are struggling with every single thing right now with the new institute and the new campus. There were debates

on land, now there is no water supply; there is no electricity, for everything there is negotiation with the government and localities” (P7, IIM-SN). Below are two statements describing the contrasting experiences of the two HEIs in working with the region:

As far as state government is concerned IIT is a very big deal for this state. They really look up to IIT and bend over backwards to help us. The only thing they cannot do is give us money. (P67, IIT-RN)

The sentiment was very good but with the national institute, ministry people were not giving any weightage to us. Also, when you have the Director of the institute who was not answerable to the State Government, it becomes a problem. I could go directly to Chief Secretary for my work; he can't call me only during election. He would also visit us, but it was always a friendly relationship whenever we invited them they came. (P53, SPA-SN)

Such contrasting experiences of the faculty members about perceptions and preparedness of the region to engage with the HEI indicate that the regions were caught off-guard about the announcement of the HEIs, and their preparedness and willingness to deal with the complexities of establishing an HEI differed significantly. A supportive regional community, and coordination between the region, the state and the national government was thus essential during the initial years of the HEIs. For instance, the new IITs were planned on campuses that needed nearly 500 acres of land. It was difficult for the State Governments to find such large parcel of land within the main city locations. Hence, all the IITs and, even the other new HEIs included in this study, were in peri-urban locations, far away from the main cities/towns. IIT-SN and SPA-SN had to go through a troublesome period to obtain a legally valid land from the state, sometimes even resulting in tensions with the surrounding communities. In addition, due to their remote locations, the HEIs faced multiple procedural hurdles in developing their campuses. As a result, the HEIs operated in a temporary campus—typically another government—owned facility located in the region—for a duration longer than originally planned, until their own facility came up.

The location of the HEIs was also an important consideration for many of the faculty members who joined the HEI in the initial years. Factors such as proximity to parents, opportunities for spouse to work, educational facilities for kids, and other lifestyle-related

preferences, and the state of campus development weighed in while choosing to join the new HEIs. At IIT-RN, as many as 50% of the 55 faculty members were looking for jobs for their spouses as well. The Director of IIT-RN stated: “On an average, one or two faculty members leave us every year due to lack of work opportunities for their spouses. We are in the process of setting up a research centre so that entrepreneurial opportunities can be made available for spouses.” Thus, the regions where the HEIs were established in, and the specific location of their permanent campus shaped the initial group of faculty members who stayed on with the HEIs, who were subsequently instrumental in shaping their future paths.

The government assigned one of the well-established institutes as a “Mentor Institute” for each of the new HEIs, whose faculty members were responsible for designing policies, help in delivery of academic programmes and development of the campus in the initial years. A notification about the role of the Mentor Institute in the development of one of the new HEIs stated the following:

The activities of the IIT-RN Cell shall be managed by the Coordinator, Conveners, other members which will include faculty, officers and staff of IIT [a well-established IIT] and also some others appointed for the Cell. The Cell will work under the direct supervision and control of Director IIT [a well-established IIT] who is also the Director of IIT-RN.

The Mentor Institute was chosen to be one that was closely located to ensure convenience of access between the old and the new institute to allow for faculty transfer and knowledge exchange. Hence, the contingent event of deciding the location of the HEIs was a key determinant for identifying the Mentor Institutes for the new HEIs.

Garud et al. (2010) argue that the term historical accidents or contingency in path dependency has been misunderstood to mean irrational or arbitrary actions. Rather historical contingency implies that a particular state had been reached only because certain states had occurred earlier. If these prior states had not occurred or had occurred differently, the current state would not have been reached. Thus, contingent events, as those described above, have more to do with non-ergodicity than with non-purposiveness. The above analysis shows that rather than deliberations about which region is best placed to have what types of HEIs, and which of them is best placed to contribute to the development of the region, the location of the HEIs seems to have been determined by the political context, that is exogenous to

the future growth of the HEIs. Thus, in case of all the seven HEIs the decision about their location was a contingent event. The regions where the HEIs were located led to a set of initial conditions for the HEIs that included the nature of support received from the regional stakeholder, the pace of development of their campus and the hiring of the initial group of faculty, all of which may have lasting effect on their future paths. However, this alone is not sufficient for the HEIs to be in a path dependent situation with the region. In addition to the initial chance events, preexisting resources, competences, skills and experience inherited from history may also stimulate the creation of new HEIs in the preformation phase. In the subsequent section, I analyse the effects of some of these early decisions on the paths of the new HEIs, and how they promote or constrain engagement with the region.

Chapter 6

Early path creation and development

In the previous section, I have shown that the placement of the new HEIs in the region is an exogenous contingent event that can shape their evolution to be path dependent. Evolutionary institutions that are path dependent move to the “path-creation” and the “path-development” phase after the initial conditions are established during the preformation phase (Martin and Sunley, 2006; Sydow et al., 2009). The decisions taken during the preformation phase acts as a trigger for further development of the new HEIs in to these phases, and for inclusion of regional engagement activities into the same. The path-creation phase is characterised by “purposive or intentional experimentation, and competition between different agents that leads to the emergence of a new path” and the path-development phase is characterised by the “emergence and development of local increasing returns and network externalities that assist in the development of the path” (Martin and Sunley, 2006, p. 21). It is in these two phases that certain new HEIs are likely to become better oriented to leverage the region than others, who would operate in isolation from it. In this chapter, I make three arguments to support the claim that the nature of evolution of the HEIs during path-creation and path-development phases shapes the integration of regional engagement into their future trajectories. First, I show that a set of antecedents that are exogenous or endogenous to the HEIs play an important role in leveraging the region in the path-creation phase. Second, I show that the reactive sequence of activities of the HEIs in the path-development phase

shapes their preparedness to engage with and leverage the region. Third, I find the important role of the Director—Head of the institution—in shaping up evolutionary path of the new HEIs.

6.1 Antecedents for path creation and development

In this section, I analyse the data collected to find a set of preconditions that are exogenous or endogenous to the HEIs, and are consequential to their orientation to engage with the region for their development. I have referred to these preconditions as “antecedents”. These antecedents help in explaining why delving into history may be relevant to understand the current state of the new HEIs and can give new insights into their regional engagement. I find that three antecedents—historical relational networks, threshold resources, and institutional legacies—that influence the tensions and challenges faced by the new HEIs to leverage the region for their development during the path-creation phase.

i. Historical relational networks

Established as national-level institutes by the Central Government, the HEIs recruited faculty members from all over India (and the world) through a uniform norm of recruitment and evaluation. Although “returning to India” or “being close to family members” or “lifestyle or professional opportunities for family members” were dominant considerations for the faculty members to opt for the location of their employment, they did not have any prior formal or informal relationships with the stakeholders in the region. Additionally, although the HEIs had appointed a Dean for outreach or industry engagement, it was an administrative role taken up by a faculty member to facilitate industry interactions. Only by the time of this study, i.e. after about ten years of their establishment, the HEIs had started to proactively reach out to the region to advance a regional engagement agenda aligned with research and teaching activities. As a result, in the path-creation phase of the HEIs, the faculty members were *independently* responsible for their research activities, including forging relationships with regional stakeholders. In a few cases where individual faculty or the HEI were engaged with the region, it was initiated by the regional stakeholders proactively approaching the HEIs or the faculty members, or due to prior personal connections of the

faculty members with the regional stakeholders. The below comments by two participants reflected the above approach:

My co-authors are in China, some in Korea. My classmate was Chinese, we graduated from NUS in 2006, so we had lot of Chinese friends. So, wherever they went, we were in touch. My supervisor was Korean. (P 6, IIM-SN)

If you have some contacts from previous batch mates or whatever; if they are in industry and are interested; ..you work together.... if you don't have those, than it becomes difficult. (P 39, IIT-SN)

In addition, many faculty members at the HEIs were young academics who tend to collaborate less compared to experienced ones. McDowell and Melvin (1983) suggest that collaboration of academics peaks around 15 years of experience. As the HEIs grew older and faculty members became experienced, they could establish and deepen relationship with the regional stakeholders through academic programmes, outreach activities, and by offering advisory or consulting services. Thus, the research activities of the faculty members in the path-creation phase of the HEIs were mostly influenced by their historical relational networks, formed prior to joining the HEIs, rather than by the institutional engagements with regional stakeholders. Such networks enabled them to continue some of their work prior to joining the new HEI rather than starting new streams of work in collaboration with the region.

Similarly, at an institutional level, the prior relational networks of the Director influenced the evolution of the HEIs in the path-creation phase. At IIT-RN, the visit of an academic from US—known to the Director prior to his joining the HEI—triggered a chain of events leading to a significant institutional collaboration with a major business. A faculty member described this: “It has succeeded, I would say, by accident in one sense” (P 63, IIT-RN). The government carried out a deliberation exercise involving several faculty members from various institutes to discuss the structure of the proposed IISERs. A few faculty members involved in that deliberation exercise were amongst the initial faculty members to join IISER-SN, including one of them as the Director. After joining, the Director called upon a few of his prior colleagues to help establish the institute, some of whom subsequently joined as faculty members. One of the participants described his experience of joining the new HEI:

When [Head] became the Director, I think within a week or so he called me asking

me to help set up IISER-SN We [both me and my wife] actually came to help the Director initially for a year. The Director at our previous institute was kind enough to grant us leave. [Head] spoke to him. Then we spent first year here and we decided to continue (P 27, IISER-SN)

The IISER-SN was the first of its kind INI in India in the area of science, and thus, it was not well-known to aspiring faculty members, who had apprehensions of joining such a new type of institute. Such apprehensions were less prominent amongst the new IITs and IIMs since the well-established IITs and IIMs have been around for nearly five decades. As a result, the IITs and IIMs were able to get sufficient applications for faculty positions through their regular channels. So, in addition to relying on their historical relational networks, the Directors of the IITs or IIMs relied on recruiting faculty through regular channels, and on visiting or contract faculty appointments to make up for the shortage of faculty in the initial years.

Many participants suggested that it would be easier for them to establish their reputation or pursue their own research agenda in new HEIs as compared to a well-established HEI. Faculty members form relationships to choose their own groups, to attract desired colleagues from outside, and to be welcomed into groups they would like to join (Gersick et al., 2000). These would more easily possible in the new HEIs with a strong presence of historical relational networks. Faculty members who joined the new HEIs because of their past relationship are driven by their desire to exert control over their reputation and enjoyment of work by controlling the membership of one's group. Hence, the above analysis suggests that the faculty members' dependency on their historical relational networks established prior to joining the new HEIs makes these institutions evolutionary and path dependent.

ii. Threshold resources for engaging with the region

I find that in many cases leveraging the region for research activities required certain threshold or minimum resources that could seed or kick start regional engagement activities for the HEIs. These threshold resources could include a concentration of faculty members in an academic area, financial surplus from other activities to support regional engagement activities, or operational stability in conducting research and teaching activities. A participants described the reason for not starting regional engagement initiatives:

Any institution like IIM-SO, takes around seven to eight years to stand on its own, in a fruitful manner. We are about 19 years old now. We also in a very humble way started giving something [to this region] because when we exist we have to give something back. (P 43, IIM-SO)

Similarly, other participants described the lack of adequate space in the temporary campus as a constraint to initiate regional engagement activities. One of the participants described the need for some minimum faculty members to be able to start new programmes:

So for launching a new programme, you need to hire new faculty; current faculty is already teaching. The government gives sanction for new faculty only when you have had the students. Now we cannot hire them because the infrastructure is not there. So, typically the way we launch new programmes is that even though we don't have adequate number of faculty to run. So, we take extra teaching load for a few months and start it. (P63, IIT-RN)

The threshold or seeding resources explained above were exogenous to the regional engagement of the HEIs, i.e., the regional engagement activities themselves could not provide the HEIs with such resources. However, once the threshold faculty were hired, they could work towards acquiring the required threshold resources to engage with the region. Hence, it was not until several years after establishment and at a particular point in their evolutionary paths that the HEIs could consider leveraging the region for research and teaching activities.

Opportunities for regional engagement for universities do not present themselves as mutually exclusive or successive to either teaching or research activities. They are often multilayered and can be leveraged for various purposes at multiple levels by the universities (Uyarra, 2010; Weerts and Sandmann, 2010). Having threshold resources allowed the HEIs to create structures and mechanisms that present a holistic view to the regional stakeholders, and embrace norms and values that integrate research and teaching functions with the region. IIT-RN was in the process of establishing a Centre of Excellence specifically tailored to the unique region it was located in; IIM-SO had established a Special Interest Groups to engage with the industrial cluster located nearby; IIT-SN had a Gear Research Lab that aimed to work with the automotive industry in the region. Such initiatives were feasible due to the availability of a group of faculty members who were willing to explore broad thematic areas of research rather than narrowly defined research projects and/or due

to additional funding that helped establish the necessary infrastructure for these initiatives. Describing his approach towards setting one such entity, one participant stated:

The idea of this was ...to look at some areas which might be of mutual interest. But it has been difficult to get people to work together. It has been difficult to create an agenda for these... the idea I had was, we will start four or five different groups and whoever group gets some attraction then we try to convert it into a Centre. (P 44, IIM-SO)

Another faculty member expressed similar views for the need to bring multiple colleagues together to start a new course:

So, when we got the infrastructure and the expertise, why not have the centre of excellence? It will cater to all your infrastructural requirement, providing the expertise to the surrounding area which happens to be automobile sector and which demands a solution for this ...Then we pumped up and consolidated... now, we are providing industrial consultancy and industrial problem solving. (P 35, IIT-SN)

In both these cases, faculty members were required to go beyond their individual disciplinary research projects to develop a comprehensive agenda for engagement with the region. For such efforts, Weerts and Sandmann (2010) stress on boundary-spanning roles (e.g. , Vice-presidents for Outreach and Engagement, Centre Directors) who take on both research and teaching functions to develop relationship with regional stakeholders and promote mutual understanding between the institution and regional stakeholders. Boundary spanning is not confined to an individual job description; rather, it refers to broader institutional strategies to engage with external partners. Some of the challenges described by faculty members in starting these initiatives indicate the absence of such roles in the new HEIs: “I think we needed to have some kind of evangelist for each of these SIGs....somebody who takes up something and says, you know, I really want to make this happen, I am interested in this” (P44, IIM-SO); “It is just individual. At the moment, I think no other IIT or at least I can guarantee my IIT or new IITs there is no such cell that promotes collaboration between the institute and investigating institute. There is no such thing. It would be nice to have but we don't” (P13,IIT-UN). However, this was difficult for the new HEIs in their path-creation phase due to the separation of their research and teaching functions, and the conflicts in time

and energy encountered by the faculty members. Hence, in case of the new HEIs, the distinct and narrowly defined research projects and traditional teaching functions makes it difficult to evolve such boundary-spanning roles that facilitate interactions with the region.

iii. Institutional legacies

Except for IISER-SN, the six HEIs included in this study were part of an existing cadre of institutes in India called the INIs . This well-established INIs has the highest standards of excellence and reputation in India, attract the best faculty and students in their respective disciplines, and are often the only institutes from India to figure in global rankings. All the IITs, including the new ones, and the IISERs are part of the IIT Council and IISER Council respectively that discussed their functioning, conducted external reviews and helped frame uniform policies. All the IIMs were governed by the Indian Institute of Management Act, 2017, that prescribed their governance and operating structures. In addition to such formal structures, there were adequate informal forums to share best practices and policies to foster common norms of quality and excellence across these institutes (I was myself invited to one such forum of the IISERs on the occasion of their 10th-year celebrations). The government itself wanted to create more of similar institutes than different ones. The Prime Minister of India stated the following in his speech: “Individually, while each IIT represents academic excellence, together, the IITs as a system of technological education and research are world-class, consistently ranked very high in most global surveys and are unique in the world” (Prime Minister’s Office, 2008, para 4).

Due to such strong reputational legacies of the well-established HEIs and an emphasis on maintaining homogeneity between the well-established and the new HEIs, the new HEIs in this study perceived the well-established institutes as a benchmark for excellence and reputation that they compared themselves with, and hoped to exceed in due course. Such comparisons were reinforced by elaborate public discourse comparing the new HEIs to well-established ones (Business Today, 2016; Manuel, 2017). Comments like “conscious effort to make sure that we are not just copying the old IITs exactly as it is”; “otherwise old IIT you see that curriculum is revised in 10 years. We revised in 3 years’ time in 2013 itself”; “now they have to have their own identity and I think that’s been a struggle so to come

out of the shadow of IIM Ahmedabad” suggest that the well-established HEIs shaped the practices and norms for the new HEIs. Even for IISER-SN, despite being the first institute of its kind, comparisons were drawn with the Indian Institute of Science, an independent research-intensive HEI in the area of science. Similarly, the new HEIs had the advantage of the reputation of the well-established institutes while engaging with their different constituencies. Faculty members expressed a sense of responsibility and concern to eventually match up the reputation of the old institutes (“responsibility attached to rise to the same name”; “after all we are IITs”; “the brand name of IIMs matter”; “difficult to match the aura and prestige of the old IITs”).

The Mentor Institutes bootstrapped the new HEIs in the initial years through a variety of means including sharing of faculty to teach in programmes, framing policies, helping plan and develop the infrastructure. In some cases, faculty members from the Mentor Institutes were even appointed as temporary/interim Directors of the new HEIs. Several faculty emphasised the role of the mentor institute as below:

The institute got formed in 2008 and then director appointment took some time. So we started in 2009 the initial recruitment, before which IIT Madras faculty used to come and teach us. (P15, IIT-UN)

That’s also the advantage of being in the city. We could have lots of people, especially since we were in another university, so their faculty would come; we used their class rooms. In fact, this school started before the Director was appointed; the Director of our neighbouring institute was appointed as the founder Director. (P52, SPA-SN)

This further confirmed that the early involvement and mentoring by the well-established HEIs implied that comparisons between the old and the new HEIs were legitimate and acceptable.

The well-established INIs had an elitist position in the higher education system in India, while the other types of HEIs (i.e. the central universities, the private universities, and the state universities) were perceived to be catering to mass educational needs. While the quality and relevance of research outputs from these institutes were a matter of persistent debate and concern (Hiremath & Komalesha, 2017), the elitism was primarily ascribed to the high selectivity of students in these HEIs and the close linkages between societal prestige and

higher education in the Indian hierarchical society (Altbach, 1993). The preference for these elite HEIs was often distinctly specified in advertisements for faculty or recruitment of students or solicitation of grant proposals or consulting assignments. Although a national-level institutional ranking framework was launched only in 2015, rankings by several private organisations invariably place these institutes in top echelons. The creation and survival of INIs as elite HEIs was a deliberate characteristic of the Indian HE system and was sustained by the co-existence of long tail of non-elite HEIs that catered to the massification objectives of the Indian HE system. The massive expansion of these elite institutions between 1995 and 2015 suggested their transition to a mass education system. Such mass education systems tend to be more diversified and be more responsive than elite systems to cater to the heterogeneous and diverse needs of the stakeholders. Such diversity offered opportunities to the new HEIs to experiment with innovations in research and teaching. However, such experimentation was limited to teaching functions; many faculty members described about their differentiated curriculum and pedagogy as compared to the well-established HEIs. However, the new HEIs held on to the same academic norms and values of research as the well-established ones to maintain excellence and reputational aspiration. The hope was that a combination of traditional norms and values of the old HEIs with teaching innovations will help gain the elite status that the older institutes enjoyed. The larger the influence of academic norms and values, the lower is the level of diversity of the HE system (Van Vught, 2008). Besides, the rapid rate of expansion of these elite institutions between 1995 and 2015 to a mass education system led them to be first and foremost compete amongst themselves for reputation by hiring the best faculty, students, funds and other resources. Such competition for scarce resources tends to make institutions similar through a reptilian process in which certain HE institutions tend to move to a position where other institutes were before, i.e. lower-status institutions trying to gain status by imitating higher-status ones, called “academic drift” (Morphew and Huisman, 2002).

The above analysis suggests that the HEIs’ aspirations to be in the same elite league as that of the well-established ones created a self-reinforcing mechanism that provides legitimacy to the nature of research activities to be carried out, which formed the institutional identity and individual identity of faculty. As described by Mahoney (2000) in the ‘legitimisa-

tion framework', the institutional reproduction of the HEIs was grounded in faculty members' subjective orientation and beliefs about what is appropriate and morally correct. Based on their prior relational networks and the aspiration to be in the same league as those of the older HEIs, the faculty member perceived the knowledge production mechanisms of their prior collaborators as legitimate and thus voluntarily opt for its reproduction rather than exploring new ways of collaborating with academic or regional stakeholders. Such legitimisation processes are marked by a positive feedback cycle in which an initial precedent about what is appropriate formed the basis for making future decisions. In case of the HEIs, performance measurement and reputational aspects provided the basis for this feedback mechanism.

6.2 Reactive sequences for path development

I analyse the role of the contingent events described in the earlier section in setting off reactive or self-reinforcing sequences that further moved the HEIs on an emergent path. As an evolutionary path for an institution emerges and develops, the sequence of events in the path can be explained by either of the two properties. In self-reinforcing sequences, initial steps in a particular direction induce further movement in the same direction such that it becomes difficult to reverse it. These events have increasing returns that means the likelihood of further steps along a given path increases with each move down that path until an equilibrium point is reached. These paths have critical junctures that are adapted from a particular institutional arrangement from among two or more alternatives. The other explanation for development of paths is reactive sequences that are chains of temporally ordered and causally connected events. In a reactive sequence, each event in the path is both a reaction to antecedent events and a cause for subsequent events,. Whereas self-reinforcing sequences are characterised by a process of reproduction that reinforces early events, reactive sequences are marked by backlash processes that transform and perhaps reverse early events. I find that the constrained resources in the pre-formation phase set off a set of reactive sequences in the HEIs, due to which they first focussed on the development of academic programmes and infrastructure followed by research activities.

Balancing teaching and research, sequentially

The new HEIs were started with a strong emphasis on expansion of access to high-quality education in India. SPA-SN was established to cater to the growing needs of architects and planners in the country . The IISERs were started as first of a kind science education and research institutions focussed on undergraduate teaching in science. Many of the faculty members at IISER-SN suggested that "Education" precedes "Research" in the name of the institution to reflect its focus on teaching. The emphasis on teaching underpinning the rationale of establishing the new IITs is reflected in the speech by the Prime Minister of India (Prime Minister's Office, 2008) :

This [the intake capacity constraint] is highly regrettable because it denies opportunity to thousands of deserving young men and women. If India is to become a global leader in science and technology as well as an economic superpower, such talent must not go un-utilised. Many more such institutes are needed. Realising this, our government decided to increase the capacity by creating eight new IITs in the 11th Five Year Plan.

Each of the new HEIs was based on an initial plan of the MHRD to enroll a specific number of students in a fixed time frame. The campus development plans were based on enrolment of students and roll out of academic programmes, based on which faculty strength and funding were approved by the MHRD. Hence, the new HEIs were required to begin their academic sessions within a year of their approval of establishment by the government. The teaching activities were managed and monitored through collective efforts of faculty, and through institutional arrangement such as the academic council that was involved in the design of academic programmes and their curriculum. However, research activities were managed by individual faculty members with the HEIs being a facilitator to support faculty and encourage research excellence. Individual faculty members had complete freedom to carry out research related to their interests and were largely responsible for their own research performance. However, the contingent events discussed above resulted in scant resources-inadequate infrastructure, insufficient faculty and lack of funds-as the HEIs entered into a path-creation phase, and started their academic and research activities. The following comments by a faculty member reflected the broader emphasis of putting teaching ahead of research:

It takes 5-6 years for you to get established and by that time you need to also get your own infrastructure in place. So, when you have both in place the classes are running and infrastructure is in place probably then you will think of doing research. I think this comes naturally also, initially teaching, putting the class in order, getting faculty, starting our own courses, getting our own executive programmes, then the research excellence comes. (P 46, IIM-SO)

Prior studies indicate that, at a normative level, many academics believe that teaching is their primary commitment and not research (Hattie & Marsh,1996). While faculty members in the new HEIs did not strongly represent such beliefs, the emphasis on academic programmes, as explained above, led to distinct treatment of teaching and research activities by the faculty. The above analysis indicates that with limited resources, faculty members in the new HEIs treated administration, research and teaching as distinct activities that are managed, assessed and funded separately.

