Mechanisms of Governance and Knowledge Sharing Behavior

ABSTRACT

Understanding how formal and informal mechanisms of governance produce a combined effect on the knowledge sharing behavior of organizational members is a problem which is yet to be resolved in organization studies. Contradictory and inconsistent findings have so far prevented the identification of a set of constructs that can be used to explain the causal linkages between governance decisions and individual knowledge sharing behavior. We addressed this problem through an inductive, multiple-case study of organizations from different industries. We found that, consistently across the cases, three dichotomous theoretical dimensions explicated two opposing patterns of relationships –one on each side of the dichotomy – whereby: (1) a condition of *cognitive and normative alignment/misalignment* of individuals mediated the influence of (2) *concerted/unconcerted governance* on (3) *effectual/ineffectual knowledge sharing* behaviors. By modelling these dimensions and their interrelationships, we are able to lay down the foundations of a theoretical framework for the governance of knowledge sharing in organizational settings.

Keywords: *Governance mechanisms; knowledge sharing; case study.*

INTRODUCTION

Knowledge sharing – the exchange of information, know-how, insights and feedback between individuals[1] – plays a crucial role in organizational life (Foss et al., 2010; Wang et al., 2014a). By

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[1] Although the terms *knowledge sharing* and *knowledge transfer* have occasionally been used interchangeably (cfr. Hansen, 1999, 2002; Kane, 2010; Kane, Argote, & Levine, 2005; Osterloh & Frey, 2000; Tsai, 2002), in this paper we specifically refer to knowledge sharing as the exchange of knowledge between individuals (Foss, Husted, & Michailova, 2010; Wang, Noe, & Wang, 2014a) – as opposed to the transfer of knowledge between units or organizations (Argote & Ingram, 2000).

sharing what they know and learn, individuals foster their ability to seize new opportunities (De Clercq, Dimov, & Thongpapanl, 2013), develop unifying perspectives (Boland Jr & Tenkasi, 1995), and sustain wider organizational processes of knowledge creation (Dunn, 2017; Nonaka, 1994; Wang, 2016), transfer (Argote & Ingram, 2000), and integration (Venturini, Ceccagnoli, & van Zeebroeck, 2019). Shared knowledge is leveraged by groups and teams to build common, higher-order knowledge bases (Gupta & Govindarajan, 2000; Nonaka, 1994; Tsoukas & Vladimirou, 2001), which underpin organizational capabilities and performance (Argote & Ingram, 2000; Tsai, 2001).

Despite the crucial role knowledge sharing plays in organizations, its governance is still an unresolved problem in both theory and practice. Specifically, we lack a complete understanding of how organizations can devise different *mechanisms of governance* – that is, formal and informal aspects of organizing that can be purposefully designed, deployed, and maintained to attain desired outcomes (Foss et al., 2010) – to influence the knowledge sharing behavior of individuals. A growing body of research has so far looked at this problem from a narrow perspective, examining one or a few mechanisms of governance at a time. Such an approach has contributed valuable initial insights, but it has also produced contradictory and inconsistent findings, leading to a fragmented overall understanding of this phenomenon. We have learned that knowledge sharing behavior can be influenced by a range of formal and informal mechanisms – for example, informational networks (Dyer & Hatch, 2006; Hansen, 2002; Tsai, 2002), monetary rewards and promotions (Osterloh & Frey, 2000; Siemsen, Balasubramanian, & Roth, 2007), human resource management systems (Cabrera, Collins, & Salgado, 2006), organizational design (Cummings, 2004), and leadership (Srivastava, Bartol, & Locke, 2006). Even so, we are still unable to explicate the causal linkages between governance decisions and individual knowledge sharing behavior through a set of general, theoretical constructs and

relationships. Crucially, we do not know exactly how different governance mechanisms interact with each other to produce a combined effect on the knowledge sharing behavior of individuals. Therefore, we asked the following research question: *How does the interplay between formal and informal governance mechanisms influence individuals' knowledge sharing behavior?* We addressed this question through an inductive, multiple-case study of seven organizations with different characteristics in terms of geography, industry, size, and organizational settings.

We contribute to the literature on knowledge sharing in organizations in three main ways. First, our emerging model lays down the conceptual foundations of a theoretical framework for the governance of knowledge sharing by identifying key themes and dimensions involved in the relationship between organizational governance and knowledge sharing behavior. In particular, the model highlights the mediating role of cognitive and normative alignment as the *trait d'union* between governance provisions at the organizational level and consequent behaviors at the individual level. Second, the study improves our understanding of the interplay between formal and informal mechanisms of governance by showing that, (1) when deployed in a concerted way, a set of three mechanisms (rules and procedures, knowledge management activities and routines, and corporate culture) exert a complementary, positive influence on individual dispositions and behaviors towards the attainment of desired organizational outcomes, whereas (2) the unconcerted deployment of the same mechanisms generates an unfavorable condition of misalignment of individuals and ineffectual knowledge sharing behaviors. Third, our findings advance the debate on the impact of organizational designs and structures on knowledge sharing (Černe, Nerstad, Dysvik, & Škerlavaj, 2014; De Clercq et al., 2013) by showing that both centralization and decentralization can be employed as design principles without negative effects on knowledge sharing behavior, as long as cognitive and normative alignment is maintained via provisions of concerted governance.

THEORETICAL BACKGROUND

The Influence of Formal and Informal Mechanisms of Governance on Knowledge Sharing

The social and relational features of knowledge sharing imply that an individual's disposition to provide or receive knowledge is influenced by factors such as motivation (Quigley, Tesluk, Locke, & Bartol, 2007; Wang et al., 2014a; Wang & Hou, 2015), voluntary communication (Cabrera et al., 2006; Michailova & Minbaeva, 2012), and norms of reciprocity (Gächter, von Krogh, & Haefliger, 2010; Konstantinou & Fincham, 2011; Li, Zhang, Zhang, & Zhou, 2017), as well as the ability and opportunity to share (Reinholt, Pedersen, & Foss, 2011; Siemsen, Roth, & Balasubramanian, 2008). Since each knowledge exchange depends on the coordinated choices and initiatives of at least two individuals, it is particularly challenging for organizations to control knowledge sharing, and direct it towards organizational goals (Davenport & Prusak, 1998; De Clercq et al., 2013; Turner & Makhija, 2006). In the absence of effective direction, individuals tend to hoard their knowledge, or share it selectively, and mainly for the purpose of securing personal gain (Evans, Hendron, & Oldroyd, 2015). This is especially the case when the knowledge being shared is likely to confer competitive advantage (Davenport & Prusak, 1998).

Consequently, scholars have sought to understand how formal and informal mechanisms of governance can be employed by organizations to influence the knowledge sharing behavior of individuals. Formal mechanisms include job design and organizational structure (Foss, Minbaeva, Pedersen, & Reinholt, 2009), policies, reward and punishment schemes (Siemsen et al., 2007; Wang et al., 2014a), information systems (Tsai, 2002; Zheng, Yang, & McLean, 2010), rules and procedures (Bloodgood & Morrow Jr, 2003; Michailova & Husted, 2003; Schulz, 2001; Söderquist, 2006), and mechanisms of control and coordination in general (Tsai, 2002). By contrast, informal mechanisms are semi-permanent aspects of an organization, traits that usually

prove more difficult to change in the short term, such as style of leadership (Srivastava et al., 2006), group and network relations (De Clercq et al., 2013; Kane, 2010; Kane et al., 2005), social capital (Willem & Scarbrough, 2006), and elements of the organizational culture such as shared norms, values, and beliefs (Bock, Zmud, Kim, & Lee, 2005; Michailova & Minbaeva, 2012).

Evidence of the impact that *formal mechanisms* have on knowledge sharing between individuals is often inconsistent and contradictory (De Clercq et al., 2013; Schminke, Ambrose, & Cropanzano, 2000). Some empirical studies have shown that mechanisms such as rules, formalized processes, evaluation policies, training schemes, promotions and other incentives enhance knowledge sharing (Wang & Noe, 2010). Similarly, a formalized work environment and clear vision statements (Söderquist, 2006), as well as rule-based, structured, and routinized procedures (Schulz, 2001) have been found to effectively support knowledge management activities, and encourage a more efficient flow of knowledge (Bloodgood & Morrow Jr, 2003; Zheng et al., 2010), whereas more unstructured processes tend to be perceived by members as relatively ineffective, and can make them reluctant to share knowledge (Michailova & Husted, 2003). However, these findings are counterbalanced by opposing evidence that decentralized structures result in greater facilitation of knowledge processes (Hansen, 1999; Zheng et al., 2010). Similar contradictions emerge in relation to the effect of incentives and rewards. Some investigations have shown that both group and individual incentives encourage knowledge sharing (Siemsen et al., 2007; Wang et al., 2014a), and others conclude that rewards are an insufficient mechanism which can even be detrimental to the inclination to share (O'Dell & Grayson, 1998).

These inconsistencies suggest that organizations cannot attain desired outcomes in terms of knowledge sharing behavior by relying solely on formal mechanisms of governance. The important role played by *informal mechanisms* has been observed in studies of cultural norms and

beliefs (Bock et al., 2005; Michailova & Husted, 2003; Michailova & Hutchings, 2006; Michailova & Minbaeva, 2012), styles of leadership (Srivastava et al., 2006), identity (Kane, 2010; Kane et al., 2005), and trust (Andrews & Delahaye, 2000; De Clercq et al., 2013). This body of research has shown that a weak or fragmented corporate culture does not encourage the embracing of an organization's norms and values by its members (Tagliaventi & Mattarelli, 2006; Wang et al., 2014a). On the other hand, a strong, unifying culture that holds an organization together enhances the effectiveness of knowledge processes (Cameron & Quinn, 2011), especially when individuals internalize the values promoted by the organization (Michailova & Minbaeva, 2012) and become increasingly autonomous in regulating their conduct along accepted behavioral patterns (Bock et al., 2005).

A positive impact on knowledge sharing has also been attributed to informal channels and modes of communication and self-organized informal networks (O'Dell & Grayson, 1998) that enhance the effectiveness of knowledge exchanges (Tsai, 2002). Informal mechanisms such as style of leadership, trust, social identity, and goal congruence may also play a key role (Boland Jr & Tenkasi, 1995; Willem & Scarbrough, 2006). Srivastava et al. (2006) found that an empowering leadership style increased both the opportunity and need for knowledge sharing for individuals as they sought to solve problems and make decisions. Other studies have underscored the importance of sharing a common social identity (Kane, 2010; Kane et al., 2005) and similar goals (De Clercq et al., 2013), as well as work climates that nurture trust and collaboration, making team members more likely to engage in knowledge sharing (Andrews & Delahaye, 2000; De Clercq et al., 2013).

The Interplay between Formal and Informal Mechanisms

The work mentioned above advances substantially our understanding of the role of different

types of governance mechanisms when these are considered separately. However, it falls short of clarifying how formal and informal mechanisms interact with each other to produce a combined influence on individuals' knowledge sharing behavior. Initial hints of an important interplay between formal and informal governance have been offered by a few empirical studies. Using extensive data from cross-team collaborations in twelve global corporations, Söderquist (2006) found that combinations of centralized knowledge management structures and functions (formal mechanisms) and clear vision statements (informal mechanisms) had a positive impact on exchanges of prevalently tacit knowledge between new-product-development teams (Söderquist, 2006). Analogous insights were provided by Quigley et al. (2007) using simulations of knowledge exchanges between dyads of participants (a provider, and a receiver of knowledge) for the purpose of strategic decision making. Their study showed that incentives alone (formal mechanisms) had a weak influence on knowledge sharing, but that the influence increased after – and only after – provider and receiver had developed mutual norms for knowledge sharing (informal mechanisms). Finally, Wang et al. (2014a) attempted to tackle previous contradictory evidence of the impact of various governance mechanisms on knowledge sharing by examining the role of systematic encouragements to share knowledge (informal mechanisms) and schemes of evaluation and reward (formal mechanisms). Apart from reporting unequivocally positive relationships between the deployment of these mechanisms and knowledge sharing behavior, the authors stressed that further empirical research was needed to understand how formal mechanisms combine with informal ones to exert a joint influence on individuals' intention to share.

Overall, our review reveals that so far, findings on the influence that formal and informal mechanisms have on the knowledge sharing behavior of members have been fragmentary and often contradictory (Černe et al., 2014; Wang, Wang, & Liang, 2014b), and that more research is

needed to uncover how formal and informal mechanisms interact with each other to produce desired knowledge sharing behaviors. Despite the growing attention paid by management research to the role of specific formal and informal governance mechanisms, we do not know enough about the interplay that exists between them, or how different types of mechanisms interact with each other to exert a combined influence on individuals' knowledge sharing decisions and behaviors (Wang et al., 2014a). It is important to address this problem, from both theoretical and practical perspectives. From the point of view of theory, contradictory and inconsistent findings have prevented the identification of a set of theoretical constructs, factors, and relationships that can explain the causal linkages between governance decisions and individual knowledge sharing behavior. In terms of practice, the impetus is to provide organizations with precise, prescriptive indications of how different mechanisms of governance should be deployed, and whether and how their synergistic interplay may direct knowledge sharing behavior towards desired organizational goals.

METHODS

Research Design and Case Selection

To answer the research question and inductively generate new theoretical insights into the governance of knowledge sharing, we applied an analytical logic of replication and comparison across multiple case studies (Eisenhardt, 1989b; Yin, 2013). Our intention to investigate general, fundamental aspects of the interplay between multiple mechanisms of governance and their combined effect on knowledge sharing, led us to sample a diverse range of cases theoretically (Glaser & Strauss, 1967). In particular, we selected organizations with very different characteristics in terms of geography, industry, size, and organizational settings to confirm or refute our observations iteratively. This improved the robustness and transferability of our

findings, and ensured that the emerging constructs and relationships could be corroborated by cross-case similarities and differences (Eisenhardt, 1989b; Pettigrew, 1990). Notwithstanding the theoretical and methodological interest in diverse cases, we chose not to sample organizations operating in high-velocity, knowledge-intensive industries, in order to sift out influences from exchanges with the external environment which are typically more frequent and intense in those settings (Eisenhardt, 1989a; von Nordenflycht, 2010). This enabled us to focus instead on the relationship between governance mechanisms and knowledge sharing behavior as it unfolded within the cases. Therefore we selected three small firms from the real estate, tourism, and retail industries, and four departments of large organizations in construction, higher education, and hospitality. Table 1 reports details of the case study organizations, the units of analysis, and data sources.