Almost all faculty members in the HEIs were involved in institutional development efforts including policy making, campus development and programme development in the initial years. While involvement in such activities was appreciated by the leadership, research and teaching activities were given far more importance during performance evaluation and promotions. A few faculty members even had a sense of regret in getting too involved in such activities and wanted to pull back and devote more time to research. One faculty described his experience:

There was a promotion application for which I applied and got rejected. I was asked-where is your research? where are your papers. So I was so hurt since I was working so much for the institution that I forgot my family and dedicated so much time to this that to upgrade myself there is no research.... I was asked to help again but again, I am thinking to resign from this because I am not able to concentrate on my research. (P 54, SPA-SN)

While such stark experiences may not be a generic experience, these were reflective of a broader conflict faced by the faculty in balancing their administrative, research and teaching functions. Coate et al. (2001), based on their study of relationships between research and teaching activities in universities in the UK, suggest that such relationships are shaped by value orientation of academic staff and the management of available resources. Such

conflicts faced by faculty members are "represented by the requirements of curricula versus scholarly interests, the focus of graduate versus undergraduate programs, the disciplinary versus institutional identity of the faculty, and the publicly declared versus the actual operating functions of universities" (Hattie and Marsh, 1996, p. 508). Hattie and Marsh (1996), with their meta-analysis of 58 studies with similar and opposing views about the relationship between research and teaching, contend that there is indeed no relationship between these two. Moore's (1963) Scarcity Model suggests that potential conflicts in time, energy and commitment faced by faculty members can lead to negative relationships between research and teaching functions (as cited by Hattie & Marsh, 1996). The research and teaching functions in universities can be complementary as insights from research (and consulting) can enrich teaching; they can also be competitive as undue emphasis on funded research can undermine teaching excellence (Serow, 2000) .

Developing teaching and research paths

Since the HEIs operated from a temporary campus for the first few years, their size, location and infrastructure quality influenced the type and scale of academic programmes that the new HEIs could start. Faculty at the IIMs felt that they could have offered more management development programmes to industry and government from the region if the permanent campus infrastructure was in place. The HEIs in science and technology disciplines started with academic programmes that needed less laboratory space. One of the participants described his institute's efforts to start with programmes in Computer Science and Electrical Engineering as these disciplines did not require large laboratory spaces. He stated:

We started with Computer Science and Electrical Engineering as the kind of infrastructure that is required for these are not very heavy... We didn't want to start with Civil, Mechanical and Metallurgy, all of these required very heavy labs. We kind of thought that computer science would require computers only. And Electrical a little bit more than that. So, once we established that we thought now we can expand to other disciplines. (P32, IIT-SN)

Similarly, in order to develop a set of research projects, the faculty had to compete for the limited resources, not only amongst themselves but also with the teaching and administrative priorities of the HEIs, to be able to progress in their research agendas. Many of the faculty

recounted their struggle to establish their research laboratories due to limited space and funding in the initial years. This impacted the nature of research projects that the faculty were involved in in the initial years. Faculty members whose research did not rely on laboratory infrastructure could immediately get started with their research work as soon as they joined the institute. However, those whose research involved experimental work operated in makeshift arrangements until a proper laboratory was built, or they initiated new research projects that had less infrastructure requirements. In some cases, faculty members who could get external funding through grants could establish labs sooner than those who relied on funding from the institutes. A faculty member described how having external funding in the initial years helped him overcome the infrastructural limitations.

I have been fortunate in funding that before I joined the Institute, the director of my previous institute was very keen to continue the collaboration through a bilateral partner research programme, it has been a very significant source of third party funding ...we didn't have any basic facilities ... there was money available to set up facilities from scratch, the primary contribution came from the institute but it is supplemented about 50% or 75% through third-party funding. Subsequently also I was able to get grants from the national funding agencies. (P18, IISER-SN)

Although the new HEIs competed with the well-established ones to get the best students, they still remained highly sought after due to the strong legacy of the reputed well-established HEIs in the same disciplines and the huge demand for high quality higher education. Thus, given the absence of a fully developed campus, the new HEIs emphasised academic experiences, such as innovative curriculum and new pedagogies, rather than on campus experiences of their students. Such experiences were largely rooted in overall institutional identity and goals rather than considering students as customers (Temple, Callender, Grove, and Kersh, 2016). Such an approach in developing academic programmes and experiences of students, allowed for continuity in the development paths of the HEIs. A focus on student experiences as customers, as is often the case with teaching institutions, may have been pushed the HEIs in to a different emergent path at this stage.

Based on the above analysis, I have developed and depicted different possible evolutionary paths of the new HEIs in Figure 6.1 . For path-dependent institutions, the order of events makes a difference, and that when things happen within a sequence affects how they

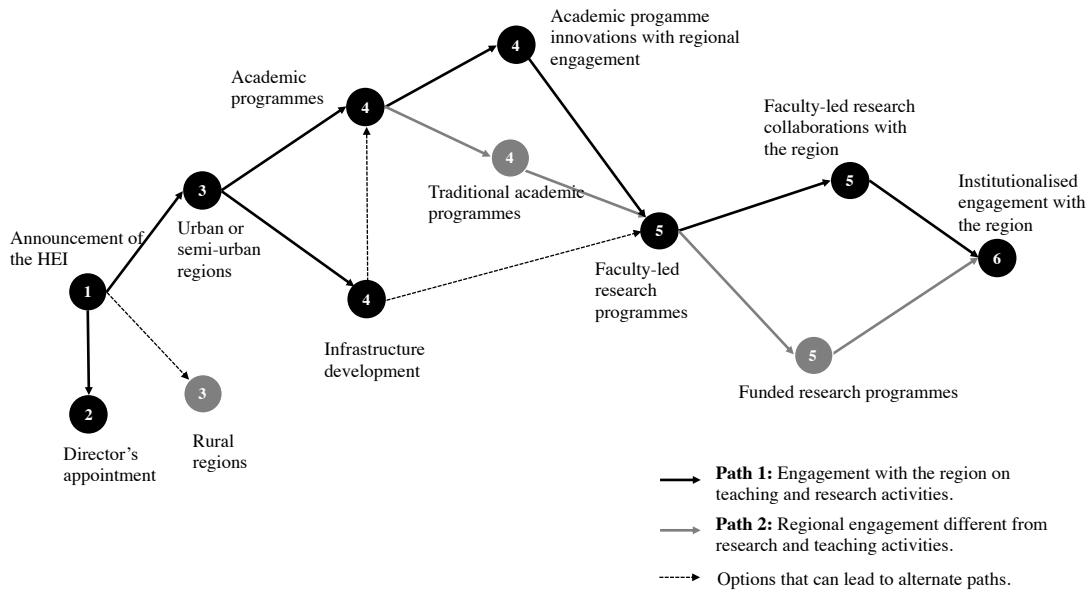


Figure 6.1: Development of the new HEIs through reactive sequences

happen. In case of the new HEIs, the first event was the announcement of the location of the HEI followed by the appointment of the Director, depicted in Figure 6.1 as step [1] and step [2], respectively. Subsequently, depending on the region they are situated in, each HEI started construction of the campus either in rural or peri-urban or urban regions, shown as step [3]. The analysis suggests that the location and the corresponding availability of the required infrastructure in the initial years shaped the start of various academic programmes (step [4] in Figure 3), in a specific sequence, and the faculty members recruited. Depending on the nature of the faculty members and available infrastructure, the new HEIs could either start innovative programmes that engage with the region or traditional programmes. This was followed by research efforts being started by the faculty members, shown as step [5]. Depending on the region and the status of the infrastructure, the faculty members engaged with the region or relied on grants or external funding for research programmes. Once a threshold faculty were hired, academic programmes and research projects were started, and the new HEIs initiated efforts to institutionalise regional engagement through establishment of dedicated structures (shown as step [6]). In this way, the location and the subsequent allocation of a temporary campus set off a reactive sequence for the HEIs where each event in a sequence was both a reaction to the past event and a cause of subsequent event. In such

cases, each event in the sequence has a cascading impact on the outcome; a small change in one of the early events can accumulate over time leading to large differences in the outcome. Much like path-dependent reactive sequences, the initial events about the availability and location of a temporary campus and the procedural aspects of developing a permanent campus set in motion the overall chain of reactions: the type of academic programmes and the type of research projects that faculty could start with. These early events and their order are important to integrate regional engagement activities in the evolutionary paths for the new HEIs.

6.3 Role of the Director and governance of the new HEIs

The new HEIs were established as per the governance norms specified in their 'statutes' approved by the government. The statutes established a Board of Governors (BoG) for each of the HEIs, the apex statutory decision-making entity. Each BoG comprised of representatives from Central and State Governments, industry, academia and faculty members from the HEI. Besides the ex-officio members, appointments to the BoG and of the Director of the new HEIs were made by the government. In addition to the composition of the BoG, the statutes specified institutional entities (e.g. Senate, Academic Council) and leadership positions (e.g. Dean(s), Registrar, Chief Administrative Officer) responsible for the management of the HEIs. Irrespective of the disciplinary differences among them, the above governance structure remained fairly the same for the new HEIs.

Except for depending on the government for funds, its deployment and utilisation, and for the appointment of the Director and members of the BoG, the new HEIs had reasonable autonomy from the government on academic and research matters. The BoG, which had external representatives, and was the highest decision-making entity of the HEIs, delegated most decision-making powers to the Director. Referring to seeking inputs from the BoG on developing a policy, one of the faculty members stated: "to be frank, nobody in the board understands any of these things". When asked about involvement of the BoG, a faculty member stated:

The board takes some interest but they generally let a free hand to the Director. I sometimes wish that they could be little more active. (P45, IIM-SO)

In fact, decisions [to interact with the region] will be taken from the Board. So, when the Board took a decision to form departments, the Director was there to make departments to facilitate teaching, etc. it should not come in the way of teachers. (P 22, IISER-SN)

Besides the BoG, the HEIs did not have any other entities or structures through which relevant external stakeholders (i.e. industry, local government, policy-makers) could participate in their policy or strategic decision making. Few participants mentioned about the involvement of industry and regional representatives and external academics in advisory and consultation roles in the development of programmes but did not involve in research or institutional agendas. Hence, with little interference from the government or the BoG, and no role for external stakeholders in decision making, the Directors of the new HEIs had significant influence in shaping the paths of the HEIs during the path-development phase by choosing between options and taking critical decisions. One of the faculty members stated that regional engagement was possible because of the Director's agenda but "it may so happen that the next director may come and say that no I don't emphasise so much on research, you do some research but focus more on teaching". Another participant described the critical role of the Director in building the institution as follows:

All said and done the Director is the most important person. Yes, there is a Chairman, there is a Board but whatever the Director wants, 90% he gets it. The Board normally does not come in the way. If at all the Board comes in the way and Director puts his foot down and says no I want it in this way, by and large the Board will agree. (P46, IIM-SO)

Similarly, in the review of IIT-UN, the external review panel examined foundational issues and attributed most of its success to the Director, as mentioned below:

The Review Panel is of the opinion that IIT-UN has been very fortunate in having such a founding leader. His openness to ideas, encouragement of innovation, valuing research, and fostering of curricular experimentation, not to mention his command of execution of all the myriad burdensome tasks involved in starting a new campus, are all remarkable.

The new HEIs faced challenges in recruiting senior and experienced faculty members in the initial years. Hence, a small group of senior faculty members, who had experience in

institutional development and administrative activities, served in administrative and management positions in the HEIs for a long time, spanning multiple tenures. These small group of faculty members not only served in key leadership roles as Dean(s)/Associate Dean(s), they were also part of several committees that deliberated and decided on important academic and research matters. One of the faculty stated: “At one point, I was serving on 19 out 20 committees” (P 42, IIM-SO). Hence, these small groups of senior faculty members were involved in all aspects of institutional developmental efforts including forming policies, launching of new academic programmes and planning and developing the permanent campus of the HEIs. Participants who held administrative or management roles (i.e. Dean of Research, Dean of Academics, Head of the Departments) in the new HEIs described their roles as largely service oriented to support the Director/Committees/BoG to make and implement the decisions or policies. When asked about planning, one Dean said: “Not necessarily, Dean alone, none of the Dean alone would make any plan. We can propose, if I think this is how we are going, say in recruitment or this thing, so often times my role is mainly in recruitment”. Hence, the management and leadership style was largely dependent on the Director, implemented and supported by a small group of senior faculty members, which represented the decision arenas and the dominant unit of implementation in the HEIs.

Factor	Collegium	Bureaucracy	Corporation	Enterprise
Policy definition	Loose	Loose	Tight	Tight
Control of implementation	Loose	Tight	Tight	Loose
Dominant unit	Department/ Individual	Faculty/ Committee	Institution/ Senior Management Team	Sub-unit/ Project Teams
Decision arenas	Informal groups and networks	Committees and administrative briefings	Working parties and Senior Management Team	Project Teams
Management and Leadership Style	Consensual and Participatory	Formal/ rational and representative	Political/ Tactical	Devolved and distributed leadership
Administrator Roles: Servant of . . .	The Community	The Committee	The Chief Executive	The Client and Stakeholders – Internal and External

Figure 6.2: Governance characteristics of four idealised university cultures, adapted from (McNay, 1995)

Considering the influential role of the Director in the initial years, the types of internal governance culture developed by the Director impacted the evolution of the new HEIs in path formation and development phase, and the adoption of regional engagement activities during these phases. McNay (1995) suggests four types of idealised university cultures-collegium, bureaucracy, corporation and enterprise-that have been widely used to explain the transformation of governance of universities in response to the changing nature of relationship with the external environment (Middlehurst, 2004; Shattock, 2013; Taylor, 1987). Collegium is associated with freedom from external controls and academic autonomy. Bureaucracy is linked to regulation, consistency of treatment, due process and standard operating procedures. Corporate culture is associated with power through executive authority with a separation of roles between managers and professionals. Finally, the enterprise culture has an emphasis on decision-making that is located close to the customer. All four cultures are likely to coexist in the new HEIs, but the balance between cultures will differ. See Figure 6.2 for an explanation of the characteristics for each of the cultures. Comments by faculty members indicate that IIT-RN and IISER-SN were marked by a collegium culture, whereas IIM-SN was marked by corporation culture. In the collegium and bureaucracy culture, regional engagement is likely to evolve through a consultative process, and thus be more institutional and time-consuming. In the corporation and enterprise culture, engaging with the region will be largely directed by the top management or the Director, and thus, likely to be person dependent and less sustainable.

The above analysis indicated that a small group of faculty members along with the Director, with fair amount of flexibility and autonomy, were involved in the emergence of a governance structure in the new HEIs and their evolutionary path. I find that had a different Director been appointed, the HEIs would have been on a different evolutionary path with different faculty members being hired, research environment being encouraged and infrastructure being completed at a different pace. Hence, early institutional events such as faculty hiring and the appointment of the Director laid the foundations of the HEIs which had a lasting effect on how these institutes evolved. Hence, an understanding of the motivations and goals of these faculty will further enhance the understanding about the evolution of the HEIs and the integration of regional engagement mission to their core activities.

6.4 A model for evolution of the new HEIs

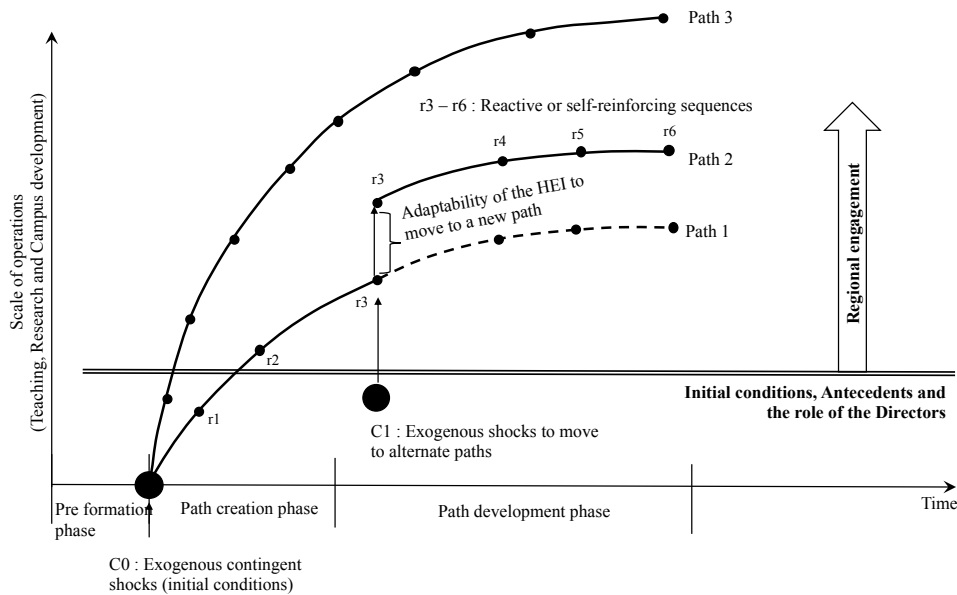


Figure 6.3: Depiction of evolutionary paths of new HEIs

Based on the findings, I enhance the reactive sequence of activities explained in Figure 3 to propose a model for evolution of the new HEIs (see Figure 4). In this model, different reactive sequences (shown as $r1$ to $r6$) combine to form different evolutionary paths (shown as Path 1, Path 2 and Path 3) of the HEIs. Such paths are triggered by a set of events or decisions (shown as $C0$) and may have varying degrees of integration with the region. Each of these paths may lead to a situation of lock-in, either with the region or otherwise. Once being on their respective evolutionary paths, contingent and exogenous shocks (shown as $C1$) can move the HEIs from one path ($P1$) on to another ($P2$). Hence, to analyse the path dependency of new HEIs, one of the key questions is whether there are sources for contingent and exogenous events (either $C0$ or $C1$) whose effects are hard to shake off and can set the HEIs in specific evolutionary paths. By being focussed on new HEIs that are less than twenty years old, this study gives a unique opportunity to answer the above question by going back to the initial years of establishment during interviews and being able to collect accurate description of events and decision points in history.

The analysis shows that the placement of the HEIs in their respective region can act as a source of contingent event for their path-dependent evolution. The Director of the HEIs

and a small group of faculty members have a significant role in shaping the governance or culture of the new HEIs impacting their regional engagement. Three antecedents-'historical relational networks', 'threshold resources' and 'strong institutional legacies'-influenced the tensions and challenges faced by the new HEIs to leverage the region for their development during the path-creation phase. The path-development phase of the HEIs was marked by a set of reactive sequence events wherein past events and decisions shaped their future actions. of the HEIs. Such an analysis would be far more difficult for well-established universities due to the difficulty in tracing back in time and also due to their complex inter-related structures that make it difficult to identify contingent events. Hence, the proposed model offers a fresh conceptual basis to explain the evolution of new universities with respect to their engagement with the region.

Chapter 7

Regional interface tensions

In this section, I explain the regional interface tensions encountered by the HEIs to leverage the region for their research and teaching activities. In their cross-case analysis across several universities, Pinheiro et al. (2012) finds three sets of tensions arising out of the need to balance competing interests: core and peripheral tasks; local versus global postures and aspirations; and internal versus external actors and their respective agendas (p. 51). However, the limited resources of the new HEIs and their reactive sequences indicate that the new HEIs focussed on their core research and teaching activities, and did not engage in peripheral tasks during the early path creation phase. Similarly, there were very little interaction with external actors in a mutually, systemic, and on-going manner. I find that such tensions faced by the new HEIs can be explained from two dimensions: the national aspirations of the new HEIs versus the regional capabilities, and the comparison and competition of the new HEIs with well-established ones. The ability of the new HEIs to resolve such tensions could determine their early choices and their nature of engagement with the region, which could either lead to development of the HEIs in path dependent or non-path dependent manner.

i. National aspirations, regional capabilities

All the new HEIs were established as institutes at the national level, and were funded by the Central Government. Their criteria for faculty recruitment and student enrolment were determined at the national level, without any consideration to representation from regions. All the new and well-established HEIs in the same disciplinary area admitted students through

Table 7.1: Faculty and student details at the new HEIs

Name of the HEI	No of students	% students from the state	No of PhD students	No of faculty
IIT-UN	1298	38.21	622	183
IIT-SN	1632	7.17	91	100
IIT-RN	562	4.09	99	106
SPA-SN	467	9.42	19	41
IISER-SN	771	7.52	454	94
IIM-SN	345	2.03	61	46
IIM-SO	1632	7.17	91	100

a unified common national-level admission test. For example, all the IIMs screened their applications based on scores of a national level test called the Common Admission Test (CAT) and all the IITs admitted students through national level test called the Joint Entrance Examination. Unlike universities established by the State Governments, the new HEIs were not required to reserve any percentage of their enrolments for students from the regions. Similarly, the new HEIs appointed faculty members at the national (and global) level without any consideration for representation from the region. A participant from IIM-SN explained this as:

None of these IIMs have anything to do with the local city or the local place, and the state. All the students come through merit. They come from different places. All the faculty is recruited from everywhere. ...All the recruiters come from all over the country. Someone asked me what percentage of your students are from the state. There were less than three students in that batch from the state. (P8, IIM-SN)

As a result of the above, potential participants (e.g., students, faculty, industry and academic collaborators) from the region in the new HEIs were required to compete at the national level. However, many of the new HEIs were established at rural and semi-urban regions, which did not have an enabling HE, economic, and professional working environment suited for engaging with a national level new HEI. As can be seen in Table 7.1, IIT-UN, located in the urban region, had the maximum number of students and faculty, amongst all the new HEIs. It also had one of the largest PhD programmes, even when compared to some of the well-established IITs. Being located in an urban region, the participation of student from within the state was also in a significantly higher proportion as compared to other

new HEIs. In contrast, IIT-RN had the least number of student and the least proportion of students from the state. Thus, the potential participants from the region were not able to meet the national-level quality norms of the new HEIs. From the perspective of the new HEIs, the regional resources were not as lucrative to them as those at the national level. A faculty member explained the tensions faced by him while forging academic collaboration with another academic institution in region, as below:

The faculty quality becomes an issue. The faculty at the local university are not up to the level What happens in such institutions in India is that they don't have proper faculty, and they are not maintained. In my personal view, the faculty are not so good. (P22, IISER-SN)

There were other similar comments by the participants, such as “State cannot contribute to the HEI because the institute is centrally funded”; “The students are more exposed to the entire country than specific regions”; and “So it [referring to one of the activities in the academic programme] is more of a PAN-IIM kind of an activity than focus more on the state”, that confirmed the implications of being established as national institute on their regional engagement.

In addition to such normative tensions in engaging with the region for research and teaching activities, the HEIs had to comply with national-level rules and procedures set by different departments of the Central Government for engaging with stakeholders such as vendors, service providers, consultants, and staff members. These rules and procedures were prohibitive for the regional stakeholders to participate in the development of the HEIs. In many instances, attempts to engage with the regional stakeholders while adhering to the national-level rules and procedures led to delays in the activities of the HEIs (e.g, the construction of the campus). A faculty member described the tensions faced while establishing the campus in the initial years as below:

We need to follow all the tendering process. .. when we approached the local people, they were not ready as mostly they were into informal businesses. They said you ask me to supply, I will supply but pay cash and we can't pay cash. We need to choose the vendor based on a certain national process. (P4, IIM-SN)

Members of the regional community expected to engage with the new HEIs for economic benefits such as through employment at the new HEIs in roles such as staff member or service

providers. Although in many cases the applicant pool for such roles had large representation from the region, since the HEIs followed the recruitment process stipulated by the government, they will still required to consider applications through a national-level application and screening process. This led to tensions between regional community and the HEIs. At IIT-UN and IIT-SN, these tensions escalated even to the level of conflicts with the surrounding community. A faculty member at IIT-UN stated:

We are not necessarily perceived as devils but certainly there are expectations from the locals. Now that there was sense of expectations; now that we are hosting this institution; we deserve the first ride. And that has been a little difficult. Because not that we are not in favour of employing the youth but their level of training is inadequate for us to absorb the minimum tasks that we could-in labs and other places.... But, the expectation has been there. Our mission is national. And when it comes to employment we have to have national perspective, it cannot be local. (P16, IIT-UN)

The above discussed tensions associated with regional expectations and national or global aspirations of universities are the core of several studies related to university-region relationships. Lebeau and Cochrane (2015) find that even in times when universities have national and global aspirations, local community engagement remains a significant element of their third mission, although shifted towards a non-committal stance, and impact being over a longer term, intangible and sometimes even negative. The above analysis suggests that the aspirations and procedures of being an institute of national cadre led to tensions in the participation of regional stakeholders in the development of the new HEIs.

Comparison and competition with peers

I have argued earlier that it was difficult for the new HEIs to rub off the institutional legacies of the well-established HEIs during their preformation phase of development. As the new HEIs moved to path development phases, their development was marked by a sense of competition among themselves and with the other well-established institutes of the same cadre. Launched in 2015, the National Institute Rankings Framework (NIRF) categorised the Central universities and the INIs separately from other state and private universities, signalling a competitive environment where the new HEIs were expected to compete with

the well-established ones from the same discipline (Ministry of HRD, 2010)¹. The following quotes from two participants shows the competing nature of the new HEIs with the well-established ones:

So, of course, IISc [another national level institute in science] is better with research, since they are a 100-year old. That's what they have been doing all these years But if you take undergraduate research and undergraduate teaching into consideration, IISc knows we are the best, we are far ahead of them in undergraduate teaching and research. (P25, IISER-SN)

The new IIMs are pushing all the faculty members into more and more research because the requirements from MHRD are changing, and also we have to get our name in the list of how much we are contributing to the society as well. So if you see different IIMs vis a vis the private colleges, the purpose of serving the society and the students remains little different. (P7, IIM-SN)

Several discussions in the media, and opinion pieces by experts further aggravated such comparisons, and encouraged competition between the new HEIs and the well-established ones. Hence, many of the decisions and initiatives of the new HEIs were motivated by their desire to maximise their (academic) prestige and to uphold their reputation (Van Vught, 2008). They harboured aspirations to grow substantially by carrying out large projects, obtaining huge grants, and scaling up their programmes to increase student enrollments. Some of the quotes from participants which reflected such aspirations are: "Today, we have 900 students, 104 faculty, 150 staff, 500 alumni, and over Rs. 40 crores of research projects"; "Typically in India ..state funding agencies are not very strong. When you pursue research you are interacting with the top of the world. ..you are competing with the people in the west, you want projects with good funding"; and "I think in this region there are no such industries for collaboration. Small manufacturers. They are not big industries."

In summary, comparisons and competition with the well-established HEIs, and the national and global aspirations were the main sources of tensions between the new HEIs and the regions. The concerns expressed by the faculty members of the new HEIs suggests

¹The NIRF is a methodology adopted by the Ministry of Human Resource Development, Government of India, to rank institutions of higher education in India. Launched in September 2015, there are separate rankings for different types of institutions depending on their areas of operation like universities and colleges, engineering institutions, management institutions, pharmacy institutions and architecture institutions.

that the rapid increase in expansion of the HEIs in India was not complemented with a commensurate increase in resources (e.g., research grants and capital infrastructure) allocated by the government. In such situations, the new HEIs were first and foremost each other's competitors (on the higher education labour market) seeking to hire the best possible faculty and to recruit the most qualified students. They competed amongst themselves and with the well-established HEIs for the best students, best faculty, the largest research contract, and the best infrastructure. Geiger (2004) argues that this competition for reputation is played out in two principle arenas, one for faculty scholarship and the other in enrolment of students. In order to attract faculty and promote scholarship, the HEIs sought the largest grants, increased staff expenditure, and created a continuous need for extra resources. Understandably, the semi-urban and urban regions, where the many of the new HEIs were located, did not have the potential to fulfil such needs at a scale that allowed them to gain competitive advantage over others.

Hunt et al. (2016) find that such competition in Australia has resulted in replication of the more established institutions, as institutions adopt the same change strategies as their rivals, aimed at enhancing or maintaining research levels and institutional prestige. Although in Australia, the main locus of competition is among institutions that cannot recruit sufficient students and who compete on the basis of efficiency and consumer focus, in case of the new HEIs this competition was more in achieving research excellence rather than on enhancing student experience. Lebeau (2008) analysed the local contradictions arising out of a similar transformation of HE system in sub-Saharan Africa in the early 1970s. Similar to the establishment of INIs in India as premiere institutes, sub-Saharan Africa also established universities as elite institutions to promote upward social and economic mobility but were transformed with massive expansion to become apparatus of economic development by the state. He finds that such transformation was marked with compromised academic freedom and politicisation of important academic and administrative positions, the universities were faced with the need to balance teaching with quality inherited from the highly elitist higher education systems and the necessity to widen access to higher education.

The above regional interface tensions, coupled with the antecedents described earlier, determined the nature of the evolutionary paths of the new HEIs. The new HEIs, which did

not have adequate threshold resources, did not have a Director who emphasised regional engagement, and did not integrate it with their research and teaching programmes, were not regionally path dependent but were evolutionary in a way that did not have anything to do with the region they were located in. My analysis above suggests that IIM-SN and IIT-SN were closest to this description. In the subsequent section, I analyse the further evolution of these HEIs to become path dependent.

Chapter 8

Equilibrium versus dynamic evolution of the new HEIs

In the previous chapters, I have shown that the path creation phases of the new HEIs are characterised by reactive sequencing of their research and teaching activities, and are influenced by the Director and three antecedents that shape their engagement with the region. As the new HEIs evolve in to their path development phase, they can get into either of two paths (Martin and Sunley, 2006). The path that moves them to a stable state is characterised by the canonical path dependent model where there is reinforcement of disciplinary preferences, research and academic programmes along with rigidification of associated structures and networks. In this model, there is increasing formalisation of incentive structures and clarity about the identity, aspirations and purpose of the new HEIs. The path that moves them to a dynamic state is emphasised by the evolving path dependent model. This path is more open than the canonical model, and allows for endogenous change and evolution leading to a development trajectory of the HEIs that is dependent on the history, and yet is also evolving.

Pinheiro et al. (2012) suggest that regional interface tensions are followed by a process of strategic alignment between different dimensions of universities and regions to institutionalise regional mission. In this section, I find and analyse six factors—four that validate the theoretical framework adopted in this thesis, and two additional ones—influence the HEIs' engagement with the region. A key question that I investigate is how these factors

Table 8.1: Features of HEIs for path-dependent adaptive evolution

Feature	Explanation
Indigenous creation	Emergence of new disciplinary areas, capabilities or structures from within the HEIs that have no immediate predecessors or antecedents, enables creation of new paths from within.
Heterogeneity and diversity	Diversity of disciplinary interests, research and teaching orientation, structures and policies promotes constant innovations within the HEIs and reconfiguration, avoiding lock-in to a fixed structure with the region.
Invasion or transplantation	Access to new sources of funding or capabilities or collaboration opportunities from elsewhere forms the basis of new pathway for engaging with the region.
Diversification into related area	Transition into new path by redeploying core technologies to new areas of research or programmes to provide the basis of new areas of engagement with the region.

Table 8.2: Features of HEIs for path-dependent lock-in systems

Feature	Explanation
Learning effects	Learning about regional engagement becomes increasingly more attractive for the HEIs because of accumulated skills and expertise, making it even more difficult for them to switch.
Complementary effects	Synergies between regional engagement activities and actors with the priorities and other networks of the HEIs enhance the likelihood of creation of sustainable networks with regional stakeholders.
Adaptive expectation effects	The more people get rewarded for regional engagement activities, the more faculty members would get involved.
Coordination effects	Increasing coordination with the region develops specific routines and rules which many are willing to conform to. It becomes increasingly easier for actors to comply with such existing rules than create new ones.

enable or constrain the development of the features of the paths of the HEIs towards being canonical or evolving path dependent. Based on the review of the works of several authors (Garud et al., 2010; Martin and Sunley, 2006; Sydow et al., 2009), I list four features each that are associated with the breaking of a particular system paths to make it adaptive (Table 8.1) and with creating self-reinforcing effects and institutional lock-in (Table 8.2). Using these features, I analyse the enablers or constraints to make the paths of the new HEIs either canonical or evolving path dependent.

8.1 Enablers or constraints for regional engagement of new HEIs

Based on studies on regional engagement of universities in several countries, including Brazil, Chile, England, Finland, Poland, and Moldova, Pinheiro et al. (2012) suggest four factors: (i) normative and cultural-cognitive dimensions, (ii) strategic objectives and aspirations, (iii) primary activities, and (iv) resources and incentive structures that enable or constrain institutionalisation of regional engagement of universities. Calling for further research into these factors, they argue that “scholars should shed light on the black-box characterising the sets of tensions, dilemmas and complexities associated with the universities” (p. 252). Thus, I analysed the data collected to come up with sub-themes or explanations for each of the four enablers or constraints, as applicable to the new HEIs in India.

i. Performance measures, rewards and recognition systems

The new HEIs adopted similar evaluation and promotion criteria for their faculty members as those adopted by the well-established ones. These criteria emphasised standard modes of contributions to teaching and research, e.g., graduating PhD students, grants received, laboratory/course development, patents and publications in academic journals. Evaluation for promotions of faculty members was done by an external committee of academics. Many participants mentioned that although activities like external or industry collaboration, consulting, contributions to institute development were part of their evaluation criteria, the standard modes of contributions to research and teaching mattered the most. Some faculty members even stated that research publications are the only thing that mattered during promotions. In none of the new HEIs, regional engagement efforts were an explicit evaluation criterion for faculty members.

Despite the lack of inclusion of regional engagement efforts in the formal evaluation criteria of the faculty members, there was recognition of such efforts in evaluation committees and in other formal or informal forums. However, the participants expressed concern that, eventually, such efforts did not matter during evaluation or promotion. One participant described his preferences for working with the region as:

I am aware that there are other sources in the region that I can get funding from

but have never tried to get funding from there. Partially because the expectation is different, institutional expectations are different and to meet that you would rather avoid going for a delayed process something which is faster, something which can be more result oriented is generally more attractive for faculty. (P1, IIM SN)

Having formal or informal mechanisms to incentivise and reward efforts aimed at leveraging regional engagement opportunities creates adaptive expectation effects (See Table 8.1 for an explanation) in the HEIs; the more people get rewarded for regional engagement, the more faculty member get involved (Sydow et al., 2009). In IIT-RN, not only was regional engagement actively encouraged by the Director, such efforts were also recognised in mediums such as annual reports, media reports, websites, and other informal forums. Describing how contribution to development of the region is emphasised in the evaluation of faculty members, a participant from IIT-RN stated:

It started with our Director's vision; our institute has started with this vision but our external experts who are coming to this IIT are senior professors and academicians ... their concern can be different. But, our Director is able to convince the selection committee experts also that this is what we are looking for. (P59, IIT-RN)

At IIT-RN, the Director himself came with a background and interest in working with in a similar rural region. Much like the informal diffusion of best practices in organisations (Sydow et al., 2009), adopting regional engagement practices helped the faculty members end up on the side of the Director or other senior faculty members, who also championed regional engagement activities. Considering that regional engagement efforts were not explicitly included in the evaluation criteria and were recognised and rewarded by the Director in informal forums, the faculty members at IIT-RN were uncertain about the benefits of engaging with the region, and thus felt motivated if others, including the Director, are likely to prefer the same.

However, due to the absence of an institutional agenda at the other HEIs to leverage the region, and due to comparatively higher sense of academic autonomy enjoyed by the faculty members in INIs in India, the faculty members in other HEIs were not influenced by what others were doing, but instead wanted to do what they preferred, which may or may

not include working with the region. In such cases, working with the region was largely an individual choice and did not receive any notable formal or informal institutional or peer recognition. These were reflected in comments: “I do it on my own...whatever research topic that I find interesting”; “Like I said I don’t care so much”. In such HEIs, unlike IIT-RN, informal rewards and recognition of regional engagement promoted heterogeneity and diversity in practices that allows for constant innovations, leading the HEIs to a path of adaptive evolution.

ii. Access to alternate resources and region as a pilot

HEIs are expected to commit dedicated indigenous resources for their successful engagement with the region, which was lacking in the new HEIs¹. Beyond the minimal seed funding available to faculty members in the new HEIs, faculty members were expected to generate their own resources (i.e. funding, lab equipment, data) for research and establishment of labs. In many cases participants emphasised the importance of access to alternate resources such as funding agencies and data as essential requirements for the new HEIs to successfully engage with the regional stakeholders. One faculty member described his experience of working with industries in the region because of his access to funding from an external source. He stated:

Actually we have a project called the Newton Baba project funded by Royal Academy of Engineering which mainly focusses on research. The main focus of that project was work with industries. Whatever technology we are developing has to be for the industry. It was in collaboration with Cambridge University and 3 to 4 industries, so almost one and half year is over. So we are giving the technical support to industries around. (P 29, IIT-SN)

Similarly, in many instances, the new HEIs leveraged the region for smaller pilot projects which they could later scale up at the national and global levels with access to additional resources from external agencies. Such pilots were particularly helpful to the HEIs for research

¹The funding available from the Central Government to the new HEIs was allocated on a project mode wherein funds were allotted to categories of expenses including construction of campus, building of teaching labs, seed funding for research, and other operational expenses. The HEIs did not have flexibility to reallocate these funds to other areas, including regional engagement activities.

activities as demonstrating a working pilot that helped them apply for and obtain larger grants. One of the participants described this as follows:

I presented the idea [of a research project] to the Department of Science and Technology. They accepted but asked to first demonstrate [a pilot]. So I had to develop a proof-of-concept. So I need to have connections with engineering team outside a public roles departments. ...We moved around the region, we talked to the people ...it was important factor for us at least for few days. So I contacted them and they showed there interest. (P 15, IIT-UN)

Working on such projects with the regional stakeholders had complementary effects (See Table 2 on Page 2 for definition) for the HEIs where regional engagement opportunity complemented resources from other sources from outside the region. While such complementary projects were common at IIT-UN, IIT-RN and IISER-SN, IIT-RN was the only institutes of such cadre in its region and had a supportive state government. As a result, it forged partnerships with multiple regional stakeholders, leading to the establishment of strong network of partners in the region. Prior studies indicate that single large scale universities in a peripheral region like IIT-RN engage with the region better than multiple large universities in core regions (Boucher et al., 2003). IIT-RN also shared its lab equipment with educational institutions from the region. As such complementarity becomes stronger, IIT-RN will slowly build networks, relationships and processes, where their distinct advantages will become progressively more dominant leading the HEIs to a state of lock-in with this network.

In contrast, for other new HEIs in this study, access to research grants from national and international agencies was not always combined with projects in the region. While even these HEIs had started initiatives with the region where such complementarities existed, they were largely dependent on funds and resources from national and global funding agencies and partnership organisations that did not need a regional partner. At IIM-SO, a major student initiative started in partnership with the state and local government was scaled up with the involvement of third complementary partner at the national level. However, faculty members described this initiative as a curriculum innovation rather than illustration of their strong partnerships with the region. Hence, in these HEIs, collaboration with the region added to diversity research and teaching orientation that promotes constant innovations within the HEIs and reconfiguration, avoiding lock-in to a fixed structure with the region. In these

HEIs, leveraging such regional engagement opportunities built heterogeneity within the HEIs moving them to evolving path dependency.

iii. Regional expertise and disciplinary interests

All the new HEIs selected were situated in regions with unique geographic attributes or, with industry clusters. IIM-SO and IIT-SN are located in cities in close proximity to an automobile manufacturing cluster; IIT-UN is situated in a region known for pharmaceutical and software industry; and IIT-RN in an mountain region. The participants often alluded to these unique attributes and expertise of the region, while referring to the engagement of HEIs with the region. For many participants, the region was defined less by its geographic boundaries but more by the extent to which these attributes, and the corresponding expertise, prevailed. In such a context, having the relevant disciplinary interests among its faculty members that were aligned with the regional expertise was important for the HEIs to leverage the region for their development. However, situated within their academic areas, the disciplinary interests of the faculty members were often narrowly defined. Thus, the faculty members often had to go beyond their immediate interests to align with the regional expertise. This is reflected in the below comment by a participant:

First you can say, our area of research needs to align, that's number one. ... Once I got a mail, then I apologised that I am really not into that thing, that's the reason. I don't want to move out of an area too frequently because that will not give you the depth. That's the main reason. So, I focus primarily on Supply Chain and Management. I am sticking to those areas. (P5, IIM-SN)

Similarly, SPA-SN was able to leverage the region in its academic programmes since the discipline of architecture and planning requires closer integration of research and teaching activities with practice. Its faculty members were involved with the state and regional governments in advisory and/or consulting capacity on several projects. Many participants emphasised the focus of SPA-SN on both planning and architecture to be one of its key strengths as compared to institutions that focussed only on architecture. One of the participants described this below:

It was good, in the middle of the city, specially in architecture students get to see the city, they get to be part of the city. It's very important especially for

architecture students to experience, perhaps the most important aspect, you have see the architectural association in the middle of the city. I feel that experience is extremely crucial and this location has a huge data. (P52, SPA-SN)

Engaging with regions on such cognitive aspects enhances learning effects by enabling faculty to acquire more diverse experiences about their disciplines, and to learn from practices in adjacent fields, which may lead to diversity within the HEIs in the long run. Such learning effects lead to lock-in that is predominantly cognitive or normative. However, it was often difficult for the HEIs to find a close alignment with the region on such cognitive dimensions.

Engaging with the region was one of the many avenues for the HEIs to engage with their discipline. Funded research projects, consulting projects and teaching in programmes were not restricted to the region alone. For instance, at IIT-RN, the visit and involvement of a faculty led to the starting of a large and sustained initiative with a large corporation located in a nearby region. Similarly, there were cases in other HEIs wherein the hiring of one faculty eventually led to starting a stream of initiatives in a given disciplinary area. In such cases, regional engagement led to invasion or transplantation leading to the importation of new organisational forms, technologies and institutional arrangements from outside of the HEIs. Regional engagement opportunities that are deeply aligned with the disciplinary areas may provide access to new sources of funding or capabilities or collaboration opportunities from elsewhere, which may be the basis for new pathway for engaging with the region. This suggests that while disciplinary alignment did not lead to lock-in situation, it could act as a source of evolving path dependency for the HEIs.

iv. Government enablement

The development of the HEIs during their path development phases required co-ordination between the respective State Governments and the Central Government. Basic resources, such as land, water, and electricity, needed by the HEIs were provided by the respective State Governments in which they were located. A document by the MHRD highlighted the role of the Government as (Ministry of HRD, 2018):

Based on the approval, the respective State Governments were requested to provide approximately 500-600 acres of land for establishing the new IITs. ...The

respective State Governments were requested to provide land free of cost for the purpose. (p. 24)

IIM-SO, IIT-SN, IIT-UN and SPA-SN worked on several consulting projects from the state and local governments, which were largely possible because of being established as a government institute. Comments by the participants indicated that the government considered these HEIs as one of their own (Lall and House, 2005), and thus, turned to them whenever there was need for advisory, consulting or training. This is not to imply that the HEIs had to always accede to such requests. Two of the participants described this situation:

Since we are an IIM within the state of [...], its government feels obligated to ask us first before going to somebody else. If we say no, they go elsewhere. It's not like they are not bound by it, they just do it. That's the general accepted practice. (P8, IIM-SO)

In many instances, the faculty spoke about the ease of engaging with the regional and local governments since they were also part of the government establishment. One of the faculty stated: "They don't have many objections on us because they know that we would not be part of any kind of corruption; because they know we won't give anything [as additional favours]. Because we are also government organisation" (P54, SPN-SN).

The enablement by the government provides an opportunity to the HEIs to redeploy their core technologies to adjacent areas of application within the government. Since the HEIs are also government organisations, it is easier for government organisations to follow a set of routines and procedures, leading to coordination with the state governments and development of specific rules and routines. Such routines can push the HEIs to get locked-in to their development paths with the region. However, as the HEIs grow older, they also have potential to attract grants and consulting projects from non-governmental sources, and thus, may not be as dependent on government sources for resources or for their research and teaching activities. In fact one of the participants in the well-established HEIs stated, "Most of the support is needed in the early phases. Now, we don't need much from the state government. Generally we would like to be in their good books and that's it" (P44, IIM-SO).

v. Internal and external policies

There were multiple policies, either by the HEIs themselves or initiated by the government, that nudged the HEIs to take greater interest in engaging with the region for their research and teaching activities. Encouraged by the Startup India policy by the Central Government ², the HEIs worked with regional stakeholder (e.g., investors, industries, and mentors) to encourage enterprise development in the region. A faculty described it as follows:

Many times because of the government push, for example, government is pushing hard for incubation centres to the government organisation like us... Government organisation like us, whenever there is a push from above, then whoever is the Director at that time will also pass it on. Then something will get started. (P42, IIM-SO)

Similarly, several participants in the IITs referred to another scheme, called the IMPRINT ³, by the government encouraging the HEIs to work jointly with industries on research projects that has practical implications. As part of this scheme, the government provided a larger portion of the funding, and the remaining was expected to come from the industries. The Uttachar Aviskar Yojana scheme was another example where the faculty of the HEIs were involved in training children from primary and secondary schools from the region. Besides the above described external policies, the participants also highlighted the importance of adopting internal policies to encourage participation in regional engagement activities. A faculty member gave the following example where the lack of an internal policy prevented him from inviting experts from the region to give guest lectures in classrooms:

Access to [this region] is a problem but not to the set of people from the region, because here some of the policies are not ideal. We are not rewarding them in a better way. That's one problem. ... it did not permit us to bring any industry people. He [The Director] used to say this is IIM, they have to come on their own, so who will come, on their own, paying flight money and all. (P4, IIM-SN)

The role of internal and external policies that facilitate regional engagement can be explained through forced invasion or transplantation of new structures or arrangements

²As part of the Startup India Policy The Department of Science and Technology provided funding to several universities and HEIs in India to establish incubation centres to promote and work with startups.

³IMPacting Research INnovation and Technology (IMPRINT) was a multi-stakeholder mission programme aimed at bridging the gap between scientific knowledge base created through fundamental and applied research and fruitful translation of the same through engineering invention and technological innovation for the betterment of society.

from outside or inside. This refers to the importation of new organisational forms, technologies and institutional arrangements from outside of the HEIs. Adoption of such policies was highlighted by several participants as the main motivation to start regional engagement activities. These initiatives by the government provided funds, and thus, helped create dedicated structures and pathways to facilitate engagement with the region. The Startup India Policy provided funds to the HEIs to start their own incubation centres. Although the incubation centres were established as independent legal entity, universities functioned as a host institution that provided faculty/mentoring support, infrastructure support and other operational support needed. Faculty members were often involved in the incubation centres to mentor/advise startups. However, the participants were unsure about the sustainability of these initiatives. One of the faculty member felt that "interest in entrepreneurship obviously that is there for a long time but unfortunately nothing much has been happening at the institute level". This suggests that the HEIs participated in these as mere signalling to comply to the government policies.

vi. Regional embeddedness

Regional embeddedness of the HEIs refers to their engagement with the region without being concerned about immediate and direct benefits (Lebeau and Cochrane, 2015). It developed by their "institutional and individual positions in the local policy and business networks, and by the multiple ways in which the actions of the HEIs and their agents are influenced by their location" (p. 259). I find that the activities that promoted such embeddedness of the new HEIs were exploratory, and helped in communication, and establishment of relationship and trust between the HEIs and the region. Considering that the faculty members in the HEIs were all from outside the region, regional embeddedness helped the HEIs develop long-term relationship with regional stakeholders, which they could subsequently leverage for benefit of their research and teaching missions. For instance, the faculty members at the IIMs authored case studies on local industries, and developed and delivered customised training programmes to them at discounted pricing. Many participants were hopeful of leveraging these relationships later for their research and teaching activities. Similarly, faculty members in the IITs worked in an advisory or consulting capacity with industries and government

agencies.

Regional embeddedness can help in adaptive path-dependent evolution of the new HEIs by creating diversification within the HEIs in to related areas, and redeploying their expertise for the benefit of the region. It can help the new HEIs build up on their core technologies in research, and transition from traditional research and teaching activities to other forms of knowledge generation and public engagement activities. A participant gave the following example:

One person from a large corporation has contacted me... I went there for a full-day lecture. Next again after few months I got a call. They wanted me to verify some product that they developed. So they came here and I had discussion with them for two hours. Then again they called me for a lecture.” (P14, IIT-UN)

In this case, the participant lent his expertise to this industry even though it was not part of his core research and teaching activities, and did not immediately lead to a research project. Similarly, another participant described the intangible benefits of being connected with the region as: “everything cannot be measured in terms of money. You are expert, so they are recognising your expertise” (P35, IIT-SN).

Lebeau and Cochrane (2015) suggest that such regional embeddedness is useful to explain the patterns of engagement between universities and region that go beyond the usual economic development agendas that universities are expected to contribute. For instance, they find that the participation of the faculty members in the governance aspects of the region, by being members of the board, ensures that the HEI does not miss out on important decision and events regionally. Hence, through regional embeddedness, faculty members learn about adjacent areas of expertise which may be subdominant in the HEIs. Regional embeddedness can enhance coordination and complementary effects of the new HEIs. The more the HEIs engage with such organisations, the more complementarities they will discover with each other and develop processes and routines of engagement, eventually leading to a lock-in situation.

8.2 Conclusions

I have validated the theoretical framework adopted in this study for new HEIs in India, and have also been able to enhance the theoretical framework by suggesting additional enablers and constraints presented in the proposed theoretical framework. The analysis of each of the themes discussed above enrich the theoretical framework and provide the basis for validating these for well-established universities as well. Lastly, this thesis recommends new themes—government enablement, internal and external policies, and regional embeddedness—as enablers or constraints that are specific to new universities. Of these, the theme 'government enablement' is exogenous in nature and pertains to the specific HE context in India and may not be applicable in a wider context, which includes state and private universities as well. The other theme—regional embeddedness—may be validated for well-established universities as well. Since the HEIs are only about a decade old, it's difficult to find enough evidence about how these enablers could influence their canonical or evolutionary path-dependent trajectory.