The fieldwork lasted three years, during which period we aimed to identify cases in which individuals showed positive dispositions towards knowledge sharing and also cases in which individual dispositions were negative. In the first year we studied the first case (Calbey), which enabled us to draw theoretical insights and make methodological choices that guided the remainder of the research process. We then added four new cases in the following year (Lynx, Mercury, Mulberry, and Winio), and another two in the third and final year of fieldwork (Castor, and Moist), when we reached theoretical saturation (Glaser & Strauss, 1967).

INSERT TABLE 1 ABOUT HERE

Data Collection

Given the relevance to our research intent of individual accounts of knowledge sharing experiences, we used 102 one-to-one semi-structured interviews with members of the case study organizations as the main source of data. Interviews were conducted face-to-face (90) and by

telephone (12), and were audio-recorded. We added new informants through snowball sampling (Biernacki & Waldorf, 1981; Patton, 1987; Patton, 2014) until the new data ceased to provide new insights (Glaser & Strauss, 1967). An interview guide – which we designed in English and then translated, adapted and piloted to meet the local specificities of each setting – enabled us to keep data collection within and across the cases consistent. Interviews lasted between 30 and 100 minutes, averaged about an hour, and comprised a mix of predefined open-ended questions and follow-up questions. This semi-structured format enabled us to combine consistency of content with interviewer control over the conversation. We informed participants up-front about the purpose of the study and the scope and format of the interview; we signed a non-disclosure agreement, and clarified that participants could withdraw from the study at any time.

Each interview started with broad questions about the informant's professional background and their previous experience and current role and responsibilities in the organization. In this phase, our interest lay in investigating individuals' overall approach to knowledge sharing, detecting possible evidence of governance mechanisms affecting it, and understanding whether, how, and to what extent those knowledge sharing practices contributed to positive organizational outcomes. Then we probed into reasons, factors, and circumstances that determined their decisions to share or not to share knowledge. In the final part of the interview, we elicited explanatory information and details about key aspects which emerged during the interview (Barriball & While, 1994), and asked for further clarifications to ensure the collection of complete information (Eisenhardt, 1989b; Glaser & Strauss, 1967).

We sought to minimize interviewees' bias in a number of ways. First, we selected, wherever possible, a diverse range of participants (by job title, responsibilities, age, and tenure) and triangulated the interview data by cross-checking across multiple informants, or by using documents and observations (Jick, 1979; Kumar, Stern, & Anderson, 1993; Yin, 2013). Second,

the relevance of the study to their daily experience and our commitment to ensure anonymity motivated interviewees to take part and provide accurate information (Huber & Power, 1985; Miller, Cardinal, & Glick, 1997). Third, we asked questions about concrete facts occurring in current events to minimize cognitive and recall biases (Golden, 1992; Huber & Power, 1985; Koriat & Goldsmith, 2000; Lipton, 1977; Miller et al., 1997).

Data Analysis

The analytical process involved three phases of within- and cross-case analysis. We employed techniques of data coding, reduction, and synthesis to break down the interview transcripts into specific data incidents, and code these incidents so that they could be organized, retrieved, and grouped around themes of theoretical interest (Miles & Huberman, 1994).

In the *first phase* of analysis, we focused on information about the members' overall knowledge sharing behavior in each case, and then compared evidence across the cases to highlight differences and similarities. We examined to what extent members of the units engaged in knowledge sharing, and whether knowledge sharing appeared to be practiced widely and consistently across the unit. We arranged the codes into homogenous themes and employed techniques of pattern-matching between clusters of data incidents and codes within and across the cases. This led us to identify clear differences in terms of knowledge sharing behavior between two groups of case study organizations – which we called, respectively, Group A, and Group B.

In the *second phase* of analysis, we looked for the antecedents of different knowledge sharing behaviors. As we sought to understand why individuals chose to engage or not to engage in knowledge sharing with other members, we examined members' accounts of their dispositions towards knowledge sharing. As plausible theoretical explanations for different knowledge sharing behaviors started to emerge around a set of specific individual dispositions, we performed

selective coding of the data around fewer themes in each case, regardless of the previous grouping. We then looked for possible patterns of relationships between certain behaviors and similar individual dispositions, and checked the consistency of such patterns of relationships across the cases (Yin, 2013). Again, we found a consistent pattern of relationships between similar individual dispositions and similar knowledge sharing behavior in the Group A organizations, and an opposite pattern of relationship in the Group B organizations.

In the *third and final phase* of analysis, we looked for antecedents of individual dispositions towards knowledge sharing and found relevant quotes which indicated the supporting or hindering role of certain mechanisms of governance. At this stage, groups of codes started to form around theoretically relevant themes such as "observing the rigorous application of rules and procedures", or "applying formal methods of knowledge management." We organized themes and dimensions in lists, tables and diagrams to check the viability of alternative explanations (Miles & Huberman, 1994), and followed an explanation-building logic to tease out theoretically relevant relationships between key constructs (Eisenhardt, 1989b; Yin, 2013). We developed theoretical links between dimensions in one or two cases, and validated and refined them through the remaining cases with the aid of extant literature until we found an emerging model that matched the data closely.

FINDINGS

Through the three phases of analysis, we discovered that three overarching theoretical dimensions and their interrelationships could be used to explain the interplay between formal and informal governance mechanisms influencing individuals' knowledge sharing behavior. The three dimensions are: (1) *Effectual/ineffectual knowledge sharing*; (2) *Cognitive and normative alignment/misalignment*; and (3) *Concerted/unconcerted governance*. In the following

paragraphs, we illustrate these dimensions, together with their underlying themes, and their interrelationships. The whole of the following section should be read in parallel with Table 3, which provides representative data in support of our findings.

INSERT TABLE 3 ABOUT HERE

Effectual/Ineffectual Knowledge Sharing

Effectual/Ineffectual Knowledge Sharing, the first dimension which emerged from our study, reflects differences between two groups of case study organizations (Group A, and Group B) along two dichotomous themes: (1) *Extensive/selective knowledge sharing initiatives and practices*, and (2) *Knowledge sharing behaviors advancing/hindering organizational outcomes*. Group A comprises three cases (Calbey, Mulberry, Mercury) whose members engaged in extensive knowledge sharing initiatives and practices which contributed to advance organizational outcomes. Group B consists of four organizations (Castor, Lynx, Moist, Winio) whose members reported selective knowledge sharing initiatives and practices which either did not contribute to organizational outcomes or hindered them.

Extensive/selective knowledge sharing initiatives and practices. This theme reflects the first differences found between organizations in the two groups. Members from the Group A organizations appeared generally proactive in initiating and fully taking part in knowledge sharing with other members. Informants from Calbey, for example, talked of frequent exchanges of information, insights, and experiences between project managers, which took place in both formal and informal meetings, during and after project delivery. At Mercury, members praised each other for being easily approachable, and willing to share news and insights about the service. Similarly at Mulberry, interviewees referred to other members as being generally helpful

and ready to provide the right information at the right time, so that no barriers were found to slow down the exchange of relevant knowledge between them.