Chapter 9

Openness of the new HEIs to engage with the region

In the previous chapter, I used the theoretical framework of path dependency to show that the new HEIs developed through a process of *evolution* that is distinct from the process of *transformation*. Such evolutionary paths of institutions are coupled with the goals, identities, and behavioural patterns of individuals involved with them (Schelkle, 2000), which could partly be explained by relevant institutions, culture, and so on. These, in turn, would be partly explained in terms of other individuals. Hodgson (2002) calls this the problem of “Infinite institutional regress” implying that developing an evolutionary approach, in which the emphasis is on the ongoing process of change, involves an understanding of the institution and individuals simultaneously. Similarly, Strambach (2008) suggests that the individuals and their collective learning processes shape the evolution of their associated institutions by impacting the support and restriction of their various types of innovation and future learning. Hence, in order to explain the evolution of the new HEIs, it is also important to understand who are the individuals involved, and how do they influence and participate in the development of these HEIs, and what are their goals, motivations, and beliefs. Thus, in this chapter, I investigate these questions within the context of exploring the factors that determine the openness of the new HEIs to engage with the regions—one of the objectives of this thesis.

9.1 Motivations of faculty members in the new HEIs

Comments by the participants indicated that a small group of faculty members worked in a flexible, entrepreneurial, and autonomous environment, with loosely defined structures and policies, in the path creation and development phases of the new HEIs. In such a situation, in addition to the institutional agenda and mechanisms, the goals and motivations of faculty members of the HEIs were also pertinent for leveraging the region for their research and teaching activities. Notwithstanding the institutional environment of the HEIs, their faculty members continued to engage with the region in a manner that was aligned with their research and teaching interests, and sometimes even with their public engagement interests. For example, a faculty member at IISER-SN worked with the schools in the region to promote a novel pedagogy for science education; similarly, another faculty member at IIT-SN worked with the startups to apply his research to seek solutions to the problems of the region. Comments by participants, such as “There is some problem with me. I want to work alone. That is not good but everybody has his own choice, right?” (P14, IIT-UN) and “It’s an important question but like I said, I don’t care so much” (P8, IIM-SN), suggest that such engagements by the faculty members were largely motivated by their own intrinsic motivations to engage with the region. One of the participants stated that although the leadership can formulate policies and mandates, it cannot enforce them on the faculty members. In many other instances, the participants cited academic norms of autonomy, freedom, and flexibility to suggest that the faculty members’ engagement with the region were driven by their own goals and motivations. One of the participants stated:

The Director can introduce some new things; some programme; that’s all. The drive of the faculty member, and how forcefully she/he will implement those thoughts, will have to come from the individual faculty member. Once the people have got inspired to contribute in that particular domain, whether this Director is there, or the new Director is there, or whoever is there, it will always be successful. (P59, IIT-RN)

Researchers have used Motivational Systems Theory to explain faculty motivations and beliefs for engaging with the community (O’Meara, 2008) and in public scholarship ¹

¹Public scholarship is scholarly activity generating new knowledge through academic reflection on issues of community engagement. It integrates research, teaching, and service. It does not assume that useful knowledge

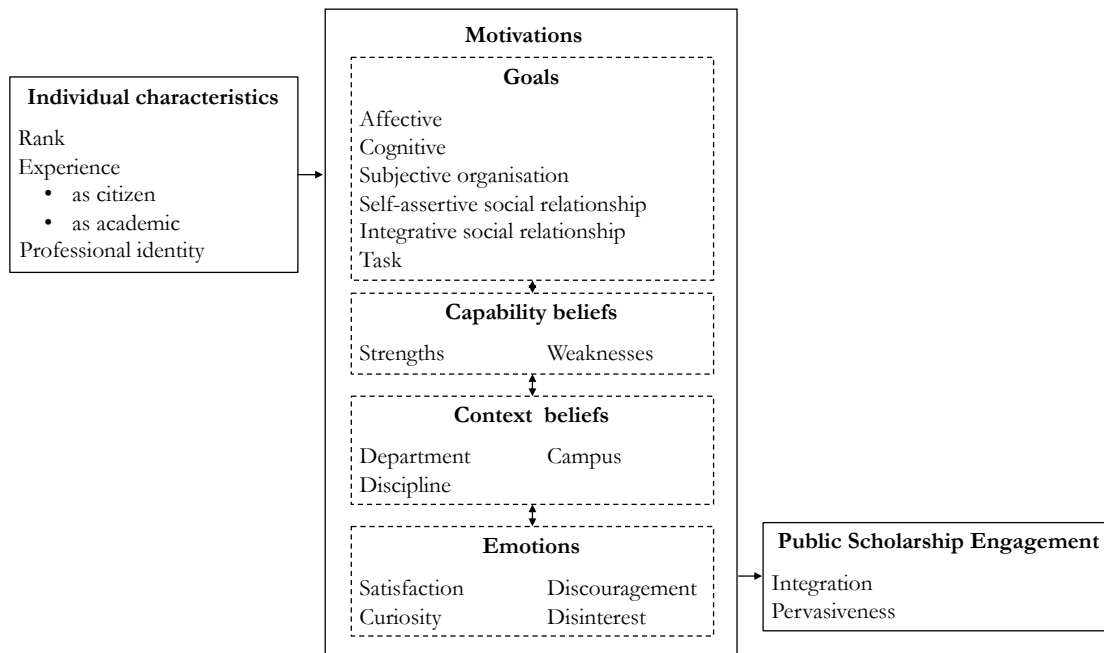


Figure 9.1: Faculty motivations and beliefs for public engagement, adapted from (Colbeck and Weaver, 2008, p. 10)

(Colbeck and Weaver, 2008). As per the conceptual framework by Ford (1992) shown in Figure 9.1, the extrinsic and intrinsic motivations of faculty members help explain their behaviour through their goals, beliefs about their capabilities, called “capability beliefs”, and beliefs about the supportiveness of their contexts, called “context beliefs”. Extrinsic motivations of faculty members focus on the environment and conditions under which work is done. They include reward systems, working conditions, structures, and policies. Intrinsic motivations pertain to the nature of faculty work itself, including how the work is done and how it affects the faculty member, the range of activities involved, the degree to which she/he performs the activity, the autonomy in doing the work, and the responsibility involved. Faculty members can also be motivated to engage with the region for learning, and for challenging themselves, as scholars and teachers. Based on analysis of the data, I explain below three goals of faculty members of the HEIs, and investigate their influences on path dependent evolution of the HEIs.

simply flows outward from the university to the larger community. It recognises that new knowledge is created in its application in the field, and therefore benefits the teaching and research mission of the university.

i. Developing an institute of national cadre

The faculty members of the new HEIs, who joined in the initial few years, were deeply involved in several aspects of developing the institute, such as campus development, policy framing, and programme design, in addition to their research and teaching activities. For all of them, this was their first experience of being involved in developing a new INI—a cadre of institute that has the highest reputation and prestige in the Indian HE system. The faculty members expressed a sense of responsibility, pride, and excitement on being involved in developing such an institute from scratch. Describing their motivations to join the new HEIs, few of the participants stated: “founding an institute on the lines of IIT”; and “stop criticising [about the state of HE in India] and start doing something if you really bother about it”. One of the Directors described his motivation as:

But when this idea came to the mind of the government that this is going to be a national institute on the lines of IIT and NIT, I found that working in an IIT in a Department of Architecture is one thing, but founding an institute solely devoted to the branches of architecture and planning is a great opportunity. (P53, SPA-SN)

Enthused by the opportunity to develop an institute of national cadre, the faculty members nurtured an entrepreneurial and flexible approach, which they felt would be harder to find in well-established universities. Two participants described their experiences as follows:

You have much more flexibility to introduce changes in the curriculum or in the academic programmes. When the system gets older, the rigidity and the baggage increases. This, I would say that is the best opportunity. (P68, IIT-RN)

The other thing was the flexibility in terms of academic syllabus and updating the course curriculum. Every month, people used to give feedback about the courses, and then constantly we kept developing them by discussing with the Academic Council. As a result of the flexibility, lot of things were norms, not rules. (P37, IIT-SN)

Although the HEIs were established as part of an elite system of well-established INIs, the rapid growth in their numbers of the INIs—from nearly ten in 1995 to over 100 in 2016—indicates their transition to a mass systems of HE. Such systems tend to be more

diversified than elite ones, as they absorb a more heterogeneous clientele and attempt to respond to a wider range of demands from the labour market (Brennan et al., 2004; Marginson, 2016). With increase in the number of students and faculty members, the HEIs aimed to create a niche to differentiate themselves from the well-established INIs. As a result, the faculty members in the HEIs were keen to experiment and innovate in institution development, and their research and teaching activities. IIT-UN had taken a new approach to design their curriculum involving continuous evaluation of students, and giving more choices to students outside their core area of study; IIT-RN and IIM-SO incorporated practicum components with their surrounding regions into their academic curriculums; and IIT-SN had designed unique residential facilities for its students. Similarly, the faculty members designed customised and innovative programmes (e.g., part-time Doctoral and Masters-level programmes for industry participants from the region, Doctoral programme for faculty members from nearby colleges, and short-duration programmes for industries and governments from the region) for the regional stakeholders to cater to their diverse needs. Hence, related to the goals of the faculty members to develop an institute of national cadre, were their goals to differentiate the HEIs from the well-established ones by experimenting and innovating in their approaches and activities.

Engaging with the region in a diverse, flexible, and innovative manner allows faculty members to work on areas that are adjacent to their area of expertise, and in a manner that goes beyond the traditional norms of teaching and research. This created opportunities for the faculty members to engage with a wide array of regional stakeholders resulting in heterogeneity among faculty members and their networks. Many faculty members described about how a training programme or a short-term engagement with a regional stakeholder subsequently led to larger and wider opportunities involving multiple faculty members from the HEIs. These engagements with the region allowed the faculty members to learn from practices and solutions followed in adjacent fields than their research areas. The learning by the faculty members and the heterogeneity in their networks can lead to subdominant organisational forms and practices, which can be a source of adaptation for the HEIs (Martin and Sunley, 2006). Benneworth et al. (2009) terms such engagements as exploitative approaches that have immediate economic or market-related benefits for the HEIs. With increase in

number of faculty and regional engagement activities, such approaches to engage with the region would gain legitimacy within the institutional framework, and lead to changes in the values of the faculty members or their subjective beliefs, and potentially move the HEIs on to an alternate path of development (Mahoney, 2000).

ii. Social responsibility

In many cases, the intrinsic motivations of faculty members to engage with the region were driven by their needs to fulfil their social responsibility goals. These goals were tied to their notion of working at a *publicly-funded* HEI or of being teachers. Several faculty members had joined the HEIs either from another university of the State Government or from a university outside India. Except for the Directors, who often joined from another INI, most of the faculty members had not worked in an INI before. Hence, many faculty members felt privileged to be working in an INI, and thus felt obligated to give back to the region rather than being drawn entirely in to scholarly work. The following quotes from the participants describe their associated goals of social responsibility: “In a very humble way, we started giving something [to the region] because when we exist, we have to give something back”; and “This is a drive which is coming from inside. So if you are here and if you are convinced that we have to contribute to society, then this drive is sufficient enough to work on without any incentive”. In explaining similar motivations of scientists, Bozeman and Sarewitz (2011) suggest that social responsibility goals for them arises from the recognition that the scientists worked in institutions that are themselves in pursuit of broad public-interest goals. They find that financial, reputation, and career rewards may not be sufficient to explain the motivations of scientists to demonstrate public values, and to engage in socially relevant projects. Similarly, faculty members in the new HEIs identified themselves as teachers in a public-funded institution that motivated them to give back and engage with the region. A faculty member explained,

So, is there clarity? No! Is this rewarded? No!... It is a personal pursuit also. The personal pursuit in fact is not merely a personal pursuit, it is one borne out of the responsible choice, ethical choice. It is given to what you see as teachers. As faculty members we have a highly privileged position in society and amongst thought leaders. (P57, SPA-SN)

Faculty members with such social responsibility goals are more likely to engage in public scholarship than those with strong self-assertive social relationship goals such as superiority and resource acquisition (Colbeck and Wharton-Michael, 2006). In his study on academics in the UK, Watermeyer (2015) found that faculty members who were committed to engage in public scholarship roles compromised their research identities, reputation, and careers, since such roles were not backed by institutional interests and rewards. Instead, as the above comments indicate, such motivations are intrinsic in nature, and faculty members are driven by emotional satisfaction, grounded in personal commitments to social justice or specific social issues including commitments to the environment, public healthcare, public education, and urban planning (Boyte et al., 2004). Even at the new HEIs, faculty member's motivations to fulfil their social responsibility goals were coupled with their expertise, and were channeled through mechanisms such as advising government on projects, conducting capability development programmes for faculty members or, outreach to schools and other local colleges. However, since these engagements were not fully integrated with the research and teaching activities, they helped the faculty members develop loosely-coupled networks with different regional stakeholders instead of tightly coupled networks that are developed by engaging with the region for exploitation opportunities. These loosely coupled-networks between relatively autonomous actors (i.e., faculty members) are more adaptable than networks with strong ties as they allow localised adaptation, more innovations, a greater availability of slack resources and a higher learning capacity. These adaptable networks can help faculty members in the new HEIs discover and learn from adjacent practices, discover hidden interests, and thus, act as a source of new paths in their path dependent evolution, in which faculty members may have alternate repertoires but these may have been forgotten or hidden because of lack of use.

iii. Disciplinary excellence

The participants, most of whom were early career researchers, described their goals to first and foremost establish themselves as researchers in their corresponding disciplinary area. As they spoke about their research, there was a sense of pride and accomplishment for achieving goals such as publishing in reputed academic journals or presenting at international

conferences. Comments such as “given a special prize by Elsevier” and “within 18 months from starting, the first paper was published” indicate that the faculty members’ aspirations were ultimately to be recognised amongst their community of peers in their disciplinary areas. While such motivations are common among early career researchers transitioning to independent researchers (Laudel and Gläser, 2008), they were more pronounced among faculty members in the new HEIs due to added institutional aspirations of quickly gaining reputation as a leading research institution.

Additionally, for many participants working in the HEIs in science and technology disciplines (e.g., IISER-SN, IIT-SN, and IIT-UN), setting up their own research laboratories was a key milestone of being an independent researcher. They felt that joining a new institute with a small group of faculty members would provide greater opportunities to achieve the above compared to well-established institutes, where they would be one among many established faculty members. Few participants described their considerations for joining the new HEIs as: “Whether I will be able to set up something of my own, whether there will be adequate support from the government and the institute, and whether I will be able to set up my own lab”; and “The faculty who interviewed me were so open about it [setting up a lab]. They said that if I need any kind of help, they could help me establish my lab”. Such disciplinary goals were however different for the faculty members at SPA-SN in the area of planning and architecture, where research projects were largely consultative in nature, and involved working in the field with the practitioner community. Some comments by the participants from SPA-SN that indicated their goals of disciplinary excellence were: “We got a very prestigious consultancy for the very prestigious Taj Mahal”; “Yes, the State Government has given me two projects... this region is famous for its weaving and it has its global presence. Since I work in the traditional architecture and I have experience in that area, and thus, the government has given me this project”.

As faculty members work towards achieving disciplinary excellence, they become more specialised in their niche areas. Being on paths of achieving disciplinary excellence, faculty members develop cognitive and self-assertive social relationship goals such as superiority and resource acquisition, goals that are not likely to motivate them to engage with the region (Colbeck and Weaver, 2008). With increasing specialisation, they can get locked into

their disciplinary networks and develop their own paths of disciplinary excellence. In such cases, their learning effects and specialised fixed costs become the sources of self-reinforcement (Arthur, 1994). Hence, they find it difficult to exit and escape from such paths, and get locked into alternate paths that engage with the region. In such cases, the openness of the faculty members to engage with the region for their disciplinary goals—linked to their associated disciplinary context (Vogelgesang et al., 2010; O’Meara, 2008; Colbeck and Wharton-Michael, 2006)—can act as a source of unlocking for the HEIs moving them away from their existing paths through inward transplantation of knowledge in areas of relevance to the region. I discuss below the role of the disciplinary context in shaping the openness of the faculty members to engage with the region.

9.2 Role of disciplinary context

Multidisciplinary universities encounter complexities in regional engagement due to multiple internal sub-systems, weakly interdependent units, and weak mutual effects (Pineiro et al., 2012; Weick, 1976). New HEIs that are focussed on a single discipline, such as those included in this study, do not encounter such complexities, and thus provide a unique setting for analysing how the disciplinary context of the faculty members leads to variability in their openness to engage with the region. I find that such variability can be described on three dimensions related to the disciplines—(i) epistemology of the disciplines, (ii) resource needs of the associated faculty members, and (iii) nature of the disciplinary networks—as explained below.

i. Epistemology of the disciplines

Technology can be classified as a hard discipline that has a single paradigm allowing researchers to agree on concepts, research methodologies, and research questions (Biglan, 1973; Schommer-Aikins et al., 2003). Thus, the faculty members in this discipline could achieve their disciplinary goals even with research studies that were conducted in the context of the region. In addition, due to the applied nature of technology discipline, many faculty members in the IITs were enthused by the opportunities to apply their research to solve real-world problems of the region. They felt that the region provided a fertile ground for fresh

research ideas, and could help to develop pilots for larger research projects. For instance, the unique challenges pertaining to the region of IIT-RN had prompted several of its faculty members to think about novel research questions. Thus, I find that the faculty members in the technology discipline were able to value the long-term potential (e.g., to generate research ideas and seek larger grants) of engaging with the region, and took a different epistemological stance to leverage the same to fulfil their disciplinary goals. Similarly, for faculty members in the planning and architecture discipline, their research and teaching activities were closely linked to field work due to the practice-oriented nature of the discipline. Hence, faculty members in SPA-SN linked their disciplinary excellence goals with that of practice-based engagement with the region, and were positively inclined to engage with the region. This is reflected in the following comment of a participant:

The [name of the city] in SPA-SN is significant because you know here is an area which is incredibly rich, it's rich in natural resources, it's rich in culture, it's incredibly rich in many ways, not so rich in economic ways. (P57, SPA-SN)

On the other hand, management, being a soft discipline, lacks a common paradigm, and researchers often argue over methodology and key concepts (Schommer-Aikins et al., 2003). The participants from the IIMs mentioned several barriers for engaging with the region for research activities such as the lack of sufficient and valid data from the region for conducting research due to the small size of the industries or individual businesses, and normative concerns that the regional stakeholders did not understand or appreciate the value of research. This indicates that the faculty members in the IIMs were concerned about the generalisability and validity of research studies done with the region, and thus were less optimistic about the potential for leveraging the region to fulfil their disciplinary goals. However, researchers in management education have argued that research in management helps in fundamental understanding of issues through theory development as well as can be considered as being applied (Kieser and Leiner, 2009; Tushman et al., 2007). Given such applied nature of management discipline and those of technology and architecture, and planning disciplines, faculty members in these disciplines were able to include practice-based learning as a pedagogy in their course curriculums, although the specific mechanisms for regional engagement varied across disciplinary areas. For instance, IIM-SN had an elective for students to work in rural areas around the region; and IIT-RN had a course where

students applied their classroom learning to solve challenges faced by the regional community. However, the faculty members in the science discipline at IISER-SN were largely concerned with theory development and experimental studies, and thus, were comparatively less engaged with the region to fulfil their disciplinary goals.

ii. Resource needs of the associated faculty members

The new HEIs were dependent on the region for providing various resources (i.e., funds, human capital, and infrastructure support) needed for their campus development, and for their research and teaching activities. The nature of such resources varied according to their disciplinary areas. In the HEIs that were based on science and technology disciplines (i.e. the IITs and the IISER), the government provided the required funds for establishing teaching laboratories to be used by the students, but very limited funds for the faculty members to initiate research activities. Hence, the faculty members needed additional resources to initiate their research activities in the new HEIs. Such lack of adequate resources during the preformation phase of the new HEIs resulted in sequential activities leading to path-dependent evolution. Although in many cases the region could not provide these resources directly, the faculty members could leverage the region for field work, development of pilot projects, and testing their experiments in real-world situations. Such support from the region was helpful to the faculty members to solicit larger research grants and scale up their research activities.

The HEIs in the management discipline (i.e., IIMs) had fewer infrastructure requirements for their research activities than those in the technology and science discipline. Thus, faculty members in the IIMs could initiate research projects soon after joining the new HEIs. However, the challenges of leveraging the region for research in management had more to do with the lack of normative alignment with the regional stakeholders than the region's capabilities to provide resources to support such research, as was the case in technology and science disciplines.

iii. The nature of the disciplines and research communities in India

I have discussed earlier that the historical relational network of the Directors and the faculty members was an important factor to shape the development of the HEIs. Besides

such institutional benefits, research collaborations with their peer networks helped the faculty members meet their disciplinary goals. In order to institutionalise their engagement with the region, IIM-SO had created Special Interest Groups—a community of faculty members with similar interests. However, only one such group could sustain due to lack of availability of appropriate faculty members to organise and lead these groups. Describing the reasons for it, a participant mentioned:

We need academic entrepreneurs; somebody who takes up something and says, you know, I really want to make this happen, I am interested in this, let me get people together, let me get some funding, let me organise some workshops. (P44, IIM-SO)

Although I did not specifically discuss about the nature and importance of their peer network with the faculty members, several similar comments by the participants indicated the importance of having a community of researchers for the faculty members to leverage the region for their disciplinary goals.

There is a widespread network of researchers in science and technology discipline in India due to the presence of several well-established IITs, other research-intensive science and technology based HEIs and government-funded research labs. The organisation of such networks and of the knowledge from these institutions in an academic area, and the ability of the new HEIs to leverage their institutional strengths to align themselves towards the same will shape the development of that academic area in the new HEIs. For instance, few participants, who worked as scientists in the government-funded research labs prior to joining IISER-SN, expressed their motivations to pursue teaching careers or, for reputational aspects of an institute of national importance. Although even HEIs in management and planning, and architecture disciplines have been around for long periods in India, graduates from these disciplines often seek professional opportunities instead of pursuing a career in research. These have led to the lack of equally well-established researcher networks and have hindered the growth of these disciplines as indigenous ones from India. These variations in the peer networks of the faculty members influenced their openness to leverage the region for their research and teaching activities.

9.3 Role of external context and capability beliefs

The Motivational Systems Theory (O'Meara, 2008) suggests that the above explains goals of faculty members need to be complemented with adequate context and capability beliefs for them to engage with the region. Context beliefs are evaluations of how one's environment will support her/his goal attainment. For the faculty members in the new HEIs, they indicate the extent to which faculty members believe that their internal (i.e., their departments or the institute) and external (i.e., government, industry, region, and academic peers) contexts support the accomplishment of their goals. These beliefs are shaped by perceptions of availability of resources, and of social support and rewards. While I acknowledge that this study was conducted from the perspectives of the HEIs and the interviews were conducted so, in several instances, the participants described the perceptions, opinions, and attitudes of the regional stakeholders towards the HEIs as they engaged with the HEIs for their research and teaching activities. Besides the individually driven efforts, the institutional measures to communicate and facilitate interactions with the region also shaped the context and capability beliefs of the faculty members. The analysis of the data suggests that these beliefs can broadly be described under four themes— aspirational, proactive, supportive, and resourcefulness—as explained below.

i. New HEIs as aspirational entities for the region

Comments by the participants indicate that the regional stakeholders' attitudes to engage with the HEIs were driven by their sense of pride associated with having an institute of national stature in the region. They felt that associating with the HEIs was aspirational for the regional stakeholder because of the high stature of the INIs in India or their perceptions of high quality of education in the new HEIs. For instance, IIM-SN engaged with the regional stakeholders to offer several management development programmes. One of the participants described the aspirational nature of the regional stakeholders as below:

I think the state government is very supportive at every level, ...whenever individual faculties going for individual things to a senior officer, high up in the government, that's I personally feel they are two step further to help them. I personally don't feel any such problem here. Always IIM faculty is being respected and heard.... (P3, IIM-SN)

There were other comments too: “IITs have a brand and we always have respect from the people”; “They [the regional stakeholders] actually have a lot of value for the people from IIM. ... just having an IIM on board will not only bring intellectually credibility but it will also build brand name”. Faculty members who held such beliefs about the region were more open and likely to engage with the region than others.