By contrast, members of the Group B organizations provided details of selective and opportunistic approaches to knowledge sharing, which made exchanges between them especially difficult. Exchanges were mostly driven by personal relationships, similarity of roles, or a sense of belonging to informal groups based, for example, on different levels of seniority, or different professional categories. During the interviews, informants from these organizations talked very openly of colleagues who tended to refrain from sharing key information with others, in order to preserve perceived personal advantages. Most of the informants in this group provided candid accounts of knowledge hoarding practiced both by themselves and others to regulate professional rivalries.

Knowledge sharing behaviors advancing/hindering organizational outcomes. This second theme encapsulates differences between the two groups of organizations in terms of the impact that their members' knowledge sharing behavior had on organizational goals. Although desirable organizational outcomes varied across the cases – ranging, for example, from building key competences to solving operational problems or improving collaborative work – the accounts provided by our informants pointed clearly to what constituted a positive or negative knowledge sharing practice in the interest of the organization. The Group A organizations were virtuous in this respect. At Calbey, construction methods were still heavily reliant on handworks, and the sharing of practical experience between project managers, and regular exchanges about issues encountered on their respective projects were widely considered vital to reduce reworks and speed up project delivery. Interviewees from Mercury linked the minimization of customer complaints with regular exchanges of accurate information between teams across the hotel. At Mulberry, informants enjoyed an "open and

collaborative environment" and rapid access to each other's knowledge for the purpose of optimizing the service delivery to travelers.

In the Group B organizations, selective and opportunistic knowledge sharing practices led to widespread conflict and suboptimal results in operations. For example, interviewees from Castor mentioned clashes taking place between members due to fundamental disagreements on what constituted appropriate modes and times of communication. At Moist, similar conflictual dynamics arose from opposing or inconsistent requirements for the presentation of project reports. At Lynx and Winio, inadequate knowledge sharing led to missed learning opportunities, or even hindrance of operational processes.

Cognitive and Normative Alignment/Misalignment

In all of the case study organizations, knowledge sharing behavior was positively or negatively influenced by individual dispositions of *cognitive and normative alignment/misalignment* towards knowledge sharing. This second theoretical dimension subsumes two themes: (1) *Clear/vague understanding of knowledge sharing roles, responsibilities, and relationships*; and (2) *Strong/weak adherence to shared norms, values, and beliefs about knowledge sharing*.

   Clear/vague understanding of knowledge sharing roles, responsibilities, and relationships. Participants form Calbey, Mulberry, and Mercury showed full awareness of their respective responsibilities around knowledge sharing, of the appropriate ways of approaching colleagues, and of the key roles played by some members as facilitators or brokers of knowledge exchanges. At Calbey and Mulberry, certain members were formally tasked with mentoring others about operational procedures, and similar duties were assigned to experienced managers at Mercury. For example, the Training Manager noted that, "in the company, we know who has to conduct certain areas of training for our employees" and the Human Resources Director mentioned that

"when a new hotel opens, there is a 'task force' of experienced managers that help new members of staff settle and share their experience with the new employees." Also, informants from these three organizations clearly described their knowledge sharing responsibilities. Mulberry interviewees provided statements such as "I come straight to one of the Directors and deliver whatever information I have," and "Sales Associates know who, why and how they need to approach when they lack some information about our [offering]." At Calbey, interviewees showed no doubts about the content, scope, and boundaries set for knowledge sharing, as well as their specific responsibilities as both providers and receivers of information. A Project Manager explained that, "when senior managers attend meetings, inspections, seminars or presentations, we must pay close attention to what is said on those occasions, because they represent the formal authority of the organization." In the same vein, a Project Director remarked that "I must certainly report all the facts that can potentially affect my project, but also those that may be useful for colleagues on other projects to bear in mind." At Mercury, interviewees referred to precise 'job instructions' and 'policies' that guided their exchanges with coworkers, and were confident in describing their duties or the duties of others, such as the "responsibility to take compulsory training", or the fact that "the head of each team is responsible for organizing and implementing the induction of a new member of staff."

By contrast, informants from Lynx, Castor, Moist, and Winio appeared selective in the identification of interlocutors or partners for knowledge sharing, and reported using discretionary judgement for determining if, when, and how to share. At Moist, members had 'task completion' as their main mantra and responsibility, and knowledge sharing was instead perceived as a lower priority, because "there's no time for people to transfer their knowledge to others." As a Planning Team Leader put it, "when workload is very high and we are tight on time, we mainly focus on the tasks and this negatively affects the sharing of knowledge and information [about the

project].” The absence of protocols of interaction between employees led to a lack of clarity about knowledge sharing roles and responsibilities, as demonstrated by frequent disputes on access to, or ownership of, information when “site engineers, for example, opposed our monitoring [as project controllers] of their work on site.” Castor informants lamented the “lack of a clear vision of how knowledge is shared across the company,” and feared “loss of ownership and control” over their knowledge. They also mentioned that widespread confusion and ambiguity around roles and responsibilities affected many activities across the organization, including those related to knowledge sharing. At Lynx and Winio, participants often reported situations in which they or their colleagues were uncertain as to whether they had to share knowledge with others.

   Strong/weak adherence to shared norms, values, and beliefs about knowledge sharing. In Group A, strong adherence to shared values, beliefs, and norms on knowledge sharing came through as an important part of these organizations’ knowledge culture. At Mercury, examples of widely shared values and norms were provided by statements such as “it’s how it works here; the hotel is a large team, and a common vision of our targets and values is important for collaboration.” Relevant statements of norms and unwritten codes concerned, for instance, the importance of sharing knowledge to improve customer service. In the words of the Recruitment Manager, “for example, if the front office does not collaborate properly and share complete information with housekeeping, nothing is going to work well for the customer… the rooms are going to be untidy, and possibly we won’t even notice it until the customer complaints.” Mulberry interviewees frequently expressed their willingness to share news and lessons learned with colleagues. They linked their positive dispositions to values shared across the organization in statements such as, “Tourism Managers are happy to share their experiences with everyone else, because they understand the big value that their knowledge brings to the whole company,”

or "the firm has a collaborative environment that values our personal contribution to each other's knowledge." Participants from Calbey displayed similar beliefs about the types of knowledge that it was important to share – specifically, insights about the management of safety and quality in projects, as well as previous experiences of possible failures. Another belief that interviewees consistently mentioned as a fundamental part of Calbey's cultural approach to organizational knowledge was the importance of mutual help and learning as the best way to tackle the increasing complexity of large projects. Further evidence of strong adherence to a company-wide knowledge culture was offered by norms around mentoring and apprenticeship. In general, norms, values and beliefs about knowledge sharing that emanated from a pervasive corporate culture seemed to influence the actions of members of these organizations to a greater extent than personal or group beliefs and values. Although some interviewees revealed that certain project or professional subcultures would justify knowledge-hoarding behaviors, the dominant corporate culture discouraged the exhibition of such behaviors.