The faculty members in the IIMs were less optimistic about engaging with the region. The perceptions of the regional stakeholders about the HEIs as an aspirational entity was shaped by the availability of and access to other management institutions at the national and global levels. The new IIMs were not only compared to their well-established peer institutions, but they were also facing competition from several global business schools that operated in India to engage with industry through executive education programmes or research/consulting projects. As a result, the participants of the new IIMs felt that they were not as aspirational for the regional stakeholders as compared to the well-established IIMs or other business schools in India. Faculty members described their difficulties in engaging with the region as: “If I want to do research or a case study, it’s very difficult to enter in to. They will not share their data. But if you are Harvard, they will share the information. That’s shocking”; “First of all, we are not established IIM. If this kind of programme is done by other well-established and reputed IIMs, same programme if they are charging a higher amount, they are ready to go because name has been established. So we are in the growth stage”. However, they could engage with small SMEs for whom the new IIMs were still very aspirational. Being aspirational for the region helped the new HEIs to attract students or participants for various academic or training programmes. This is akin to the notion of engagement suggested by Lebeau and Bennion (2014) wherein they find that the opinion of the partners of the universities influences their embeddedness with the region and their ability to develop cohesive ties with regional stakeholders. The above analysis suggests that the perception of regional stakeholders that the HEIs are aspirational helps in developing the context belief of the faculty members of the HEIs, and influences their openness to engage with the region.

ii. Proactiveness of the region and the HEIs

The second aspect of about the region that influenced the faculty members' openness to engage with it was the proactiveness of the region. The faculty members in the new HEIs had very little time to focus on regional engagement activities due to their emphasis on administrative responsibilities, initiating research projects, and launching academic programmes. They often de-prioritised regional engagement activities over their research and teaching objectives. In such situations, proactiveness from the region enhanced the context belief of the faculty members, and helped them initiate regional engagement activities. In many cases, the participants put the onus on the regional stakeholders to proactively reach out to them. They stated; "It is also a two-way process, the industry should proactively involve themselves with IIM. Government should also proactively utilise the existing assets inside the IIMs"; "They are not so pro-active in going to the academics work, usually the tendency has been like when you have a problem look for the expert, look for some solution and get on with that"; "As I told you before the onus is not on SPA-SN to ensure that it is the part of regional development. It is up to the region also to help SPA-SN.... they should not expect us to approach them for projects. We will still do it, but they have to come here, we will work full night and we will do it". The participants cited many instances where regional engagement activities could progress because of such proactiveness of the regional stakeholders. IIM-SO had a programme for its students to go to the rural areas for projects done as part of their curriculum. The programme was later scaled up due to the proactiveness of the region. One participant described this:

Now for past two years the state government thought that it's a huge resource, about 600 plus people. ... So they thought that let us have some concrete plan because we are putting our resources, resources in terms of money as well. So, they thought when they are putting this kind of resources in place, so let us have something concrete in hand so that we can get some mileage out of it and perhaps it is the only IIM which does it. (P47, IIM-SO)

The activities of the new HEIs were largely confined to their campus, often situated on the peripheral regions of the cities. Except for IISER-SN, many of the HEIs did not even have a proper road connecting the campus to the city, making it challenging to access to local transport. In fact, as I travelled to these institutes from the railway stations or airports,

in many instances, people did not even know that such an institute existed in the region. As a result, access to the new HEIs and participation in their activities was challenging for the regional stakeholders. Thus, the faculty members in the new HEIs needed to invest additional efforts to proactively communicate with the region to inform and educate them about their activities, before opportunities of regional engagement could be explored. One of the participants stated:

We have still not reached the masses. We have still not made them understand what we do, why we are here. That clarity is needed but those who have known us, they take pride in what we do and slowly and there is interest even in remote areas. (P1, IIM-SN)

Communicating with the region through outreach platforms helps HEIs to gradually explore and expand opportunities of regional engagement. However, the HEIs were resource-constrained to organise activities and create mechanisms to communicate specifically with the regional stakeholders. In many cases, what ever communication mediums existed were largely informed by the desire to establish their brand and showcase their activities to the regional stakeholders rather than to leverage the region for their research and teaching activities.

iii. Supportive community

Despite being an institute funded by the Central Government, the new HEIs were dependent on the region for several resources related to their infrastructure and operations. However, they were not being seen as directly beneficial to the region. In such circumstances, having a supportive community made the faculty members more open to engaging with the region. In case of IIM-SN, the State Government had provide a temporary campus in one of its colleges. In other cases, the State Government was not as supportive. For a few HEIs, the State Government was unable to provide legally clean land, which delayed the construction significantly. In some cases, the dynamics between the new HEIs and the local communities were an important aspect. One of the respondents stated:

Now also it's a challenge for the institute to have amicable equation with locals here because whenever the land is taken away from local population to fund something which is from the centre, they don't see a direct benefit in that. ... The kind of compensation they would have expected, they would not have got;

they might have been given false promises that jobs would come up. (P32, IIT-SN)

In many cases participants described their positive experiences of engaging with the region while developing the campus in the initial years. These positive experiences of by the faculty members of a supportive community in the region, enhances their openness to subsequently leverage the region for their research and teaching activities as well.

iv. Regional resources

The initial funding allocated to the new HEIs by the government was primarily for developing the campus and teaching infrastructure. Only a portion of those funds could be used to support faculty research projects. Hence, the faculty members were motivated to engage with the region to acquire resources towards their research goals by gaining access to data or funding. The more the faculty members believed in the region's ability to provide such resources, the more open they were to engage with the region. Benneworth et al. (2009) call such engagement as part of the "knowledge exploitation' subsystems, in which the HEIs work with co-located/proximate regional stakeholder, within similar or related sectors with localised network relations and regional interdependencies. Such interactions are termed exploitative due to the direct and tangible nature of benefits accrued to both the HEIs and the region. The region's focus on research and development activities was considered an important criterion for many faculty members to engage with them. One of the faculty members commented:

There are the nearly 2000 pharmaceutical companies and these are huge production units. ...Unfortunately, they do not have any R and D off this place. But we have to start working with them even if plant scale or some minuscule problem... to gain their confidence and then there may be too many other projects. (P 68, IIT-RN)

In addition to regional resources, faculty members had access to resources at the national level through government grants, collaboration with industry, or participation in government projects through consulting. Faculty members preferred funding from government sources since they provided greater flexibility to carry out scholarly research as compared to funds from regional sources that were more restrictive in nature. While faculty members

can leverage the region for additional revenue through contract research or consulting, it is not likely that such funds can also be deployed for scholarly purposes (Conway et al., 2009; Johnstone, 2004). Regional engagements often have cultural, economic or social benefits to the region, and thus, are either highly restrictive or correspond to the purchase of a special service. However, regional engagement directed towards restrictive activities often fail to account for all the indirect costs, potentially creating distortions in operations of the universities and high transaction costs, which the new HEIs may not be equipped to absorb (Noll and Rogerson, 1997). Thus, faculty members who had access to alternate and more flexible sources of funding and resources were less open to engage with the region. In many cases, such faculty members indicated their low expectations from the region. A faculty member from IIT-RN explained these beliefs:

They [the regional stakeholders] are blessed with natural resources. They are blessed with enough money, with sustainable environment, if I could say that ...so they have everything. ...They do work according to their pace and their priorities...so it kind of initially difficult to deal with... eventually we were able to manage. (P61, IIT-RN).

Another faculty member at IISER-SN suggested that the regional stakeholders did not expect much from the region besides participating in the lectures or visiting the campus because they could not relate much to their activities. He stated,

The people are happy because if they ask something, they are getting the response. For the simple reason, that you have to get some level to appreciate someone. Teachers certainly do, college teachers. People who have visited us also do.... We have openly, anyone can walk in. We have occasional public lecturers which are open to everyone. And if a school or college says we want to come, we are open here. (P20, IISER-SN)

Holland and Gelmon (1998) argue that universities conveniently structure partnerships with only those that are sophisticated and have the capacity to engage with them, which mature over time to long-lasting partnerships. The above analysis suggests that once the faculty members found adequate resources for their research activities through public-funding sources, they are likely to be less open to leveraging regional engagement opportunities. The low expectations of faculty members from the region lowered the openness of the faculty to leverage regional engagement from the benefit of the HEI.

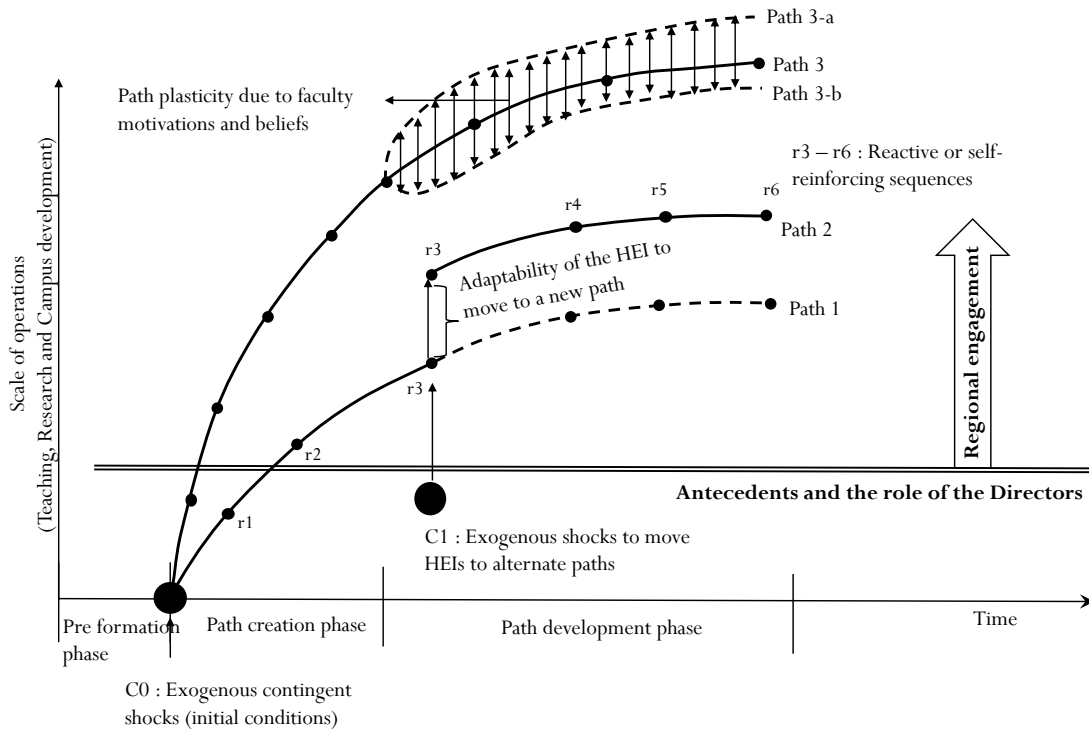


Figure 9.2: Proposed model of evolutionary paths of the new HEIs with path plasticity

9.4 Conclusions

The above analysis suggests that the goals, motivations and beliefs of individual faculty members shaped their openness to leverage the region for their research and teaching activities. The goals of the faculty members—developing an institute of national cadre, disciplinary excellence, and social responsibility—built heterogeneity in their openness to leverage the region. The above goals, and corresponding capability and context beliefs in the region, influence the path-dependent nature of the HEIs. While institutionally the HEIs followed evolutionary paths at the macro levels, the individual goals and their context beliefs allows for small variations at the micro level, creating plasticity in the evolutionary paths of the new HEIs. Such plasticity shapes the openness of the faculty members to leverage the region. I found that the plasticity can be shaped by three factors related to the discipline: (i) the epistemology of the disciplines, (ii) the resource needs of the faculty members of various disciplines, and (iii) the nature of disciplinary networks. In addition, the faculty members' belief in the regional context in which the HEI was situated also shaped the degree

of plasticity around their development paths.

Based on the above findings and analysis, I have revised the earlier conceptual model of evolutionary paths (shown in Figure 6.3), and the proposed revised model is depicted in Figure 9.2. The dotted paths around Path 3 (marked as Path 3-a or Path 3-b) represent two alternate possibilities for the core evolutionary path, Path 1. The extent of deviation of either of these paths (represented by arrows in the space between Path 3-a and Path 3-b) is influenced by the faculty goals and their beliefs. The higher the resources of the HEIs for engaging with the region (represented by an arrow on the right), greater is the variability and possibility of these innovations being integrated with the region around core evolutionary paths. Depending on their goals, the disciplinary context and the external context, the faculty members will discover and learn from adjacent academic areas, that may not be central to their research and teaching activities. This will help them build loosely coupled networks between different regional actors. Although such loosely coupled networks may not be sources of contingent shocks for the HEIs to move them to alternate paths from their current evolutionary paths, they allow for plasticity within well-established institutional setting of evolutionary paths (Strambach, 2008).

Chapter 10

Main contributions and discussions

Research studies in HE aim to inform and advance the practice and policy of it while also contributing to the development of new theories pertaining to education and/or improvements of theories imported from other disciplines. In addition, being one of the largest in the world, there is a need for more indigenous research studies on Indian HE system to make HE an independent field of study in India and establish links with global HE scholarship community (Varghese, 2018). I discuss below the main contributions of this thesis to the field of HE and related fields of study and to the practice and policy making of HE.

10.1 Contributions to the field HE and related fields of study

This thesis is broadly situated within the field of study of “institutional management” that is concerned with the development of HE theories on topics related to university transformation, institutional innovation and regional relationships and impact or, with the application of management theories, such as change management, managerialism and leadership, to HE (Tight, 2012). It makes a distinct contribution to the above by its application of path dependency theory to explain the development of new HEIs and their engagement with the region. Be it transformation for adopting regional mission or internationalisation or achieving strategic goals, existing transformation theories assume an initial state of universities and an order set of steps for their development. Unlike these, path dependency employs an evolutionary approach, characterised by a broad scope of action, adaptation and envi-

ronmental characteristics for the development of new HEIs from scratch. Although path dependency has been used in many fields of study (e.g., regional development, economics and management), I could find only one article by Feeney and Hogan (2017) that apply it to examine policy formulation and its implications on universities in the EU.

Using path dependency theory, I find that the placement of new HEIs in their respective regions can act as exogenous contingent event making their evolution path dependent and potentially creating a situation that the HEIs will find hard to come out of. Due to scant resources in the initial years, the new HEIs prioritised their teaching activities over research resulting in reactive sequences that reinforced their path-dependent nature. The antecedents of the HEIs and the regional interface tension faced by them influenced their consideration to engage with the region in their evolutionary paths. These findings, although limited to single disciplinary HEIs, are relevant to HE contexts beyond India and enhance the understanding of how new universities develop and leverage the region.

10.1.1 Revised theoretical framework

The theoretical framework for regional engagement adopted in this thesis assumes an initial state of a university, in which it is not fully engaged with the region. It proposes a series of ordered and interrelated steps for the university to engage with the region and gradually transform to a state where regional engagement is institutionalised within the university. However, the findings indicate that a new HEI need a degree of maturity or readiness to leverage the region. The maturity can be indicated by its strategic orientation, availability of resources and/or stability of academic and research programmes, all of which are parts of its evolution. Based on the above implications, I have revised the theoretical framework about institutionalisation of regional engagement suggested by Pinheiro et al. (2012) by contextualising it to new HEIs in India.

The proposed revised framework, shown Figure 10.1, offers a fresh typology to explain the evolution of new HEIs with respect to their engagement with the region. It suggests three outcomes for new HEIs: non-path dependent, which has been discussed in the literature so far, canonical path dependent and evolutionary path dependent. First, a set of antecedents, contingent events and factors related to the new HEIs can make the evolution of new HEIs

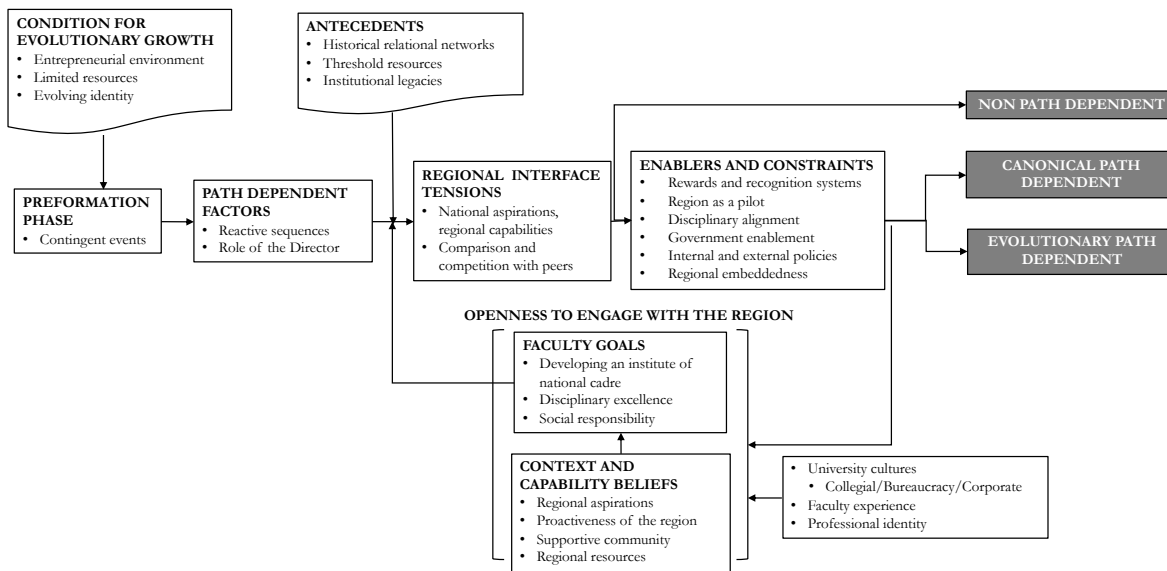


Figure 10.1: Revised theoretical framework for regional engagement of new HEIs

path dependent or non-path dependent. The antecedents influence the tensions faced by the new HEIs as they begin their regional engagement in the path formation and development phases of their evolution. Subsequently, the motivations of the faculty members, explained by their goals and beliefs about the regions, influence their openness to engage with it. Such openness continuously gets reshaped as the HEIs engage more with the region, which in turn influences the regional interface tensions faced by the HEIs. Thus, the motivation of the faculty members is shown as a feedback loop in the revised theoretical framework. Eventually, as the new HEIs increase leveraging the region in their path development phase, the enablers and constraints faced by them can create situations that are self-reinforcing to make their evolution canonical or evolutionary path dependent.

Several HE researchers have used developed various conceptual models to explain the transformation of universities to respond to changes and demands from the outside, including from the region. Mohrman et al. (2008) has proposed the Emerging Global Model to explain the transformation of research universities to respond to globalisation. Clark (1998) has identified five institutional elements for transforming a university into an entrepreneurial university. Be it transformation for adopting regional mission or internationalisation or achieving strategic goals, many of these studies are based on well-established universities and assume a reasonably well-defined initial and final state of the universities. In this way, the

revised theoretical framework explained above is a distinct approach to new HEIs since it allows for continuous adaptation of the evolutionary paths of HEIs and combines individual motivations of faculty member with institutional elements.

10.2 Contributions to the practice and policy making of HE

10.2.1 The management of regional engagement in new HEIs

The new HEIs in this study developed with loosely defined structures and in flexible environments resembling those of entrepreneurial universities (Altbach et al., 2018). Operating in different regional contexts, they had developed to be very different from each other. Appendix 2 provides an analysis of the similarities and differences in the development of these HEIs. The analysis indicates that new universities will need to manage their regional engagement activities depending on the influence of regional context on their core research and teaching activities. Such management of regional engagement activities refers to the kind of resources, structures and leadership needed for effectively leveraging the region.

In case of those HEIs in this thesis where regional engagement was not integrated with the core academic activities and engagement with the region were structured in convenient and opportunistic areas (termed as region-influenced universities in Appendix 2), regional engagement was managed through a developmental periphery around their core academic activities. Such a developmental periphery can include faculty members and managerial staff with an enterprising mindset, and dedicated resources, structures and leadership to anchor and steer regional engagement in ways that are aligned with its academic ideals. In such cases, developing intermediary entities, instead of hierarchical administrative structures, can be better suited to manage and steer regional engagement (Allison and Eversole, 2008). However, the capacity for new universities to absorb the risks and benefits of such practices may reach its limit if they encounter difficulty in motivating existing faculty members or hiring new ones to engage with the region, without which a limited set of faculty members can get caught up in regional engagement and managerial activities (i.e., policy making, campus development and administration) compromising their research productivity. Referring to similar practices in national universities in Africa, Wangenge-Ouma and Fongwa

(2012) and Cloete et al. (2011) argue that the practice of managing regional engagement at the periphery leads to unwarranted tensions within faculty members and thus, weakening of universities core academic activities and their engagement with the region.

The above practices for managing regional engagement is less suited for new universities that can integrate regional context with their core academic norms and activities. In such cases, individual faculty members become champions of the regional context and thus, separate institutional structures and steering of regional engagement activities is not as useful as above. As was seen in the new HEIs in this study, the varied goals of faculty members—developing an institute of national cadre, achieving disciplinary excellence, and social responsibility—shape their openness to engage with the region. Like minded faculty members in new universities with similar goals and motivations can come together to develop strong research groups that can manage regional engagement in specific niche areas. Whitley (2007) suggests that in such cases universities may resemble project-based organizations that provide common facilities and services for a wide variety of research groups and teams operating quite independent of each other. Such services can include institutional efforts, such as conducting events, managing funding, publishing newsletters, reporting and outreach, to signal institutional commitment to build long-lasting relationships with the region. Not having to develop separate structures and allocate dedicated resources as was discussed above, such management of regional engagement activities may enable new HEIs to establish relationships with the region sooner in their evolutionary paths compared to other types of HEIs.

10.2.2 The role of institutional leadership in the HEIs

A common feature in the development of all the new HEIs was that the Director had significant influence over their evolutionary paths and regional engagement. Rarely in the HE system does a single individual have so much influence as is the case of new universities. In summarising the role of the leader in starting new universities, Morozov & Shchedrovitskiy (2018) suggest that “he or she should inspire the start-up phase with energy, attract an outstanding team of academics and develop a meritocratic culture of academic excellence while strategically guiding the institution through the typically turbulent start-up phase” (p. 187). Additionally, as was the case in all the HEIs in this study, the leaders of new

universities need to be proactive to reach out the appropriate regional stakeholders at the top level and be able to remove the hurdles for individual faculty members or the institution to leverage the region.

In cases of the new HEIs where regional engagement remains at the periphery, the leadership need to focus on cultivating a culture that balances the academic norms and practices with public engagement and enterprising mindsets. Not being able to tamper with the nationalised norms of faculty incentives prescribed by the government, the Directors of the new HEIs introduced formal and informal rewards and recognition systems to keep faculty members motivated and involved in regional engagement and managerial activities. In contrast to the above, the leadership need to have a different role in the region-integrated new HEIs where regional context gets integrated with the core activities of the HEIs. In such cases, the different goals of individual faculty members build heterogeneity and diversity in their approach to engage with and leverage the region. Thus, the leadership of such HEIs need to focus on creating a unified vision and role of the HEI that includes the region and emphasises academic ideals with a strong regional context.

Such differences in the role of the leadership of a new university can get overshadowed by the grandeur promise and excitement of developing a world-class institute, leading to mismatched expectations of the leaders and misplaced institutional identities. It is important for the government to consider such factors during the recruitment of the leadership team. It was thus not surprising that by the time of this study, many new HEIs in India did not have a full-time Director. Considering the extensive emphasis in developing infrastructure, launching programmes and maintaining relationships with government and regional stakeholders to start operations at the earliest, it is thus important to consider various possible motivations of the leaders—a new type of an institution will require an academic entrepreneur, as was seen for many new HEIs in this study.

10.2.3 Creating unique identities of new universities for differentiation

Except for a few selected national-level institutions (some of which were part of this thesis), there is very little differentiation between universities in India, with very little change in the structure of the HE system and the practice of it (Altbach, 2009; Jayaram,

2007). As India moves towards massification of its HE system, differentiated HEIs catering to heterogeneous requirements of the student clientele and to India's huge human capital requirements need to be developed (Marginson, 2016). One of the main findings of this thesis is that regions can have irreversible long-lasting effects on the development of new HEIs causing their path-dependent evolution and helping them create a unique identity. Thus, differentiated HEI systems need not just be built to meet diverse student needs but also have to factor in the diverse capabilities and expectations of the regions that they are located in. Huisman et al. (2007) used five variables—size, form of control, range of disciplines, degree awarded, and modes of study—to measure diversity of the UK HE system. Brennan et al. (2004) found recently created institutions to be under greater control of local authorities, and thus, suggest that such diversification process of the HE system is a dual one, resulting from local and global pressures.

Given the above, policy makers can consider the potential of the regional context to developing a new HEI as one of the factors for developing differentiated national HE systems. However, unfortunately, the location of a new university in India is often turned in to a political agenda instead of a strategic one, mired with negotiations between various stakeholders at the national, state, and regional level. The Members of Parliament (MPs) elected from the region in the government bargain for its establishment to be able to flaunt it as their contribution to the region. Thus, government and policy makers need to leave aside such political interests and be proactive to situate new HEIs in regions where the university-region relationship can be unique and symbiotic, and the region offers strategic advantages to the new university. Thus, Expert Committees may be formed to decide the location and nature of the new universities instead of being decided by politicians and discussed in parliamentary debates.

Another key implication on practice for developing unique identities is the need to have adequate additional funding and resources, in addition to those provided by the government, and develop a diversified funding base. Practices in the starting private universities in India and in other parts of the world suggest that completing a reasonable portion of the infrastructure before beginning operations may ease out significant managerial hurdle for the HEIs to start unique research and academic programmes. With out such adequate

support and autonomy, large policy changes may be disruptive and move the institutions in completely different paths.

In addition to the above two areas, studies of this nature contribute to the development of context-specific knowledge of the country or region, and to the global scholarship of HE. To my knowledge, this thesis is hitherto the only study on regional engagement of universities in India. I have elaborated the contributions of this study to the field of HE research in a South Asian context in Appendix 3.

10.3 Areas of further research

This thesis is perhaps the first study on regional engagement of *new universities* in the literature. It is also among the few that has applied path-dependency theory to examine the evolution of new universities. Building on these two aspects, this thesis opens up several areas of future research as explained below.

First, as explained earlier, this study has excluded the views of the regional stakeholders in the university-region relationship. However, I find that regional aspects, such as readiness of the region to host a new university, proactiveness of regional stakeholders to engage with a new university and regional connectivity, influenced the evolution of new universities in various stages. Thus, future studies can focus on the questions such as “what attributes of regions make them suited to host a new university”, “how can regions respond to the establishment of new universities”, and “how can new universities contribute to the development of the region” by analysing the expectations, demands and tensions of the regional stakeholders. Such studies can aim to identify different characteristics of the region, including social, political and economic, that aid or hinder establishing a symbiotic relationship between the university and the region. Researchers could situate such studies in mass HE systems, such as China and India, where the spread of universities across different regions is an important consideration for reducing socio-economic inequality between regions. Hence, future studies that compare new universities with well-established ones in their role in regional development can help in the design of mass HE systems in these countries.

Second, the new HEIs in this study considered their research and teaching as distinct activities. Teaching activities were influenced by what was approved by the government,

whereas the research activities were largely dependent on faculty interests. The findings indicate that the motivation for engaging with the region for research (i.e. access to funding, access to data, pilot projects) is different from engaging for teaching, which is motivated by pedagogical innovations. Given the above, future studies can focus on understanding the links between universities and regions, separately for teaching and research-intensive universities. Such studies could include teaching institutions across different disciplinary areas and sizes of programmes, and focus on understanding different management structures, internal systems and units within institutions on their engagement with the region.

Third, this study was situated in INIs, a specific type of government-funded HEIs in India. However, with recent wave of privatisation of HE in India, and even in other parts of the global HE system, different models of private participation in HE system have gained importance (Hunt et al., 2016). Hence, future studies could include other types of universities such as private, central, and state universities, and analyse the role of different governance and management structures of HEIs on their links with the region and regional stakeholders.

Last, studies on institutional history of universities—an area where path dependency theory could be widely applied—are common, but are methodologically confined to documentation of factual data by universities themselves. Although the study of institutional history was not an explicit focus of this thesis, examining the past events and phenomenon of the new HEIs has been a key feature of data collection and analysis to understand the evolution of the new HEIs. In future studies, researchers can focus on using path-dependency theory to understand the transformation of well-established universities to integrate regional missions into their core missions. Much like the new HEIs in this study, future studies can explore the role of antecedents in well-established HEIs and examine what makes some well-established universities more open to adopting regional mission than others, what decisions and events have more lasting impact on the transformation of well-established research-oriented universities to enterprising universities that engage with the region. Such an approach can be valuable in understanding the role of the regions in the evolution of the post-1992 universities in the UK, and also for the development of specific initiatives within universities started in partnerships with the region.

10.4 Implications on my own practice

Over the past eight years I have worked in the Office of Development of the Indian School of Business (ISB), a privately held management institute in India. My main responsibilities are to forge partnerships with external stakeholders and raise funding for the advancement of ISB. ISB aspires to be a research-driven global business school from India. Established in 2001, ISB enrolls close to 1500 students every year, has nearly 50 faculty members, and has two campuses in India. ISB fits two criteria for inclusion of new universities in this study (i.e. being an institution established between 1995-2015 and being focussed on research and teaching). However, being established as a private HEI, an establishment structure of new universities that was excluded in this study, it provides an opportunity to understand similarities and differences in ISB's regional engagement efforts from the others included in the thesis.

ISB's global aspirations are reflected in several of its activities. It's faculty members, who are recruited primarily from the US, publish and disseminate research in globally top-ranked academic journals and conferences. It's MBA programme gets ranked in the Global MBA Programme rankings of the Financial Times. Unlike the HEIs included in this study, ISB is not recognised by the government as a university. It's programmes are accredited by global accreditation agencies. Despite such global norms in research and teaching, engagement with industry, government and society is one of ISB's four mission statements, although it does not have an explicit emphasis on the region.

Because of its establishment structure, unlike the HEIs in this study, ISB does not have the legacy of other well-established INIs in the area of management. Not being regulated by the government, neither did ISB rely on funding from government sources nor was government involved in facilitating any discussions with regional stakeholders. However, endorsement of ISB's academic and research excellence by the government has been helpful in initiating discussions with regional stakeholders. Lastly, the faculty members at the ISB aspire to publish academic research in globally accepted academic journals. Thus, unlike the new HEIs in this study, carrying out small-scale pilot research projects based on engagement with the region, has not been helpful for the faculty members at the ISB due to concerns associated with generalisability and validity of such projects. Thus, there has been very few

research-based collaboration with regional stakeholders. In terms of antecedents, the faculty members at ISB were recruited from the US, and thus, had no historical connections with regional stakeholders. ISB established its infrastructure and recruited visiting faculty members with adequate funding support before it began its academic programmes. This helped it launch its programmes and research efforts without being constrained by infrastructural resources. This is unlike the HEIs in this study who had to sequentially start programmes and research due to inadequate infrastructure and faculty members in the initial years. Given its global aspirations and the lack any antecedents needed for path dependent evolution, ISB could be best described as non-path dependent institution that whose evolution has no relationship with the region.

However, even for non-path dependent institutions, an exogenous shock or an endogenous crisis can act as contingent events and push the institution in an alternate path (Martin and Sunley, 2006). ISB established a second campus in the northern region of India in 2012. This was made possible because of funding support from the four founding supporters of the campus, who hailed from the region. The funding support was adequately supported with additional antecedents such as endorsement by the Central Government to establish an HEI in the region, the know-how about establishing a campus already available at the ISB, and support from the State Government to provide the land. Subsequently, similar to the evolutionary path dependent HEIs discussed in this thesis, ISB had established dedicated Centres of Excellence or Institutes to facilitate discussions with the external stakeholders, including those from the region, once it had adequate threshold resources, such as, philanthropic funding, research associates and critical mass of faculty members interests in an area of study. This confirms to the findings in the thesis wherein the threshold resources was identified as one of the antecedents for regional engagement of the new HEIs. In summary, I feel that inclusion of a private institute to the list of HEIs in this study would have enriched the findings.

10.5 Dissemination of findings

I will send a copy of this thesis to the Directors of the HEIs included in this study and to the participants interviewed. I have presented the preliminary findings at the Yale-

NUS College, Singapore, BERA Annual Conference 2017, Brighton, UK, and IIHS Annual Research Conference 2018, Bangalore, India. Based on the findings, I, along with another doctoral student from UCL, had organised two workshops in India titled “In Otto Königberger’s footsteps-encouraging collaboration between cities and universities” in May 2018, with funding support from the UCL Grand Challenges. The objective of the workshops was to develop a collaborative approach between development of cities and universities. I am hoping to submit the findings for publications in peer-reviewed journals.

References

A

Elisa S Abes, Golden Jackson, and Susan R Jones. Factors that motivate and deter faculty use of service-learning. *Michigan Journal of Community Service Learning*, 9(1), 2002.

Pawan Agarwal. Higher education in india: The need for change. Technical report, Working paper, 2006.

Pawan Agarwal. Higher education in india: Growth, concerns and change agenda. *Higher Education Quarterly*, 61(2):197–207, 2007.

All India Survey on Higher Education. *AISHE Reports*. Ministry of Human Resource Development, Government Of India, August 2017. Retrieved June 21, 2018, from <http://aishe.nic.in/aishe/reports>.

Janelle Allison and Robyn Eversole. A new direction for regional university campuses: catalyzing innovation in place. *Innovation: The European Journal of Social Science Research*, 21(2):95–109, 2008.

P.G. Altbach, L. Reisberg, J. Salmi, and I. Froumin. *Accelerated Universities: Ideas and Money Combine to Build Academic Excellence*. Global Perspectives on Higher Education. Brill Academic Publishing, 2018. ISBN 9789004366091. URL <https://books.google.co.in/books?id=7EiJtAEACAAJ>.

Philip G Altbach. The dilemma of change in indian higher education. *Higher Education*, 26(1):3–20, 1993.

Philip G Altbach. One-third of the globe: The future of higher education in china and india. *Prospects*, 39(1):11, 2009.

Anthony Lising Antonio, Helen S Astin, and Christine M Cress. Community service in higher education: A look at the nation's faculty. *The Review of Higher Education*, 23(4):373–397, 2000.

W.B. Arthur. *Increasing Returns and Path Dependence in the Economy*. Economics, cognition, and society. University of Michigan Press, 1994. ISBN 9780472022403. URL <https://books.google.co.in/books?id=k6Vk5YZRzpEC>.

Bjørn T Asheim and Lars Coenen. Knowledge bases and regional innovation systems: Comparing nordic clusters. *Research policy*, 34(8):1173–1190, 2005.

B

C. Barker, N. Pistrang, and R. Elliott. *Research Methods in Clinical Psychology: An Introduction for Students and Practitioners*. Wiley, 2015. ISBN 9781118773192. URL <https://books.google.co.in/books?id=5eudCgAAQBAJ>.

Rudi Bekkers and Isabel Maria Bodas Freitas. Analysing knowledge transfer channels between universities and industry: To what degree do sectors also matter? *Research policy*, 37(10):1837–1853, 2008.

Paul Benneworth and Alan Sanderson. The regional engagement of universities. *Higher Education Management and Policy*, 21(1):1–18, 2009.

Paul Benneworth, Lars Coenen, Jerker Moodysson, and Björn Asheim. Exploring the multiple roles of lund university in strengthening scania's regional innovation system: Towards institutional learning? *European Planning Studies*, 17(11):1645–1664, 2009.

Rica Bhattacharyya and Kala Vijayraghavan. New IIMs face leadership crisis; lack of freedom, poor salaries make life tough. *The Economic Times*, Sep 2015. Retrieved September 12, 2017, from <https://economictimes.indiatimes.com/jobs/new-iims-face-leadership-crisis-lack-of-freedom-poor-salaries-make-life-tough/articleshow/46752662.cms>.

- Anthony Biglan. The characteristics of subject matter in different academic areas. *Journal of applied Psychology*, 57(3):195, 1973.
- Gerry Boucher, Cheryl Conway, and Els Van Der Meer. Tiers of engagement by universities in their region's development. *Regional studies*, 37(9):887–897, 2003.
- Harry C Boyte et al. Going public: Academics and public life. *Occasional paper*, (10062), 2004.
- Barry Bozeman and Daniel Sarewitz. Public value mapping and science policy evaluation. *Minerva*, 49(1):1–23, 2011.
- John Brennan, Roger King, and Yann Lebeau. The role of universities in the transformation of societies. *Synthesis Report. Centre for Higher Education Research and Information/Association of Commonwealth Universities, UK*, 2004.
- John Brennan, Allan Cochrane, Yann Lebeau, and Ruth Williams. *The University in its Place: social and cultural perspectives on the regional role of universities*. Springer, 2018.
- Johan Bruneel, Pablo d'Este, and Ammon Salter. Investigating the factors that diminish the barriers to university–industry collaboration. *Research policy*, 39(7):858–868, 2010.

C

- David Chapman and Chiao-Ling Chien. Higher education in asia: Expanding out, expanding up. *Montreal: UNESCO Institute for Statistics*, 2014.
- David Charles, Bruce Wilson, et al. Managing regional engagement: The role of benchmarking. 2012.
- Paul Chatterton and John Goddard. The response of higher education institutions to regional needs. *European Journal of Education*, 35(4):475–496, 2000.
- Burton R Clark. *Creating entrepreneurial universities: organizational pathways of transformation. Issues in Higher Education*. ERIC, 1998.
- Nico Cloete, Tracy Bailey, and Pundy Pillay. *Universities and economic development in Africa*. African Minds, 2011.

Kelly Coate, Ronald Barnett, and Gareth Williams. Relationships between teaching and research in higher education in England. *Higher Education Quarterly*, 55(2):158–174, 2001.

Louis Cohen, Lawrence Manion, and Keith Morrison. *Research methods in education*. Routledge, 2002.

Carol L Colbeck and Lisa D Weaver. Faculty engagement in public scholarship: A motivation systems theory perspective. *Journal of Higher Education Outreach and Engagement*, 12(2):7–32, 2008.

Carol L Colbeck and Patty Wharton-Michael. Individual and organizational influences on faculty members' engagement in public scholarship. *New Directions for Teaching and Learning*, 2006(105):17–26, 2006.

Comptroller and Auditor General of India. Report of the Comptroller and Auditor General of India. Technical report, Comptroller and Auditor General of India, 2016.

Cheryl Conway, Lynne Humphrey, Paul Benneworth, David Charles, and Paul Younger. Characterising modes of university engagement with wider society: A literature review and survey of best practice. 2009.

National Research Council et al. *Scientific research in education*. National Academies Press, 2002.

Robin Cowan and Natalia Zinovyeva. University effects on regional innovation. *Research Policy*, 42(3):788–800, 2013.

D

Ada Demb and Amy Wade. Reality check: Faculty involvement in outreach & engagement. *The Journal of Higher Education*, 83(3):337–366, 2012.

E

Kathleen M Eisenhardt. Building theories from case study research. *Academy of Management Review*, 14(4):532–550, 1989.

Henry Etzkowitz, Andrew Webster, Christiane Gebhardt, and Branca Regina Cantisano Terra. The future of the university and the university of the future: evolution of ivory tower to entrepreneurial paradigm. *Research policy*, 29(2):313–330, 2000.

F

Sharon Feeney and John Hogan. A path dependence approach to understanding educational policy harmonisation: The qualifications framework in the european higher education area. *Higher Education Policy*, 30(3):279–298, 2017.

M.E. Ford. *Motivating Humans: Goals, Emotions, and Personal Agency Beliefs*. SAGE Publications, 1992. ISBN 9780803945296. URL https://books.google.co.in/books?id=_b-RmaOI8bQC.

G

Raghu Garud, Arun Kumaraswamy, and Peter Karnøe. Path dependence or path creation? *Journal of Management Studies*, 47(4):760–774, 2010.

Roger L Geiger. *Knowledge and money: Research universities and the paradox of the marketplace*. Stanford University Press, 2004.

Connie JG Gersick, Jane E Dutton, and Jean M Bartunek. Learning from academia: The importance of relationships in professional life. *Academy of Management Journal*, 43(6):1026–1044, 2000.

Chris R Glass, Diane M Doberneck, and John H Schweitzer. Unpacking faculty engagement: The types of activities faculty members report as publicly engaged scholarship during promotion and tenure. *Journal of Higher Education Outreach and Engagement*, 15(1):7–30, 2011.

John Goddard and Jaana Puukka. The engagement of higher education institutions in regional development: An overview of the opportunities and challenges. *Higher education management and policy*, 20(2):11–41, 2008.

- Nahid Golafshani. Understanding reliability and validity in qualitative research. *The qualitative report*, 8(4):597–606, 2003.
- Harvey Goldstein and Joshua Drucker. The economic development impacts of universities on regions: Do size and distance matter? *Economic development quarterly*, 20(1):22–43, 2006.
- Delwyn Goodrick et al. Comparative case studies: Methodological briefs-impact evaluation no. 9. Technical report, 2014.
- Chrys Gunasekara. Leading the horses to water: The dilemmas of academics and university managers in regional engagement. *Journal of Sociology*, 42(2):145–163, 2006a.
- Chrys Gunasekara. Reframing the role of universities in the development of regional innovation systems. *The Journal of Technology Transfer*, 31(1):101–113, 2006b.
- Deepthi Gupta and Navneet Gupta. Higher education in india: structure, statistics and challenges. *Journal of education and Practice*, 3(2), 2012.

H

- John Hattie and Herbert W Marsh. The relationship between research and teaching: A meta-analysis. *Review of educational research*, 66(4):507–542, 1996.
- Geoffrey M Hodgson. The evolution of institutions: an agenda for future theoretical research. *Constitutional Political Economy*, 13(2):111–127, 2002.
- Barbara A Holland and Sherril B Gelmon. The state of the” engaged campus”: What have we learned about building and sustaining university-community partnerships? *AAHE bulletin*, 51:3–6, 1998.
- Ray Hudson. Fuzzy concepts and sloppy thinking: reflections on recent developments in critical regional studies. *Regional Studies*, 37(6-7):741–746, 2003.
- Jeroen Huisman, Jorunn D Norgård, J rgen Gulddahl Rasmussen, and Bj rn Stensaker. ‘alternative’universities revisited: A study of the distinctiveness of universities established in the spirit of 1968. *Tertiary Education & Management*, 8(4):315–332, 2002.

Jeroen Huisman, Lynn Meek, and Fiona Wood. Institutional diversity in higher education: A cross-national and longitudinal analysis. *Higher Education Quarterly*, 61(4):563–577, 2007.

Lynne Humphrey. University–community engagement. In *University engagement with socially excluded communities*, pages 103–124. Springer, 2013.

Stephen Hunt, Claire Callender, and Gareth Parry. The entry and experience of private providers of higher education in six countries. *Centre for Global Higher Education*, page 9, 2016.

I

IIM Review Committee. IIMs: From Great Teaching Institutions to Thought Leadership Centres, Sep 2008. Retrieved April 17, 2018, from http://mhrd.gov.in/sites/upload_files/mhrd/files/document-reports/bhargava_IIMreview_0.pdf.

J

N Jayaram. Beyond retailing knowledge: Prospects of research-oriented universities in india. *World class worldwide: Transforming research universities in Asia and Latin America*, pages 70–94, 2007.

Bryan Jenner, Uwe Flick, Ernst von Kardoff, and Ines Steinke. *A companion to qualitative research*. Sage, 2004.

D Bruce Johnstone. The economics and politics of cost sharing in higher education: comparative perspectives. *Economics of education review*, 23(4):403–410, 2004.

Jisun Jung, Hugo Horta, and Akiyoshi Yonezawa. Higher education research in asia: History, development and challenges. In *Researching Higher Education in Asia*, pages 355–366. Springer, 2018.

K

A Kakodkar et al. Taking IITs to excellence and greater relevance, 2011. Retrieved 15 May, 2018, from <http://www.iiti.ac.in/Administration/Kakodkar%20Committee%20Report.pdf>.

Alfred Kieser and Lars Leiner. Why the rigour–relevance gap in management research is unbridgeable. *Journal of Management Studies*, 46(3):516–533, 2009.

Marek Kwiek. Universities, regional development and economic competitiveness: The polish case. *Universities and regional development. A critical assessment of tensions and contradictions*. New York: Routledge, pages 69–85, 2012.

L

Marie-Carine Lall and Chatham House. *The challenges for India’s education system*. Royal Institute of International Affairs London, 2005.

Philippe Laredo. Revisiting the third mission of universities: Toward a renewed categorization of university activities? *Higher education policy*, 20(4):441–456, 2007.

Grit Laudel and Jochen Gläser. From apprentice to colleague: The metamorphosis of early career researchers. *Higher Education*, 55(3):387–406, 2008.

Yann Lebeau. Universities and social transformation in sub-saharan africa: global rhetoric and local contradictions. *Compare*, 38(2):139–153, 2008.

Yann Lebeau and Alice Bennion. Forms of embeddedness and discourses of engagement: a case study of universities in their local environment. *Studies in Higher Education*, 39(2): 278–293, 2014.

Yann Lebeau and Allan Cochrane. Rethinking the ‘third mission’: Uk universities and regional engagement in challenging times. *European Journal of Higher Education*, 5(3): 250–263, 2015.

M

- Thomas L Magnanti. Building a new academic institution: The singapore university of technology and design. In *Accelerated Universities*, pages 103–127. Brill Sense, 2018.
- James Mahoney. Path dependence in historical sociology. *Theory and society*, 29(4):507–548, 2000.
- Simon Marginson. Dynamics of national and global competition in higher education. *Higher education*, 52(1):1–39, 2006.
- Simon Marginson. The worldwide trend to high participation higher education: Dynamics of social stratification in inclusive systems. *Higher Education*, 72(4):413–434, 2016.
- Ann Markusen. Fuzzy concepts, scanty evidence, policy distance: the case for rigour and policy relevance in critical regional studies. *Regional studies*, 37(6-7):701–717, 2003.
- Ron Martin and Peter Sunley. Path dependence and regional economic evolution. *Journal of economic geography*, 6(4):395–437, 2006.
- John M McDowell and Michael Melvin. The determinants of co-authorship: An analysis of the economics literature. *The review of economics and statistics*, pages 155–160, 1983.
- Ian McNay. From the collegial academy to corporate enterprise: the changing cultures of universities. *The changing university*, 9:105–15, 1995.
- Kenneth Mellanby. Establishing a new university in africa. *Minerva*, 1(2):149–158, 1963.
- Robin Middlehurst. Changing internal governance: A discussion of leadership roles and management structures in uk universities. *Higher Education Quarterly*, 58(4):258–279, 2004.
- Ministry of HRD. Ministry for Human Resource Development, June 2018. Retrieved January 18, 2018, from <http://mhrd.gov.in>.
- Ministry of HRD. National Institutional Rankings Framework, August 2010. Retrieved July 24, 2017, from <https://www.nirfindia.org/Home>.

Ministry of Law and Justice. The Institutes of Technology (Amendment) Act. Technical report, August 2010. Retrieved September 30, 2017, from http://mhrd.gov.in/sites/upload_files/mhrd/files/upload_document/CEI-ResAdm-2006.pdf.

Ministry of Law and Justice. The Central Educational Institutions (Reservations in Admissions) Act, August 2007. Retrieved November 25, 2017, from http://mhrd.gov.in/sites/upload_files/mhrd/files/upload_document/CEI-ResAdm-2006.pdf.

Basant Kumar Mohanty. Dozen top schools go headless. *The Telegraph*, Dec 2015. Retrieved February 15, 2017, from https://www.telegraphindia.com/1151220/jsp/nation/story_59441.jsp.

Kathryn Mohrman, Wanhua Ma, and David Baker. The research university in transition: The emerging global model. *Higher education policy*, 21(1):5–27, 2008.

Eamonn Moran and Debananda Misra. Professional doctorates: A pathway to legitimacy for non-academic he professionals? *London Review of Education*, 16(1):75–89, 2018.

Christopher C Morphew and Jeroen Huisman. Using institutional theory to reframe research on academic drift. *Higher education in Europe*, 27(4):491–506, 2002.

N

Vishwambhar Nath. *Regional development and planning in India*. Concept Publishing Company, 2009.

New Castle University. Universities in regional development, August 1992. https://www.legislation.gov.uk/ukpga/1992/13/pdfs/ukpga_19920013_en.pdf.

NITI Aayog. *NITI Aayog Tertiary*. National Institution for Transforming India, Government Of India, August 2018. Retrieved June 21, 2018, from <http://niti.gov.in/content/tertiary>.

Roger Noll and William Rogerson. The economics of university indirect cost reimbursement in federal research grants. 1997.

O

OECD. *Higher education and regions: Globally competitive, locally engaged*. 2007.

Anatoly Oleksiyenko. Resource asymmetries and cumulative advantages in regional knowledge systems: Exploring a university's growth/share strategy. *Universities and regional development: A critical assessment of tensions and contradictions*, pages 161–178, 2012.

KerryAnn O'Meara. Motivation for faculty community engagement: Learning from exemplars. *Journal of Higher Education Outreach and Engagement*, 12(1):7–30, 2008.

KerryAnn O'Meara, Lorilee R Sandmann, John Saltmarsh, and Dwight E Giles. Studying the professional lives and work of faculty involved in community engagement. *Innovative Higher Education*, 36(2):83–96, 2011.

Rory P O'Shea, Thomas J Allen, Kenneth P Morse, Colm O'Gorman, and Frank Roche. Delineating the anatomy of an entrepreneurial university: the massachusetts institute of technology experience. *R&D Management*, 37(1):1–16, 2007.

P

Parliamentary Standing Committee. Issues and challenges before higher educational sector in india. Technical report, Human Resource Development, Parliament of India, Rajya Sabha, 2016.

Jamie Peck. Fuzzy old world: a response to markusen. *Regional Studies*, 37(6-7):729–740, 2003.

Rómulo Pinheiro, Paul Benneworth, and Glen A Jones. *Universities and regional development: A critical assessment of tensions and contradictions*. Routledge, 2012.