By contrast, in Group B, we noted the absence of a knowledge sharing culture. Interviewees in these organizations did not report the sharing of common beliefs or norms about the role of organizational knowledge in their day-to-day work. Instead, they mentioned instances of knowledge sharing which responded mainly to personal views and interests, and claimed that differences in personal 'mindsets' hindered collaboration. The following statement provides a typical example of conflicting values and norms among employees at Moist:

> Different mindsets and working styles make communication less effective. For example, we might advise [some colleagues] with respect to a certain procedure, like earthing for example, and advise them to assign the subcontractor in an early period. They might just refuse [to follow] our advice based on their current mindset and working style, which they have used for several projects. This might not be the optimal choice, as an early

assignment of the subcontractor might be of great benefit, but due to their closed

mindset, they just work based on the style they're used to. (Estimation Team Leader 1,

Moist)

Similar evidence was found at Winio, where participants concurred that group values and norms

tended to coalesce around factors such as professional age, tenure, or background, so that "since

we have different professional backgrounds, we are not able to discuss a topic deeply." In all the

organizations comprising this second group, subcultures appeared to drive behavior and prevent

the adoption of more widely shared norms, values, and beliefs. For instance, at Castor, a "divide

between the old and new generations" undermined mutual trust and created the conditions for

knowledge hoarding.

Concerted/Unconcerted Governance

In our quest for the antecedents of different individual dispositions towards knowledge

sharing, we found that cognitive and normative alignment/misalignment was linked to

concerted/unconcerted governance. This third and last theoretical dimension emerging from our

data subsumes three themes. The first two themes identify formal mechanisms of governance: (1)

Rigorous/lax application of rules and procedures; and (2) *Systematic/casual knowledge*

management activities and routines. The third theme identifies informal mechanisms related to

Pervasive/latent corporate culture.

Rigorous/lax application of rules and procedures. Interviewees at Calbey, Mercury and

Mulberry described their respective working environments as "highly formalized." They spoke

about the rigorous application of internal policies to a range of different aspects of organizing,

such as the employment of "formal protocols of communication" between employees, the strict

dress code, or the compliance with industry standards and regulations. Calbey's policies for the

avoidance of quality issues in construction involved the rigid use of punishments and rewards following periodic inspections. Mercury participants mentioned written policies that regulated format and purpose of coordination meetings, as well as the expected mode and style of communication between employees at all levels. At Mulberry, interviewees described their work environment as strictly compliant with directions and instructions 'given from the top.'

The data from Group B, on the other hand, showed that, for a number of activities and processes, formal policies were either not in place or largely ignored. Castor informants lamented that "there is limited pressure and power from the very top of the company to drive better results," that the "job specifications and contract don't reflect daily tasks and responsibilities," and disagreements originated from the lack of protocols for the exchange of key information in retail operations. Similarly, at Moist, interviewees concurred that formal arrangements such as job title and specifications were often ignored, and hierarchical distinctions were put aside to speed up work and "save time." Participants from Lynx were given a "great deal of freedom in making decisions" and choosing courses of actions, and it was "acceptable to follow the previous line of action" as opposed to specified directions. At Winio, "time pressure" and "urgencies" tended to justify the lack of compliance with formal procedures.

Systematic/casual knowledge management activities and routines. The Group A cases consistently displayed reliance on established knowledge management practices, whereas Group B organizations presented more arbitrary approaches. Members of Calbey constantly referred to long-established protocols for sharing knowledge between project managers and transferring it from project to project. These protocols included quarterly inspections, regular site visits, quarterly seminars and presentations, monthly and half-yearly reviews, monthly newsletters, formal provisions for training and job rotation, and the extensive use of an enterprise information management platform. Mercury had extremely detailed training routines in place for all

employees, and relied on a large number of internal policies and regulations that emanated from industry standards. At the time of our fieldwork, the firm was upgrading its information management system to enable advanced monitoring functions, as explained by the Training Manager: *"We are conducting several projects, one of them is the acquisition of a [proprietary] platform, which will help us to transfer our training system to an interactive format, and we will be able to track all the training activities."* At Mulberry, provisions for induction, compulsory training, and job rotation were mentioned by all interviewees as central to the life of their organization. Other examples of systematic knowledge management regarded the acquisition and sharing of information about new tourist destinations.

In the Group B cases we found limited or no reliance on formal practices of knowledge management. Most knowledge exchanges in these organizations appeared to be driven by individual initiative, dynamics of personal relationships, or the occurrence of critical events. At Castor, "informal communication is mostly used for rough issues and day-to-day activities, since most of us know each other" and "formal processes are not necessarily used for sharing knowledge, unless it is something very important that needs to be discussed in a meeting or so." At Moist, the Project Controls Manager said that "people who have experience sit with other employees and present what they learned about different cases and projects – for example, the timeline of the job, how it is done, the workflow – however, there is no official process for the transfer of this knowledge," and the Estimation Team Leader explained that "the only time when knowledge sharing becomes compulsory and people have to listen is whenever there is a major obstacle that might have a large impact on costs or the cash flow." Although members of this organization regarded project reports as essential knowledge capture tools, most of the experience acquired during execution was lost because "the top management does not push for these reports to be produced." Personal email and social media accounts were the prevalent channels of

knowledge exchange at Winio. Employees there perceived physical distance as a barrier to knowledge sharing and tended to prefer to communicate with members to whom they felt closer in terms of age, length of tenure, professional background, or personal relationships. At Lynx, despite the availability of various platforms and channels for knowledge sharing put in place by the university, employees within the unit kept trying alternative tools without success. They then continued to rely largely on verbal communication, not only for the exchange of key knowledge about the service, but also to clarify the details of tasks and responsibilities.

Pervasive/latent corporate culture. The third and final theme related to governance provisions captures opposite features of the corporate culture in the two groups of organizations. In this respect, the almost complete absence of cultural cohesion found in the Group B organizations was striking. Except for written statements of "the culture, values and objectives of the organization" (Castor) or occasional references to norms in terms of "being collegiate and sharing knowledge and sending emails to the whole team" (Lynx), we did not find any evidence in these organizations of a homogenous corporate culture, or specific cultural elements (such as shared norms and beliefs) that could possibly act as antecedents of effectual knowledge sharing behaviors. Conversely, in Group A, pervasive corporate cultures supported planned modes and channels of knowledge sharing. At Calbey, informants referred to written statements used across the organization about the 'corporate culture,' and the 'style of leadership'. They mentioned that members of the organization could draw on a variety of internal literature to learn about best practices, ethical behavior, 'good and bad habits,' 'team dynamics,', 'team learning', and established criteria for punishments and rewards. Similar evidence of a strong corporate culture informed by principles of collaboration and service quality emerged from interviews at Mercury via statements such as, "we immerse our employees in our corporate culture and tell them about our mission and our principles" or "we teach our values and principles to people from day one."

Mulberry participants referred to values like trust, openness, and mutual respect as enablers of effective collaboration, and stressed that "in our company, we have a community established, which is founded upon collaborative and cooperative practices" and "collaboration is a key element of our culture, to which all members must adhere."

Overall, rules and procedures, knowledge management systems, and corporate culture emerged as macro-categories of mechanisms in the toolkit of concerted governance deployed by the Group A organizations. These categories encompassed a range of formal mechanisms (schemes of rewards and punishments, written policies, manuals, training materials) and informal ones (codes, norms, beliefs, mission statements, and so on). Notwithstanding the differences in the configurations of specific mechanisms adopted by the organizations in that group, the common denominator was the systematic rigor and consistency with which those mechanisms were deployed, and the fact that such concerted deployment led to simultaneous cognitive and normative alignment of members.