Philip M Podsakoff and Dennis W Organ. Self-reports in organizational research: Problems and prospects. *Journal of management*, 12(4):531–544, 1986.

Ved Prakash. Trends in growth and financing of higher education in india. *Economic and Political Weekly*, pages 3249–3258, 2007.

Prime Minister's Office. *PM's inaugural address at the 'PAN IIT-2008' – IIT Alumni Global Conference*. Press Information Bureau, Government of India, December 2008. Retrieved July 15, 2017, from <http://pib.nic.in/newsite/erelcontent.aspx?relid=45899>.

Prof. Yashpal Committee. *Renovation and Rejuvenation of Higher Education*, September 2011. Retrieved April 4, 2018, from http://mhrd.gov.in/sites/upload_files/mhrd/files/document-reports/YPC-Report_0.pdf.

R

Francisco O Ramirez. Accounting for excellence: Transforming universities into organizational actors. In *Higher education, policy, and the global competition phenomenon*, pages 43–58. Springer, 2010.

S

Jamil Salmi. The challenge of establishing world-class research universities in developing countries. *University Research for Innovation*, page 271, 2010.

Doris Schartinger, Christian Rammer, Manfred M Fischer, and Josef Fröhlich. Knowledge interactions between universities and industry in austria: sectoral patterns and determinants. *Research policy*, 31(3):303–328, 2002.

Waltraud Schelkle. *Paradigms of social change: Modernization, development, transformation, evolution*. Campus Verlag, 2000.

Marlene Schommer-Aikins, Orpha K Duell, and Sue Barker. Epistemological beliefs across domains using biglan's classification of academic disciplines. *Research in Higher Education*, 44(3):347–366, 2003.

G. Schreyögg and J. Sydow. *The Hidden Dynamics of Path Dependence: Institutions and Organizations*. Palgrave Macmillan UK, 2009. ISBN 9780230274075. URL https://books.google.co.in/books?id=EU_eCwAAQBAJ.

Robert C Serow. Research and teaching at a research university. *Higher Education*, 40(4): 449–463, 2000.

Parth J Shah. Regulatory structure of higher education in india. In *Center for Civil Society New Delhi Working Paper*. 2015.

Michael Shattock. University governance, leadership and management in a decade of diversification and uncertainty. *Higher Education Quarterly*, 67(3):217–233, 2013.

Bjørn Stensaker and Mats Benner. Doomed to be entrepreneurial: Institutional transformation or institutional lock-ins of ‘new’ universities? *Minerva*, 51(4):399–416, 2013.

Simone Strambach. Path dependency and path plasticity: the co-evolution of institutions and innovation-the german customized business software industry. Technical report, Working Papers on Innovation and Space, 2008.

Jörg Sydow, Georg Schreyögg, and Jochen Koch. Organizational path dependence: Opening the black box. *Academy of management review*, 34(4):689–709, 2009.

T

William Taylor. *Universities under Scrutiny*. ERIC, 1987.

Paul Temple, Claire Callender, Lyn Grove, and Natasha Kersh. Managing the student experience in english higher education: Differing responses to market pressures. *London Review of Education*, 14(1):33–46, 2016.

The Hindustan Times. Director’s post lying vacant in 14 out of 20 IIMs: HRD ministry tells Lok Sabha, Feb 2017. Retrieved July 20, 2018, from <http://www.hindustantimes.com/education/director-s-post-lying-vacant-in-14-out-of-20-iims-hrd-ministry-tells-lok-sabha/story-kwEDHzRIDJscX9RDCpFA0I.html>.

The National Archives. Further and Higher Education Act 1992, August 1992. Retrieved June 21, 2018, from https://www.legislation.gov.uk/ukpga/1992/13/pdfs/ukpga_19920013_en.pdf.

M. Tight. *Researching Higher Education*. SRHE and Open University Press imprint. McGraw-Hill Education, 2012. ISBN 9780335241835. URL <https://books.google.co.in/books?id=fkBp1BvwuREC>.

Jandhyala BG Tilak. Student loans in financing higher education in india. *Higher Education*, 23(4):389–404, 1992.

Michael L Tushman, Charles O'Reilly, Amy Fenollosa, Adam M Kleinbaum, and Dan McGrath. Relevance and rigor: Executive education as a lever in shaping practice and research. *Academy of Management Learning & Education*, 6(3):345–362, 2007.

U

UNESCO Institute for Statistics. School Enrolment, Tertiary. Retrieved June 21, 2018, from <https://data.worldbank.org/indicator/SE.TER.ENRR>, organization = The World Bank, date = 30, month = August, year = 2018, urldate = 21 June, 2018,.

Yogesh K Upadhyaya. The making of new (IITs), March 2005. Retrieved November 28, 2018, from <http://www.rediff.com/money/2005/mar/23iit.htm>.

Elvira Uyarra. Conceptualizing the regional roles of universities, implications and contradictions. *European Planning Studies*, 18(8):1227–1246, 2010.

V

Frans Van Vught. Mission diversity and reputation in higher education. *Higher Education Policy*, 21(2):151–174, 2008.

NV Varghese. Education research and emergence of higher education as a field of study in india. In *Researching Higher Education in Asia*, pages 299–313. Springer, 2018.

Lori J Vogelgesang, Nida Denson, and Uma M Jayakumar. What determines faculty-engaged scholarship? *The Review of Higher Education*, 33(4):437–472, 2010.

W

Gerald Wangenge-Ouma and Samuel Neba Fongwa. National universities and the regional dimension: a dilemma? In *Universities and Regional Development*, pages 76–88. Routledge, 2012.

- Richard Watermeyer. Lost in the ‘third space’: the impact of public engagement in higher education on academic identity, research practice and career progression. *European Journal of Higher Education*, 5(3):331–347, 2015.
- David J Weerts. State funding and the engaged university: Understanding community engagement and state appropriations for higher education. *The Review of Higher Education*, 38(1):133–169, 2014.
- David J Weerts and Lorilee R Sandmann. Community engagement and boundary-spanning roles at research universities. *The Journal of Higher Education*, 81(6):632–657, 2010.
- Karl E Weick. Educational organizations as loosely coupled systems. *Administrative science quarterly*, pages 1–19, 1976.
- Celia Whitchurch. Shifting identities and blurring boundaries: The emergence of third space professionals in uk higher education. *Higher Education Quarterly*, 62(4):377–396, 2008.
- Richard Whitley. Constructing universities as strategic actors in europe, japan and elsewhere. In *Academia Europaea–Wenner-Green Foundations International Symposium on The University in the Market*, 2007.
- A.M. Wu and J.N. Hawkins. *Massification of Higher Education in Asia: Consequences, Policy Responses and Changing Governance*. Higher education in Asia, quality, excellence and governance. Springer Science and Business Media, 2018. ISBN 9789811302480. URL <https://books.google.co.in/books?id=UW11DwAAQBAJ>.

Y

- R.K. Yin. *Case Study Research: Design and Methods*. Applied Social Research Methods. SAGE Publications, 2009. ISBN 9781412960991. URL <https://books.google.co.in/books?id=FzawIAdilHkC>.
- Jan Youtie and Philip Shapira. Building an innovation hub: A case study of the transformation of university roles in regional technological and economic development. *Research policy*, 37(8):1188–1204, 2008.

Appendices

Appendix 1: Different methodological approaches to analyse regional engagement

Regional engagement of universities has been analysed at the micro-, macro-, and meso-levels. At the micro-level, researchers have studied the goals, motivations, values, and identities of faculty members involved in community engagement and public scholarship¹. These studies use qualitative and quantitative methodologies that factor in different individual attributes of faculty members (i.e., age, rank, and discipline) and institutional attributes of universities (i.e., type, size, and location). Abes et al. (2002) used surveys with more than 500 faculty members from 29 institutions to find that faculty members are motivated to engage with communities to enhance student learning and development. Demb and Wade (2012) used survey methods with 671 faculty members and identify personal, professional, communal, and institutional clusters that influence faculty choices about their involvement in outreach and engagement. Gunasekara (2006a) used interview methods to find that faculty members face individual, institutional and policy identity dilemmas while engaging with the region.

A second stream of studies have conducted macro-level analyses across multiple HE systems and regions. Through document analysis, literature review and primary data collection, they have explored structural, social, and policy related factors that influence regional engagement of universities. These studies are motivated by the need to develop

¹Community engagement and public scholarship have similar connotation as that of regional engagement except that they are not specific to a geographic or economic boundary. Community engagement implies application of faculty member's expertise to solve real-world problems in ways that fulfil institutional mission (Weerts and Sandmann, 2010). Public scholarship is scholarly activity generating new knowledge on issues of community engagement (Colbeck and Weaver, 2008, p. 7).

effective policy and innovation systems at the local, regional and national level. “Universities in Regional Development”, a research project involving seven European research centres and one Australian partner, identified the main factors impacting universities’ participation in regional development to be the extent of regionalisation in the national higher education system, the type of region, the character of regional identity, the existence and type of regional networks, and the number and scale of universities in the region (New Castle University, 1992). Gunasekara (2006b) proposes a conceptual framework for analysing the variations in the roles of universities in the development of regional innovation systems, and applies the same to three non-metropolitan universities in Australia.

A third stream of studies have conducted meso-level analysis at the level of universities and/or regions to understand the complex nature of their reciprocal relationships within a national-level HE system. These studies are motivated by the need to understand institutional structures, policies, and resources needed by regions and universities for their effective engagement. They investigate missions, activities, resources, and norms or values of universities and regions for institutionalisation of regional engagement within universities (Boucher et al., 2003; Goldstein and Drucker, 2006; Gunasekara, 2006b). Qualitative analysis methodologies encompassing different institutional forms and national systems are common in these studies. This study is conducted at the meso-level, and investigates the regional engagement of new universities at the level of universities in India.

Appendix 2: Individual institutional contexts of the HEIs

The seven HEIs included in this thesis focussed on four disciplinary areas and were situated in rural, semi-urban and urban regions. Besides these differences, the HEIs also had commonalities in their institutional context. They were all established as Institutes of National Importance (INI), were funded by the government, and had national or global aspirations for their research and teaching activities. They admitted students through a national level common entrance examination in their respective disciplines and their faculty members joined from various institutions nationally or globally. Almost a decade after their establishment (one of the HEIs included was 21 years old by the time of this study), the HEIs had developed to be quite different from each other. They differed in the programmes they offered, the number of students and faculty members, and the state of infrastructure (see Table 4.2 and Table 7.1 for details). The data collected from the HEIs suggested further commonalities and differences in the context the HEIs were established and operated.

It is difficult to compare the complex nature of the HEIs across all dimensions. Given the focus of the thesis on the role of regions on the development of the HEIs, I use the lens of regional engagement to analyse the commonalities and differences in the context of the HEIs. Based on the analysis that is explained below, I have classified the HEIs in to three categories: (i) region-integrated universities, (ii) region-influenced universities, and (iii) region-as-a-service universities. These are idealised classification of universities and none of the HEIs included in this thesis sits perfectly in any of these classifications. I analyse below the different institutional contexts corresponding to the HEIs in each of these categories and discuss its implications on their development and the different ways in which they leveraged the region. A summary of this analysis is presented in Table 1 below.

A. Region-integrated universities

Region-integrated universities are those HEIs in this study in which the region had a significant role in their development by being part of their institutional mission and culture. The region not just provided resources and services to the HEIs but was also an integral part of their research, teaching and outreach activities. The unique image or characteristics of the region with respect to the HEIs, or vice-versa, was an critical factor for attracting fac-

Table 1: Summary of individual institutional contexts of the HEIs

Commonalities within the HEIs	Differences across the HEIs		
Region-integrated university	1. IIT-RN		2. IISER-SN
<p>The region is well-integrated with the core research and teaching functions of the HEI. It shapes the development of the HEI by providing the required resources and by being part of the institutional mission and culture. The region is an integral factor for attracting faculty and students, and shaping the nature of research and teaching of the HEI.</p>	<p>Unique characteristics of the region led to niche research areas for the HEI.</p> <p>Strong leadership promoted regional engagement.</p> <p>Regional engagement was a key differentiator from counter parts.</p> <p>Poor connectivity of the region limited access to stakeholders outside of it.</p>	<p>Unique disciplinary focus led to strong position in the region.</p> <p>Involved in regional innovation network and collaboration with other HE institutions.</p> <p>Development of the HEI was complimented with a regional development plan and developing urban image of the region.</p>	
Region-influenced universities	3. IIM-SO	4. IIT-UN	5. SPA-SN
<p>The region is peripheral to the development of the HEI but is not integral to their institutional mission or culture. Yet, the region plays a very important role in the pre-formation and path development phases of the HEI. The HEI continue to leverage the region for their core activities, as they deem convenient, but in a transactional manner.</p>	<p>Had operational stability (only institution that is 20 years old).</p> <p>Leadership focussed on consolidation of activities and promoting a culture of excellence.</p> <p>Region as a source of experimentation in research and teaching.</p>	<p>Global aspirations and connections to networks for being in a metropolitan city in a urban region.</p> <p>Leveraged the image of the region to shape its own image.</p> <p>Region was a source of pilot for before taking projects to national or global levels.</p>	<p>Competition with well-established HEIs and national aspirations.</p> <p>Leveraged the region for research and teaching activities to fulfil the above.</p> <p>Constraints due to leadership discontinuity leading to delays in operational activities.</p>
Region-as-a-service universities	6. IIM-SN		7. IIT-SN
<p>The HEI is yet to develop any form of engagement with the region. However, it leverages the region as a provider of services and infrastructure for their various operating activities. Region acts a <i>place</i> to attract faculty members and students.</p>	<p>Under-developed image of the region and governance concerns posed challenges in developing a path.</p> <p>Hard to shake off dependency on the region for infrastructure and attracting student and faculty.</p> <p>Similar to well-established INIs from the same discipline; competition with in new HEIs</p>		<p>Strong leadership focussed on research excellence and developing image of the region help in developing aspirations and reputation.</p> <p>Adequate support from the region for infrastructural and operational needs.</p> <p>Nationally competitive with well-established HEIs.</p>

ulty members and students to the HEIs and in shaping the research, teaching and outreach activities of the HEIs. The engagement between the HEIs and the region was mutual –the HEIs leveraged the region for their own development and also participated in the development the region in various ways (i.e., social, learning, cultural and economic). These HEIs mentioned about their regional engagement activities in their reports, website and media communications. They made focussed efforts to institutionalise their regional engagement through allocation of resources and appropriate rewards and incentive structures. I describe below the context of the two HEIs –IIT-RN and IISER-SN –that led to them being developed as region-integrated universities.

i. IIT-RN

IIT-RN was established in 2010 in a rural region situated near a mountain range. The nearest airport to IIT-RN was almost a six-hour drive and the nearest city was also not well-connected to IIT-RN. Such poor connectivity led to several challenges for IIT-RN including delay in campus construction, difficulty in procuring equipment for laboratories and in the visit of industry experts or academics to the campus. Some of the faculty members even mentioned the difficulty to attend international conferences because it took nearly two days to travel and obtain the visa from the nearest city. The rural region made it particularly difficult to attract faculty members due to the lack of adequate opportunities for spouses to work, good schools for kids and an urban lifestyle. In order to overcome some of these challenges, IIT-RN had developed to be self-sustainable on many aspects reducing its dependency on the region. It had developed an entrepreneurship centre that helped the spouses of faculty members to start their own businesses; it had started a school for the children of the faculty members; and it had also made make-shift buildings to be used as offices/classrooms/labs until the permanent campus could be completed. As a result, it had very low expectations from the region to provide any resources (e.g., funding, services for operating the campus, and infrastructure for research and teaching) for its research, teaching or campus operations.

However, IIT-RN was the first and only HEI of the cadre of INI in this region, which enhanced the image of the rural region in a national context. It enjoyed a position of superiority amongst other local academic institutions in the region. It had developed to

be an institution that the region was very proud as its ‘own’. Being involved or associated with IIT-RN was a matter of immense pride for the regional stakeholders. As a result, the regional businesses and government looked up to collaborate with it. Several faculty members described the willingness and pro-activeness of the regional stakeholders to provide data or to partner for developing pilot research projects. The regional community was also very supportive of the development and smooth operations of the campus of IIT-RN. Besides the above, the unique nature of the regional landscape (i.e., the mountain region) provided an opportunity for IIT-RN to carve out niche research areas, possible only because of its proximity to the region, and integrate a strong regional component in their research and teaching activities.

Instead of competing with other newly established IITs and their well-established counterparts for rankings and prestige – termed as vertical differentiation by Marginson (2016) – IIT-RN chose to create a niche in the context of the region and differentiate itself based on its curriculum, nature of research activities and engagement with the region – termed as horizontal differentiation. Engaging with the region was part of the mission statements of IIT-RN. It’s Director championed this mission at all levels, resulting in recruitment of faculty members who were interested in working on problems on regional relevance. Many of the faculty members indicated that they joined IIT-RN because of their preference to live in a rural region, away from an urban lifestyle, and/or the opportunity to work in the niche research areas. In summary, the low expectation of IIT-RN from the region, its unique regional landscape and the supportive and proactive regional stakeholders enabled its tight integration with the region. While some of these may have been borne out the inherent characteristics of the region and lack of any alternative, IIT-RN leveraged them to differentiate from others and develop it to be a region-integrated university.

ii. IISER-SN

IISER-SN was one among the five Indian Institutes of Science Education and Research (IISERs) established during 2006-2008 in India. The IISERs have a unique position in the Indian higher education system because of being the first and only national level institutes focussed exclusively on science discipline and offering graduate and post-graduate

degrees with an emphasis on research. The research and education activities of IISER-SN² were centred on fundamental and theoretical aspects of sciences that had very little relevance to the region. Its faculty members aspired to carve out a niche for themselves and be globally respected and known in their respective research areas. They solicited large grants from grant making agencies, presented in international conferences, published in international journals and collaborated with peers across the globe. A very small portion of the students at IISER-SN came from the region and many of its graduates moved outside of the region to either work or pursue PhDs. Over all, IISER-SN had evolved to be similar in norms as those of the well-established INIs in the technology or management disciplines. It aspired to become an “elite research university” that is self-producing, focussed on research performance and student quality or degree status (Marginson, 2016). While the HEIs from other disciplines included in this thesis competed with both well-established and new HEIs in their respective disciplines, IISER-SN had to compete only with the other newly-established IISERs. However, established at the same time, all the new IISERs had similar norms, initial conditions (e.g., level of funding allocated, size of campus, and planned strength of students and faculty members) and mostly resembled each other in terms of their aspirations and education and research activities. Thus, unlike IIT-RN above, IISER-SN did not compete with other HEIs by integrating its research and teaching activities with the region.

The development of IISER-SN coincided with a strong regional development plan creating an image of the region to be a rapidly developing region in India. As part of this development plan, the region was very well-connected to other parts of the country through rail and air. The state government had provided land to IISER-SN in an area that was being developed as ‘Knowledge City’. The Knowledge City was located in the central part of the region, was well-connected to the airport and had several other well-known universities. Besides this, the region already had several state-level universities and colleges. Within about five years of the establishment of IISER-SN, the region had several multi-disciplinary universities, government research labs and newly-established prominent national-level HEIs. The availability of these institutions helped IISER-SN attract faculty members and develop institutional collaborations.

²IISER-SN mainly offered Bachelors in Science (BS) - Masters in Science (MS) and PhD programmes in Biological Sciences, Chemical Sciences, Mathematical Sciences and Physical Sciences.

In addition, the focus on development and connectivity of region helped IISER-SN to establish its campus and research laboratories. It was the only HEI of the seven included in this thesis to have completed its campus construction. The image of the rapidly developing region helped attract faculty members and students, and also attract academics from other institutes to visit IISER-SN. It was also an important factor in shaping its student life and providing an urban lifestyle to faculty members and their families. In this way, the region was a major differentiator for IISER-SN for developing its campus, attracting faculty members and students and developing a research ecosystem. One of the Dean's at IISER-SN described the important role of the region as below:

What do you need for an institute of science? You need easy access so that you can get in material for your students. You need access because you need to get in scientists from around the world, around the country to come and visit. You need a sort of, an ecosystem of other science related or research institutes around you so that you can have a dialogue that you're not isolated. This is what [this region] is.

The above positioning of IISER-SN in its region is like “multiplayer universities in peripheral regions” described by Boucher et al. (2003). Boucher suggest that these universities do not show a clear-cut position in the regional engagement, but they often fulfil a wider regional mission by supplementing gaps in regional cultural provision. Because of being the only institute in science discipline, IISER-SN was part of several regional initiatives to enhance the competitiveness and innovation in the region. It also leveraged the region for its outreach activities, particularly in widening participation of students of the region in studying science discipline. Although such activities were not integral to its research and teaching activities, they were complimentary to the ways IISER-SN positioned itself in the region and developed to be a region-integrated university.

B. Region-influenced universities

Region-influenced universities are those HEIs in this study where the region was not part of their institutional mission or culture and was not integrated with their core research and teaching activities. This is not to dismiss the role of the region in the development of these HEIs. In fact, the region played an important role in the pre-formation and path

development phases of these HEIs through various means such as providing infrastructure support, helping attract faculty members and launch academic programmes. I have earlier described the development of such HEIs as “evolutionary path dependent” (refer to pg. 125 in Chapter 10 for details). Once these HEIs stabilised their academic programmes, hired faculty members and started research projects, they engaged with the region for direct and tangible benefits (e.g., financial gains, access to networks, and resources and image enhancement). Such engagements were often structured conveniently so as to not compromise the core research and teaching activities of the HEI and were subject to availability of additional resources. Unlike in region-integrated universities where engagement with the region was embedded in their research and teaching activities, and involved building trust and credibility without considerations to any tangible and immediate gains, in region-influenced universities, it was transactional in nature and largely relied on the capabilities of faculty members instead of institutional willingness, strategies and strengths. In cases where there was a need or opportunity to institutionalise regional engagement, these HEIs created separate mechanisms to do so to keep it distinct from their core research and teaching activities. I describe below the context of three HEIs – IIT-UN, IIM-SN and SPA-SN – that had developed as being region-influenced universities.

i. IIT-UN

IIT-UN was established in the technology discipline in 2008 and was located a metropolitan city within an urban region in the central parts of India. The region was well-known to be a hub for technology firms and had several industrial clusters and multinational corporations. Well-connected to other major cities in India and the world, it had a global city like image in India. Despite being situated at the periphery of this region, it was well-connected to the airport and the core region. From an academic environment perspective, the region had several universities and government research labs, although it did not have an institution of the cadre of INI prior to the establishment of IIT-UN. Studying in technology discipline was a preferred choice for higher education for many prospective students in the region. Based on the data on student enrolments, various articles in the media indicate that the region was consistently among the top providers of students to the IITs with

about 10% of the students in all IITs being from this region. The above regional context shaped the development of IIT-UN and the various ways in which it leveraged the region for its development. First, the global city like image of the place helped IIT-UN attract faculty members and students, and forge academic and industry collaborations that were national or global in nature rather than being restricted to the region itself. One of the Deans at IIT-UN explained this as below:

Use of the name [of the region] has helped us tremendously because [the region] has certain ethos. We are at an advantage where we are able to kind of piggy back on the success of [region] as a city that is promoting venture capital, as a city that promoting innovation, as a city that has fine academic institutions. ...We marketed ourselves as an institution from this region. You know, we were able to use that. Now that we are coming on our own, we can shed that.

Unlike in the HEIs situated in rural and semi-urban regions, the faculty members at IIT-UN did not express concerns related to the region, such as the lack an urban lifestyle, work opportunities for spouses and education for kids, to decide joining the institute. The region provided urban infrastructure facilities and an urban campus lifestyle to students, faculty members and their families. Likewise, from a research perspective, the connectivity and the image of the region helped IIT-UN with access to global knowledge networks and subsequent research and funding opportunities. For example: IIT-UN had forged a multi-year bilateral collaboration with another country that enabled mobility of students and faculty with well reputed universities of the other country and gave access to major funding. It also had the highest number of PhD students amongst all INIs in the technology discipline. As a result, many of the faculty members were oriented nationally and had global aspirations.

Second, because of the preference for technology discipline in higher education studies, IIT-UN was aspirational for prospective students from the region and provided a viable alternative for being closer home. Compared to other HEIs, a relatively large portion of students (38.2%) at IIT-UN were from the state in which it was situated (this ration was close to 5% for other HEIs included in this thesis). The region also enabled the students of IIT-UN to find jobs in national and multinational firms due to its proximity to global technology firms and ease of access to similar firms outside the region. Consequently, the academic and graduating experiences of the students were national or global rather than being restricted

to the region.