AN EMERGING MODEL OF GOVERNANCE OF KNOWLEDGE SHARING

The evidence presented in the previous section highlights three dichotomous theoretical dimensions emerging consistently across the seven case study organizations. The explanatory accounts provided by our informants for how the interplay between different mechanisms of governance influenced the knowledge sharing behavior of individuals enabled us to identify specific interrelationships between those dichotomous dimensions, which we outline in an emerging model of Governance of Knowledge Sharing – illustrated in Figure 1.

INSERT FIGURE 1 ABOUT HERE

The model includes the following three dimensions:

(1) *Effectual/ineffectual knowledge sharing.* This dimension captures the ability/inability of the knowledge sharing behavior of members to contribute to desired organizational goals. Effectual knowledge sharing occurs when individuals exchange knowledge with others with the specific intent of pursuing desired organizational outcomes. Ineffectual knowledge sharing denotes, instead, situations in which individuals refrain from exchanging knowledge, or exchange knowledge selectively, either for personal gain or for purposes that are not necessarily related to organizational outcomes.

(2) *Cognitive and normative alignment/misalignment* of individuals about knowledge sharing. This dimension subtends the widespread agreement/disagreement between organizational members about the what, how, and why of knowledge sharing practices and norms. Its cognitive component denotes clear/vague understanding of knowledge sharing roles, responsibilities, and relationships. Its normative component denotes strong/weak adherence to shared norms, values, and beliefs about knowledge sharing.

(3) *Concerted/unconcerted governance of knowledge sharing*. This third and final dichotomous dimension captures the idea that formal and informal mechanisms of governance are deployed in a concerted/unconcerted way. Concerted governance denotes a purposeful interplay and mutual reinforcement between formal and informal mechanisms: rigorous application of rules and procedures, systematic knowledge management, and pervasive organizational culture. By contrast, unconcerted governance results from lax application of rules and procedures, casual knowledge management, and latent organizational culture.

Two opposing patterns of relationship linking together the two sides of these dichotomies can explain how the interplay between formal and informal mechanisms of governance influence knowledge sharing. According to the first pattern (left-hand side of Figure 1), formal and

informal mechanisms of governance are deployed in a concerted, coherent way. Their synergistic effects sustain simultaneous cognitive and normative alignment of individuals around the same, well-established knowledge sharing codes and procedures. Such alignment gives individuals' knowledge sharing initiatives both cognitive substantiation (knowing what to share, with whom, when, how) and normative direction (knowing why to share), and supports effectual knowledge sharing for the organization (this pattern emerged from Group A organizations). According to the opposite pattern (right-hand side of the figure), the same mechanisms of governance are deployed in an unconcerted way, and the random interplay between them leads to a condition of cognitive and normative misalignment of individuals. Specifically, deficiencies and inconsistencies in the deployment of formal and informal governance mechanisms prevent members from developing unifying understanding and acceptance of mutually convenient codes, norms, and procedures. As a result, knowledge sharing initiatives tend to follow the perspective of personal gain or the erratic development of interpersonal relationships, leading to ineffectual knowledge sharing for the organization (this pattern emerged from Group B organizations).

DISCUSSION

We sought to understand how the interplay between formal and informal mechanisms of governance influenced the knowledge sharing behavior of individuals in different organizations. We found that an individual-level condition of simultaneous cognitive and normative alignment (or misalignment) of members linked together governance provisions at the organizational level with effectual (or ineffectual) knowledge sharing behavior at the individual level. Furthermore, a set of specific formal and informal mechanisms of governance play complementary and mutually reinforcing roles in favoring (or preventing) the attainment of cognitive and normative alignment. In this section, we articulate and discuss three main contributions of our study.

Interplay between, and Inseparability of, Formal and Informal Mechanisms of Governance

The first contribution of our study is to explicate the interplay between, and inseparability of, formal and informal mechanisms of governance. Previous studies of the impact that one or a few formal or informal mechanisms have on knowledge sharing have yielded fragmentary and inconsistent findings, leaving us wondering which configurations of governance are more likely to produce desired outcomes. Our model highlights that the governance of knowledge sharing can be successful when three specific categories of governance mechanisms are deployed in a concerted way. Rules and procedures, knowledge management systems, and elements of an organization's culture emerge as chiefly responsible for influencing (both positively and negatively) individuals' disposition to share. Specifically, our findings show that, when deployed in a concerted way, these mechanisms reinforce each other in providing simultaneous cognitive and normative direction to organizational members, and directing their behaviors and practices towards effectual knowledge sharing. To attain desired knowledge sharing outcomes, the organizations in Group A had to combine three coherent and converging interventions of governance: (a) create opportunities for knowledge exchanges through the systematic use of knowledge management tools, systems and routines, (b) enforce the rigorous application of policies, rules, and procedures, and (c) put a cultural premium on desired knowledge sharing behaviors and practices. Although previous research had shown that knowledge management initiatives do not yield positive outcomes in the absence of clear vision and solid strategic control (Söderquist, 2006), we did not know exactly how the combined influence of formal and informal mechanisms translated into individual dispositions. Our study reveals that, when pervasive corporate culture and extensive formalization of protocols and procedures sustain each other, organizational members simultaneously align their understanding and beliefs.

We set out to address our research question knowing that cultural factors (e.g. organizational culture, national culture) play a fundamental role in shaping an organization's knowledge management processes (Cameron & Quinn, 2011; Tagliaventi & Mattarelli, 2006; Wang & Noe, 2010). Our study adds to such knowledge by introducing the theoretical dimension of simultaneous cognitive and normative alignment as the essential precondition for effectual knowledge sharing. The joint coordination of cognitive and normative perceptions among individuals implies that, although often useful to the analyst, the distinction between formal and informal mechanisms is merely artificial, and might prevent both researchers and practitioners from fully appreciating the composite and intertwined nature of governance arrangements. It is impossible to separate culture and cultural elements from other mechanisms. Policies, procedures, rules, mission statements, training protocols are, at the same time, both formal mechanisms of governance and cultural artefacts. Our data does not show preferential causal pathways between either formal or informal mechanisms and the cognitive and normative alignment of individuals. We would certainly have expected the rigorous application of rules and the systematic reliance on knowledge management systems and routines to impact on cognitive dispositions, by clarifying to members what needed to be done, or what was required of them in terms of knowledge sharing. But it was the concerted influence of the three categories of formal and informal mechanisms that determined normative alignment, by clarifying for members expected and desirable actions and behaviors. When those mechanisms were not deployed in a concerted way, the differing, often conflicting beliefs and assumptions of individuals prevailed. Overall, these insights add to existing knowledge of the organizational factors that improve employees' commitment (Michailova & Husted, 2003; Watson & Hewett, 2006) by showing how organizations can deploy high levels of formalization and control and align positive cognitive and normative dispositions of individuals without creating hostile work environments.