Hence, in many ways, IIT-UN resembled the “traditional universities in core region” suggested by Boucher et al. (2003). Engagement with the region is thus often less clear-cut and visible although not of less importance. Although research collaboration with the region was not expressed as an institutional priority at IIT-RN, the mere presence of various industries in the region brought forward various opportunities for the faculty members to engage with the region through advisory or consulting arrangement, grants and joint research projects. However, such engagements were often informal in nature and based on personal bias. One of the reasons for such nature of regional engagement is that the regional stakeholders are situated in the region, but their businesses are nationally or globally oriented. Thus, instead of integrating regional characteristics with its teaching and research missions, IIT-UN leveraged the region to fulfil its global aspirations.

ii. IIM-SO

Established in 1996 as an INI in management discipline, IIM-SO was the fifth IIM in India. Unlike the other HEIs in this thesis, it was established almost a decade before the steep increase in the number of IIMs that started in 2009³. It was situated in a semi-urban region that had the image of being one of the rapidly developing regions in India and was well-connected to other parts of the country. Not having to face competition from other new INIs established at the same time and leveraging its locational advantage, IIM-SO had evolved as an HEI with national aspirations and characteristics. Comments by its faculty members indicated that IIM-SO’s reputation and competitiveness in the national HE system had reached a level of stability determined largely by its export role of students (i.e., where the students were placed), choice of students to opt for admission and its position in the national league/ranking tables. Thus, IIM-SO considered itself as part of the well-established IIMs and did not compete or differentiate itself from the new IIMs established later. In fact, at the time of this study, it was acting as a mentor institute to two new IIMs established after 2009.

Over two decades after its establishment, IIM-SO was operating like a well-established

³After the establishment of IIM-SO, 14 additional IIMs have been established in India during 2009-16.

institute unlike the other HEIs in this thesis that were about a decade younger. Its infrastructure construction was complete; it had launched several academic programmes; and it had hired most of the required faculty members. Its revenues from the fees of its programmes provided financial stability and independence from seeking government funding. Its Director, instead of expanding its activities, had launched several initiatives to consolidate existing programmes, strengthen its reputation at the national level and increase the quality of research to make IIM-SO more competitive with the well-established IIMs. Some of the initiatives included tightened norms of faculty performance with a stronger focus on research, accreditation from international accrediting agency and opportunities for faculty to gain access to global academic networks. Expressing its intentions to consolidate existing programmes and not expand any further, IIM-SO responded to a request of the government to expand the intake of their PGP (MBA equivalent programme) as below:

The Institute already has a larger number of PGP student than other IIMs. Feedback from alumni and students suggest that the larger intake of the institution is seen unfavourably by programme aspirants from a placement point of view. This has the danger of being further accentuated when institutes with higher perceived ranking increase their intake. Based on the above, we believe that this would not be the opportune time to expand PGP intake.

IIM-SO was situated in a semi-urban region that was home to rich industrial clusters with small and medium scale businesses in traditional sectors. However, given the above institutional context, the faculty members had national or global aspirations that had little relevance to the region. They described that collaboration with the regional stakeholders did not help in research due to their small size, which did not result in generalisable and publishable finding. They carried out research that was largely perceived to be place-agnostic; in fact, research that was done in the regional context was deemed not suitable for publication in top-tier journals. One of the faculty members at IIM-SO mentioned:

At this stage to be very honest with you we don't need much from the state government. Generally, we would like to be in their good books and that's it.... we don't ask them for much and they also, I think, credit to the state government, they also don't interfere in what we are doing....The guys who matter to us are the fellows on the ground, the collector of Indore and people like that. They are quite cooperative actually.

Despite this, IIM-SO leveraged the region to derive direct and tangible benefits for its core research and teaching activities, and to experiment with innovative ideas related to research and teaching. As one of the established IIMs, there was significant demand from the government to engage with regional stakeholders for skill development, advisory and other related activities. In many cases, engagement through such mediums were commercial in nature and allowed IIM-SO to continue its financial independence. Several faculty members also described their collaborations with the regional stakeholders to write case studies for teaching and obtain data for research that were helpful to strengthen the research position of IIM-SO. Having attained a certain level of maturity, IIM-SO also leveraged the region as a source of experimentation for new research areas and pedagogies. It's faculty members conveniently structured partnerships with only those that are sophisticated and had the capacity to engage with them, which matured over time to long-lasting partnerships. It had established dedicated initiatives in thematic areas to engage with the region in niche areas. Such separate structural arrangement sometimes can be symbolic to external pressures and can also be mechanisms to resist change. In summary, the engagement with the region for direct benefits and for experimentation of innovative or novel ideas shaped the development of IIM-SO to be a region-influenced university.

iii. SPA-SN

SPA-SN was established in 2008 in a semi-urban region and focussed on the planning and architecture discipline. It was started primarily to cater to the increasing need for urban or town planners in India⁴. Besides a limited number of taught courses in the architecture discipline offered by teaching-focussed universities, prior to the establishment of SPA-SN, there was only one well-established INI that focussed exclusively on both planning and architecture. Thus, SPA-SN, like IISER-SN described earlier, had a sense of novelty associated with establishing a national-level institute of the cadre of INI. Its faculty members expressed pride and excitement for being associated with such a novel national-level initiative. In addition to this, given only a limited number of HEIs in planning and architecture discipline,

⁴Various studies project that the number of cities and towns in India will increase to more than 10,000 by 2021. Along with this rapid urbanisation, a report by the Ministry of Human Resource Development (MHRD) – the same ministry that oversees higher education and establishes new universities and INIs – estimated that India had less than one planner per urban settlement and needed nearly 300,000 planners by 2031.

students did not have enough choice of institutions. As a result, despite being a newly established HEI, there were always enough (high quality) students willing to enrol in SPA-SN due to the associated reputation of being established as an INI and being only the second one in its cadre. This is unlike the new HEIs in management and technology discipline, in which there were seven IITs and five IIMs before the establishment of new ones. Thus, instead of differentiating itself from its well-established counterpart, SPA-SN aspired to compete with it by attracting similar faculty members, getting bigger consulting assignments and increasing its ranking. It viewed its well-established counterpart as a role model or benchmark and had similar national aspirations. Given the above, engaging at the regional level for its research and teaching activities was perceived as counter to such national-aspirations. The faculty members felt that the image of the semi-urban region did not suit that of a national-level institute. Many faculty members mentioned that an institute of this stature should have been situated in a more architecturally rich and urban region. The leadership of the HEI described the institute as “being above” the region rather than being part of it. The following quote from one of the Deans of SPA-SN indicates the above:

The onus is not on SPA-SN to ensure that it is the part of regional development. Now one of our directors asked if we can offer a subject for BMC as well. I told him our faculty will be ready for this but they should not expect us , you want a parking plan we will do it, you come here we work full night and we will do it, this is consulting.

However, such aspirations were far from being realised at the ground-level and the reality was rather different due to several challenges. First, SPA-SN faced significant discontinuity in its leadership. At the time of this study, it did not have a Director for the last three years and many faculty members indicated a lack of trust in the previous Director. This led to significant delays in campus construction, faculty hiring and over all institutional development. Second, it was still grappling with infrastructure and programme related issues due to being allocated less funds than needed for the development of its infrastructure. Third, the region itself was not well-connected to other parts of the country. Access to the HEI was still a major concern due to its remote placement away from the core area of the semi-urban region. Due to the above, even after eight years of its establishment, attracting faculty, stabilising its education programmes and starting research activities was still a major concern.

In such situations, there was an unintended dependency on the region by SPA-SN. The region it was situated in was rich in its landscape and geography with various lakes, plateau and hills. Being an institute in the discipline of architecture and planning, SPA-SN leveraged this richness of region for its various research and teaching activities. Several faculty members described how students worked with the region for field work needed in the course and their own research and consulting projects with the region. The lack of connectivity of the region to other parts of the country also implied a forced reliance on the region for such activities.

Similarly, unlike in other disciplines, there was a lack of a strong national academic network due to there being just one more INI in India in the planning and architecture discipline. Thus, while the other HEIs recruited and depended (for visiting faculty positions) for faculty members in other institutes nationally, SPA-SN was restricted to rely on institutes located in close proximity. The presence of a regional institute in the same disciplinary area in the region was thus particularly helpful in providing the initial infrastructure- and teaching-related support in the initial years of SPA-SN. In many cases regional engagement activities were dependent on faculty capabilities then on institutional competition. Under these circumstances, engagement and support from the region was an important factor that influenced the activities of SPA-SN and developed it as a region-integrated university.

C. Region-as-a-service universities

Region-as-a-service universities are those HEIs in this thesis that did not directly engage with the region for their research and teaching activities. Instead, they leveraged the region for the services and resources needed for their operations such as maintaining campus facilities, organising events, providing administrative or technical staff, procuring materials and developing infrastructure. In such situations, the region was only a place for these HEIs that provided infrastructure, resources and services needed for the HEIs, and helped in increasing their competitiveness with the other HEIs. The availability and nature of these services and resources was an important factor for attracting students and faculty members, and providing a rich campus life and an enriching research and teaching environment to students and faculty (Altbach et al., 2018) . Unlike those of region-integrated universities,

the regions of these HEIs did not have any unique characteristics that could help differentiate the HEIs by breaking traditional academic barriers and prompt regional integration with their mission or culture. Similarly, unlike those of region-influenced universities, the regions of these HEIs did not offer opportunities for collaboration with direct benefits for these HEIs. As a result, these HEIs had developed a national orientation. Instead of differentiating from other HEIs in their respective disciplines, these HEIs competed with them based on factors such as research performance, reputation, rankings and student quality (Marginson, 2006).

IIM-SN and IIT-SN

Of the HEIs included in this thesis, IIM-SN and IIT-SN had developed to be region-as-a-service universities. Both these HEIs were established in a semi-urban region; IIT-SN was established in 2009 and IIM-SN in 2010. Both the HEIs had similar aspirations, norms, and research and teaching activities as those of the well-established INIs in their respective disciplines. Having national and global aspirations, the faculty members had traditional norms for research and teaching. They equated prestige to publishing in reputed academic journals, presenting in international conference, getting research grants or establishing labs, as reflected in the following participant quotes:

So, in that sense we are different, and I don't know whether you have seen the NIRF [National Institution Rankings Framework] rankings. In that also, IIT-SN stands fifth in the teaching. Then in terms of research also, we are amongst the top in the new IITs. So, if you see per capita output of a faculty member that we are far ahead of even established IITs.

Their faculty members felt that the region was not adequately equipped to engage with the HEIs. The faculty members at IIM-SN commented that businesses in the region were small and narrowly-focussed to absorb the benefits of a national-level management institute. Likewise, the faculty members of IIT-SN described the lack of adequate technological readiness and orientation of the regional stakeholders to engage with a research-intensive institution like IIT-SN. Although I did not interact with the regional stakeholders, prior studies (Cohen & Levinthal, 1990; Bekkers & Freitas, 2008; Minbaeva et al., 2003) suggest that organisations that invest in research and development, have long-term and strategic orientation and have experience in working with universities have greater capabilities to absorb external knowl-

edge. However, the faculty members at both these HEIs acknowledged the importance of infrastructure, resources and services from the region as a significant factor for starting academic programmes and attracting students and faculty members. In this way, both the HEIs adopted a non-partisan model of regional engagement where they were not totally detached from the region but were being circumspect about their involvement with the region (Lebeau & Cochrane, 2015). They were both nationally oriented with very little relevance to the region.

Despite these similarities, there were differences between these two HEIs due to various factors. The first factor was the image of the region. IIT-SN was situated in a region that had an image of a fast-developing semi-urban region. It was the only region in India to have two INIs—one in technology and another in management discipline—further improving its image as a hub for academic activities. As a result, IIT-SN was able to attract students, faculty members, and forge partnerships, which influenced wider perceptions of IIT-SN nationally and internationally (Brennan et al., 2018). These were difficult for IIM-SN that was established in a region that was yet to be developed and lacked the image of a developing region. The regional development plan where the permanent campus of IIM-SN was being developed had not materialised, leading to significant delays in construction. The faculty members of IIM-SN indicated that the regional stakeholders did not see IIM-SN as an aspirational institution and needed to be made aware and informed about IIM-SN and its activities.

The second factor was the leadership of the HEIs. At a macro-level, the government, which appointed the Directors of the INIs, found it difficult to appoint Directors for new IIMs. During the time of this study, out of the 20 IIMs, as many as 13 IIMs were functioning without a Director. Well-funded infrastructure and intellectual leadership in areas of strength needs to be adequately complemented with institutional leadership for development of new universities (Altbach et al., 2018). Although the Director of IIM-SN was appointed timely, several of its faculty members expressed concerns with its governance and leadership that impacted a multitude of its activities including programme development and faculty recruitment and retention. One of the participants stated,

How could we have so much attrition level? How could we not have yet stabilized after 6 and half years of the institute being established? We are stabilizing now

because they were more agenda driven by a person rather than overall holistic development for an organization

However, the situation was very different at IIT-SN. Many faculty members emphasised the leadership of the Director as an important factor to develop IIT-SN as a research-intensive institution and its ability to attract research-oriented faculty in the initial years. One of the participants at IIT-SN stated,

So basically, the first factor [for the development of this institute] is to construct the research and development infrastructure. That is provided by our Director. He has supported us by providing the academic facilities so that makes us very proud to be here.

Due to its focus on research excellence, IIT-SN had the largest PhD programme amongst all IITs. In fact, it had overtaken the well-established institutes in one of the well-known global rankings. Thus, for both the HEIs, leveraging the region-as-a-service needed to be complemented with a focus on faculty recruitment, research excellence and institutional leadership for their development and competitiveness.

Appendix 3: Contributions to the field of HE research in a South Asian context

The features of education such as organisation of education, variability in educational programmes and diversity of interests of various stakeholders involved make country-specific studies or comparative studies across countries an important feature of educational research (Council et al., 2002). Studies of this nature contribute to the development of context-specific knowledge of the country or region, and to the global scholarship of HE. Despite the need for such studies, Jung et al. (2018) suggest that HE research has received insufficient attention in many South Asian countries, including in India, to make it an independent field of study. They emphasise the need for home-country researchers to study HE systems and take it to the international community by engaging with global HE research communities and publishing in international peer-reviewed journals. I have presented some of the findings at the BERA Annual Conference, 2017, and have engaged with several HE researchers within and outside the University College London (UCL) during the course of the thesis. Hence, the thesis, being based on the Indian HE system that is carried out at the UCL, helps in advancing the legitimacy of HE research from South Asia.

To my knowledge, this thesis is hitherto the only study on regional engagement of universities in India. I have been able to validate the theoretical framework for institutionalisation of regional engagement. The findings reconfirmed the four factors proposed by Pinheiro et al. (2012) and found two additional factors—regional embeddedness and government enablement—for the new HEIs in India to leverage regional engagement in their evolutionary paths. Although the theoretical framework has been based on studies on regional engagement of universities in several countries, including Brazil, Chile, England, Finland, Poland and Moldova, the validation and extension of the same to India is encouraging for researchers who would like to focus on the Indian HE system. I believe this opens up opportunities for several studies in HE to be internationalised to the Indian context, validate many of their hypotheses and theories, and make them more generic and rigorous.

In India, research in HE is still in infancy stage largely due to lack of any policy efforts and/or any teacher training needs in HE. Perhaps motivated by the sheer scale of the HE system and regulatory control over universities in India, the few articles on HE

that appear in international journals by scholars from India and by international scholars interested in Indian HE are on reforms, structure and design of the national-level HE system (Agarwal, 2006; Gupta and Gupta, 2012; Altbach, 2009), and a few on the financing of different aspects of it (Tilak, 1992; Prakash, 2007). Independent research on education in India has been focussed on pedagogical and teaching-learning processes and practices at the school level with a few selected social sciences departments in universities and research institutions carrying out a good proportion of research on HE (Varghese, 2018). Most of the research in HE in India has largely been done in recent times due to interest from other departments in the topic of education rather than by education researchers. I am hopeful that this thesis and its findings will provide the required impetus to improve indigenous HE research from India.

Summary of areas covered in the EdD programme

The nature of the various stakeholders of universities (e.g., businesses, students, society, and working professionals) and their needs and expectations of universities have not only gone through major shifts in recent times but have become more dynamic than ever. This, combined with the rise of neoliberalism and massification in higher education (HE), has altered the relationship between universities and their stakeholders. National HE systems and universities can no longer insulate themselves from these changes. Instead, these changes have led to continuous transformation of universities and their fundamental roles in research and education. These have generated significant scholarly interest leading to the emergence of various conceptual frameworks, such as the third mission, public and regional engagement, and entrepreneurial universities, in the academic literature. My work in the EdD was situated in these contexts in India with a particular emphasis on the changing nature of interactions between universities and their stakeholders, and its implications on the transformations of universities as a whole and its different constituencies and activities. I have investigated the tensions between the university as an organisation that has a set of objectives and resources, is subject to market forces and competition, and is constantly looking for financial resources, and as an institution embedded in social and cultural contexts with norms of open intellectual enquiry and debate. Methodologically, I have used both qualitative and quantitative techniques in my studies, and semi-structure interviews, discourses and documents, and survey-based instruments for data collection.

Areas of work covered in the course work and the IFS

In my first study for the course on Foundations of Professionalism, I delved into the area of student professionalism. I used the term “student professionalism” to imply the methods in which management students learn about management as a profession and professionalism, and transition from being students to management professionals through formal and informal methods of learning. Situated in the context of the rapid growth in the demand for management education in India, this study analysed the role of business schools (b-schools) in developing student professionalism among graduate-level management students in India. The learning objectives in student professionalism are on students’ ability to rethink themselves as part of a new professional life and the relevance of the formal and informal knowledge acquired in the context of a professional workplace. From a theoretical perspective, I analysed a range of teaching and learning concepts, such as situated learning, case-based teaching and peer-based learning, to develop student professionalism. The study investigated the challenges faced and the various approaches adopted by b-schools to develop student professionalism. I examined the role of practitioners, peers, faculty members and school administrators in helping b-schools overcome these challenges. Based on the distinct needs of individual students or small groups of students, I argued for a customised approach by b-schools to develop student professionalism. I suggested that providing a platform for students to create an individual learning portfolio for their professional learning can be more effective than a standardised approach for all students.

Continuing my interests to investigate the interactions between the university and its stakeholders, I shifted my focus from students to analyse managers’ interactions with b-schools. Besides helping students transition to management professionals, as explored in the first study on my EdD, b-schools can strengthen the links between management research and managerial work by strengthening the research-teaching nexus in Executive Education Programmes (EEPs). Management research can enrich EEPs by providing unique insights into organisation’s problems or challenges, and can be combined with current or emerging trends of specific industries or sectors to create new EEPs. Thus, in my study for the Institutional Focused Study (IFS), I analysed managers’ interactions with b-schools to leverage management research to improve managerial work. I investigated the mechanisms used by

the managers and the motivations, and the constraints faced by managers to leverage both codified and tacit management research. Based on interviews with five members of the top management and survey responses of 56 managers of an organisation in India, I find that the managers considered leveraging management research for (i) individual learning, (ii) indirect application to their work, and (iii) establishing credibility within the organisation. I discussed the links of such motivations with the management innovation activities carried out by the managers. Subsequently, I analysed the findings to explore how managers' considerations can aid or hinder the use of inquiry-based learning (IBL) in EEPs, and in establishing links between management research and managerial work. IBL—an inductive learning methodology—can be useful to combine research and teaching in EEPs, and thus, link research with managerial work. In EEPs that use IBL, this link is established and maintained through the process of application, induction, and reflection. I analysed if the two defining features of IBL—focus on individual participants and close connection of learning with the context of the participants—align with the managers motivations for leveraging management research. The analysis indicated that the EEPs need to balance various dualities in managers' considerations to combine management research with teaching, and thereby, establish links between management research and work.

Having explored the implications on teaching or learning in b-schools to facilitate the transition of management students to working professionals and to make management research relevant to managers, I shifted the focus in my next study to understand the interactions of entrepreneurs with universities. While the earlier studies analysed the formal and informal teaching and learning methodologies of b-schools, this study investigated the transfer of knowledge from universities to entrepreneurs through spillover effects. Spillover effects are externalities in activities or processes done by one entity or individual affecting those who are not directly involved. University knowledge spillover (UKS) is spillover caused by any new, valuable knowledge generated in universities, which becomes publicly accessible. UKS effects contribute to enhancing knowledge richness of the context and, thus often lead to increase in entrepreneurial activity. Applying these concepts to interviews with five entrepreneurs in India during the two courses on Methods of Enquiry in the EdD, I investigated the factors that influenced their interactions with universities and leverage UKS effects. I conceptualised

UKS as a sociocultural phenomenon of knowledge transfer, and applied knowledge transfer theory to analyse the transfer of knowledge through UKS. The knowledge transfer theory suggests the role of knowledge context, relational context, and recipient context to explain the transfer of knowledge from source to recipient. Using phenomenology as a research methodology, I find that three key constituents could be used to describe entrepreneurs' experience of interacting with universities: (i) constraining, (ii) socially fulfilling, and (iii) complex and disappointing. Five factors, namely, (i) mismatch of execution focus, (ii) abstractness of knowledge, (iii) opportunity to create social good, (iv) credibility with top management of the university, and (v) lack of familiarity with university system, influenced interactions between university and entrepreneurs across the three constituents of experience. Despite being an exploratory study with five entrepreneurs in India, this study provided a complementary perspective about interactions between universities and their stakeholders by extending the scope of analysis from students to entrepreneurs.

The above studies on the interactions of managers, students and entrepreneurs with universities opened up several new areas of research on four dimensions. First was to go beyond specific stakeholders to a geographic contextualisation of stakeholders at the local, regional or national levels, and understand their interactions with universities. The second was to extend the analysis from transformation of specific activities and functions within universities to institutional transformation of universities as a whole. The third was to go beyond management education to a wider set of disciplines in higher education. The fourth was to shift the focus of analysis from their stakeholders to the universities themselves. My thesis expanded my work in the EdD on all the above dimensions.

Areas of work covered in the thesis

Higher education in India has expanded rapidly over the past two decades. In such contexts, expanding out-adding new universities-and expanding up-adding new programmes or increasing enrolments in existing universities-are necessary and competing agendas. Besides the distinct role of different independent stakeholders in transforming different aspects of well-established universities as explored in the above three studies, regions and regional stakeholders can help in fulfilling such agendas by shaping the institutional transformation

of new universities. Economically developed regions can help universities attract and retain faculty, provide funding opportunities, increase student enrolments, and provide social capital support in the form of networks. Thus, furthering my understanding from the previous studies in my thesis, I investigated the role of the region and regional engagement on the development of new universities in India, and the openness of new universities to engage with the regions. I problematised the university-region relationship to understand how a new university responds to the expectations and demands of the region, and how it leverages regional engagement for the development of its research and teaching missions. Unlike the previously discussed, I carried out the analysis from the perspective of the universities and excluded the perspectives of the regions. The study was carried out in seven single disciplinary HEIs in India. I collected the data by conducting semi-structured interviews with seventy-three faculty members in the HEIs, and from official documents, media reports and opinion pieces about the HEIs.

Conceptually, I explored path-dependent systems and the frameworks associated with the institutionalisation of regional engagement of universities. Path-dependent processes and systems are those which are characterised by non-ergodicity-an inability to shake free of history. In order to identify the new HEIs as path dependent, I traced back their evolution to a particular set of historical events and decisions, and examined how these events and decisions themselves are contingent occurrences that cannot be explained on the basis of theoretical conditions and had substantive long-run effects on the future path of the new HEIs. Based on such an analysis, I argue that new universities go through a process of 'evolution' that is distinct from the process of 'transformation'. I find that the initial conditions and decisions of the new HEIs can lead to reactive sequential events with effects that are hard to shake off, making their evolution path dependent. Based on the findings of the thesis, I identified three distinct evolutionary paths for the new HEIs-canonical path dependent, evolutionary path dependent and non-path dependent. I showed that the new HEIs on each of these paths leveraged the region differently for their own development.

Another important area of study in the thesis was the level of openness of the new HEIs to leverage the regions for their development. Using the conceptual framework about institutionalisation of regional engagement of universities, I investigated the tensions and

challenges faced by the new HEIs for leveraging contributions from the regions, and the factors that shaped their openness to engage with the regions. I find that the varied goals of the faculty members in new HEIs and their beliefs about the regional context influence their openness to engage with the region, and build heterogeneity in their activities around the evolutionary paths of these HEIs. Three antecedents—historical relational networks, threshold resources, and institutional legacies—influenced the tensions and challenges faced by the new HEIs to leverage the region during their evolutionary paths.

In summary, my first stream of research done over three studies during the course work and IFS, focussed on three distinct stakeholders—students, entrepreneurs, and managers—of universities. The emphasis in these studies has been on the perspectives of the stakeholders to examine what universities can do to establish effective links with their current or future work. Subsequently, I expanded my research focus from independent stakeholders of universities to relationships between the regions and universities as a whole, and its different constituents. This helped me develop a well-rounded and comprehensive perspective about the mutual, systemic and ongoing interactions between universities and their external stakeholders.