Both Centralization and Decentralization Can Lead to Effectual Knowledge Sharing

The second contribution of our study is to help unravel previous contradictory evidence of the impact that certain configurations of governance have on knowledge sharing (De Clercq et al., 2013). Some studies have suggested that decentralized structures, group autonomy, and informal procedures tend to be more effective facilitators of knowledge management processes (Schminke et al., 2000; Schulz, 2001; Tsai, 2001; Zheng et al., 2010). Others, however, have maintained that better knowledge management outcomes are achieved through greater centralization (Bloodgood & Morrow Jr, 2003; Schulz, 2001), and highly structured and routinized processes (Bloodgood & Morrow Jr, 2003). In Group A, the norms and values projected by the organizations onto their members elicited adherence to an organization-wide knowledge culture, while preset protocols and boundaries of interaction encouraged members to align personal contributions and expectations. By contrast, in the Group B organizations, the lax application of rules and procedures and the freedom enjoyed by members resulted in hindrance to key operational processes. The rigorous application of rules and procedures in the Group A organizations seemed to foster knowledge sharing regardless of the varying degrees of centralization. This suggests that both centralization and decentralization can be adopted as alternative principles of organizational design with no obvious drawbacks in terms of governance of knowledge sharing. However, both centralized and decentralized structures should be complemented with specific mechanisms of formal control – such as rules and procedures for knowledge sharing and knowledge management systems and routines – for the specific purpose of enhancing and directing knowledge exchanges. In fact, looking at the impact that different mechanisms had on the knowledge sharing behavior of our informants, we learned that rules and procedures regulating 'what and how to do' seemed to influence individual dispositions more directly than choices of organizational design and

structure could. At Calbey, Mercury, and Mulberry, rigid rules and procedures, and protocols of knowledge management were linked by individuals to ideas of hierarchy, authority, and culture. They were perceived as ways of identifying trusted sources and recipients of shared knowledge (Černe et al., 2014), independently of the structural characteristics of the respective units. These circumstances suggest that while hierarchy and centralization may play a role in facilitating and supporting knowledge management activities (Hansen, 1999), structural designs *per se* do not yield positive direct effects on knowledge sharing, nor do they necessarily provide convenient frames for actions and interaction. Our findings indicate that an organization's structure – whether more or less centralized – may simply act as a container for a variety of other governance mechanisms, some of which are more or less capable of affecting knowledge sharing behavior. But it is the deployment of – and interplay between – those specific mechanisms that either foster or hinder effective organizational processes and activities, including knowledge sharing.

Towards a Theoretical Framework of Governance of Knowledge Sharing

Despite the important advancements made by students of knowledge sharing over the past two decades, we still lack a set of fundamental theoretical constructs that can explicate the causal linkages between governance decisions and individual knowledge sharing behavior. The third contribution of our study is to start laying down the basis for a theoretical framework of the governance of knowledge sharing, by identifying initial dimensions and generalizable descriptions of their causal interrelationships. Central to such a framework is the concept of simultaneous cognitive and normative alignment of individuals, which implies widespread and agreed upon understanding and acceptance of how, why and with whom certain knowledge must be shared. Previous studies have identified three key antecedents of knowledge sharing behavior

in motivation, opportunity and ability (Reinholt et al., 2011; Siemsen et al., 2008). The converging influence of concerted governance mechanisms on the cognitive and normative dispositions of individuals that we have observed in the Group A organizations might represent tangible evidence of how organizations can implement governance decisions to fulfil those motivations, opportunities, and abilities of knowledge sharing. A clear understanding of rules and procedures can strengthen individuals' motivations to share knowledge – especially when such rules and procedures include reference to reward and punishment schemes – whereas the concomitant, systematic use of knowledge management tools and routines creates opportunities to share, and confers on individuals the ability to initiate or take part in exchanges. At the same time, normative alignment between individuals unlocks complementary sources of moral reward by enhancing a sense of social identity and goal congruence (Boland Jr & Tenkasi, 1995; Willem & Scarbrough, 2006). The fact that incentives and punishments were present only in one of the organizations in Group A suggests that cultural mechanisms may substitute for, as well as add to, formal reward and punishment schemes. This is not to say that material incentives and punishments play a secondary or marginal role in influencing knowledge sharing behavior, but they have to be designed in a concerted way with other mechanisms which also contribute to the cognitive and normative alignment of individuals.

Managerial Implications

Our study provides a complementary cognitive-normative rationale for concerted governance provisions, and prompts practitioners to appreciate the subtle interdependences between complementary tools and mechanisms, and their intertwined impact on knowledge sharing behavior. Some degree of formalization must be pursued within concerted governance interventions, in order to reduce uncertainty for individuals about their knowledge sharing duties

and the related benefits (this can be the role of policies, rules and procedures), but the interventions also need to foster alignment on values, norms and beliefs that are relevant to knowledge sharing (De Clercq et al., 2013). The lessons learned through this study suggest that such a cognitive and normative alignment can be achieved in different ways, by employing varying configurations of governance. Our analysis shows that evaluations, incentives and rewards for groups or individuals (Quigley et al., 2007) represent only some of the devices available in managers' toolbox of concerted governance. Also, managers are to be reminded that the deployment of formal mechanisms has important implications for the informal aspects of the organization, because of the very close interdependences between these various mechanisms. Apart from establishing a sense of accountability for knowledge sharing and reinforcing norms of expected behavior, formal mechanisms also contribute to influencing informal aspects of organizing, such as mutual trust, reciprocity, and common identity.

Boundary conditions and Future Research

Opportunities for future research arising from our findings include the testing of the causal relationships outlined in our model, as well as in-depth investigations of the possible processual patterns through which those relationships unfold. Quantitative research designs could identify dependent and independent variables that measure the constructs emerging from this study in separate data sources, in order to minimize the risk of common method bias. Longitudinal studies could employ process research methods to focus on the sequence and pace at which changes in governance affect individual dispositions.

Although we endeavored to diversify the empirical settings in which the governance of knowledge sharing could be observed, our sampling included only organizations from traditional sectors. Further research might assess, for example, whether more knowledge-intensive,

innovation-driven settings fall outside of the boundaries of application of our model, or if

managers in those settings should rely more on informal mechanisms to attain both cognitive and

normative alignment.

Our data collection protocol yielded detailed information on aspects of culture, trust and, to

some extent, identity, but interviews are not necessarily the most effective device to elicit data on

the role and influence of certain informal mechanisms such as style of leadership (Reinholt et al.,

2011), or reputation of leaders. We expect that both leadership styles and reputation might have

contributed to influencing the cognitive-normative alignment of members in the sampled

organizations, but such a role remained largely hidden to our analysis, and could be more directly

examined by future studies that employ alternative methods of observation.

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Table 1. Details of the case study organizations, units of analysis, and data sources

Case study	Description of the unit of analysis	Informants by job title		No. of interviews	Triangulation via
Calbey	The Project Management department (187 employees) of a large construction firm in China which employed several thousand people	Project Directors (2) Project Managers (8)	Senior Project Managers (10)	20	Informant cross-checking Documents
Lynx	The academic training unit (20 employees) of a large university in the UK	Principal Teaching Fellows (2) Senior Teaching Fellows (6)	Administrators (4)	15	Informant cross-checking Documents
Mercury	A hotel (35 employees) owned by a large hotel chain in Russia which employed about two thousand people	Human Resources Director Training Manager Recruitment Manager	Administrator Restaurant Service Manager	5	Informant cross-checking Documents Observations
Mulberry	An independent travel agency in Moldova (35 employees)	Managing Directors (2) General Manager Financial Director Sales Managers (4) Sales Associates (4) Sales Apprentices (2)	Tourism Managers (2) Tourism Associate Office Manager Marketing Manager General Accountant	20	Informant cross-checking
Winio	A small real estate development firm in China (23 employees)	General Manager Financial Manager Engineering Manager Engineering Assistant Head of Office Investment Control Manager	Sales Manager Construction Specialist House Sales Manager Accountant Hydropower Administrator Office Assistant	12	Informant cross-checking Documents
Castor	A small retail firm in Cyprus (80 employees)	Chief Executive Officer Chief Financial Officer Retail Manager Central Store Manager Distribution/Logistics Officer	Brand Manager Marketing Manager Personal Assistant Business Consultants (2) Administrators	14	Informant cross-checking Observations
Moist	The Head Office (300 employees) of a large construction firm in Egypt which employed several thousands of people	Senior Contracts Manager Estimation Team Leader (3) Senior Commercial Manager Project Coordinator Cost Control Director	Project Controls Manager (5) Senior Planning Manager Senior Planner Planning Team Leader Contract Specialist	16	Informant cross-checking Documents Observations

Table 3. Display of representative data in support of our findings

Data from Group A (Calbey, Mercury, Mulberry)	Data from Group B (Castor, Lynx, Moist, Winio)
EFFECTUAL KNOWLEDGE SHARING **Extensive knowledge sharing initiatives and practices** "We share our experiences and lessons learned as thoroughly as possible." (Project Manager 6, Calbey) "[The other three project managers] and I meet regularly to catch up about progress on our respective projects, and help each other with tips and advice if needed." (Project Manager 3, Calbey) "We try to apply our expertise across projects and to help others benefit from our experience." (Project Manager 8, Calbey) "It is so easy to approach the director, for anyone. We all meet and talk with him all the time" (Restaurant Service Manager, Mercury) "I am in a direct line of communication with the general manager and many questions are discussed from different members of the team every day." (Restaurant Service Manager, Mercury) "People are always ready to offer suggestions and share their expertise." (Office Manager, Mulberry) "My employees can approach myself at any minute, and talk about any issues or concerns they may have. Getting to director is not hard at all." (Managing Director 1, Mulberry) **Knowledge sharing behaviors advancing organizational outcomes** "The fact that we meet and discuss issues regularly means a lot for project delivery." (Senior Project Manager 3, Calbey) "An area in which we reuse a lot past experience of colleagues is to avoid reworks." (Project Manager 8, Calbey) "By talking to each other about our lessons learned we were able to modify some construction techniques and methods on [a large] project" (Senior Project Manager 4, Calbey) "[A colleague] shared significant amount of information, [through which] I managed to understand a lot about the hotel. I found that really enabling for my function" (Restaurant Service Manager, Mercury) "I received a lot of one-to-one support from the senior team members [and] I managed to understand the working process relatively quickly." (Restaurant Service Manager, Mercury) "These regular 15-minute meetings allow us to evaluate guest feedback and learn something new." (Training Manager, Mercury) "When I need to create a report about a new destination, other employees help me with their own experiences, perspectives and the information they have." (Tourism Manager 2, Mulberry) "Sales Apprentices learn through daily involvement. The fastest way for them to learn is to sit next to me, and start doing exactly the same things as myself whilst I supervise them." (Sales Manager 1, Mulberry)	**INEFFECTUAL KNOWLEDGE SHARING** **Selective knowledge sharing initiatives and practices** "More senior staff don't share their knowledge… they want to keep an advantage." (Chief Financial Officer, Castor) "Sometimes some employees are unwilling to share their knowledge, believing that [retaining such knowledge] makes them more valuable in the eyes of their managers and more credible than other coworkers." (Brand Manager, Castor) "I know that my colleagues are not trying to keep information to themselves, it's just accidental." (Senior Teaching Fellow 10, Lynx) "One of the administrators who supports me, she is really frustrated at times because one of my colleagues doesn't give her the information she needs." (Senior Teaching Fellow 2, Lynx) "If I do not have a good relationship with another department and I require a piece of knowledge or information from them, they will put me as a second priority and not provide me with what I need in due course." (Cost Control Director, Moist) "I don't communicate very often with colleagues who work on different fields. I usually communicate with people who have similar works with me." (Office Assistant, Winio) **Knowledge sharing behaviors hindering organizational outcomes** "Sometimes some conflicts arise because communication is happening only via phone or emails." (Distribution/Logistics Officer, Castor) "Problems sometimes occur because communication between the offices is not always easy." (Chief Financial Officer, Castor) "It's very difficult to find a bit of information when you need it, or it's difficult to find whom you need to speak with." (Senior Teaching Fellow 2, Lynx) "As a planner, I saw an upcoming problem that will happen in six months' time and reported it to [a project manager]. He ignored my note, saying that I am talking about something very far away in time." (Senior Planning Manager, Moist) "Only about 10% of the times will knowledge be transferred across projects to improve performance." (Cost Control Director, Moist)." "Very often [certain colleagues] do not understand or accept my views, and we have arguments that slow down our respective tasks." (SH Office Staff, Winio) "When we encounter problems, we discuss them to find the solution. […] But we have different opinions, which causes disagreements and delays." (Engineering Assistant, Winio)
COGNITIVE AND NORMATIVE ALIGNMENT **Clear understanding of knowledge sharing roles, responsibilities, and relationships** "For all construction workers and project actors, mentoring is the main way to learn new knowledge. So we must organize and oversee mentoring all across the site." (Senior Project Manager 1, Calbey) "We have new brick layers and handworkers all the time. Each of them must be attended and their work must be monitored closely to make sure they learn and apply instructions properly. So I need to assign	**COGNITIVE AND NORMATIVE MISALIGNMENT** **Vague understanding of knowledge sharing roles, responsibilities, and relationships** "Some employees were frustrated and felt insecure due to having more responsibilities than it was initially agreed." (Brand Manager, Castor) "Some of our employees feel a bit confused about their roles, because although the company is now run by the 3rd generation, some 2nd generation owners are still involved in the activities and those employees have to follow their orders." (Brand Manager, Castor)

mentors and liaise with them regularly to help address any major problems that may arise." (Senior Project Manager 4, Calbey)

"When a new employee comes to the firm, they receive the induction plan, which describes the training programs that the new employee has to pass and some other activities." (Training Manager, Mercury)

"If any employee in a certain situation, for example if he is experiencing any difficulties or some doubts, or has any questions about his duties, he can contact his mentor or his manager." (Training Manager, Mercury)

"Even now, there are two new Sales Apprentices, who have no experience and, therefore, it is our responsibility to transfer our knowledge to them." (Office Manager, Mulberry)

"When a Sales Manager is not sure about details regarding a certain hotel, they know whom to approach to get that information straightaway. (Tourism Manager 1, Mulberry).

"When I joined the firm, I was told whom to approach if I needed clarifications about our offerings." (Sales Associate 3, Mulberry).

Strong adherence to shared norms, values, and beliefs about knowledge sharing
"I believe that the information that comes from the formal authority of the company has full legitimacy, and can be used safely." (Project Manager 3, Calbey)

"In my opinion, each of us has limited personal knowledge, and if we want to cope with the high workload and the challenges of our jobs, learning from each other is extremely important." (Project Manager 7, Calbey)

"We generally agree that faults and issues in projects cannot be completely avoided. However, we are also convinced that they can and must be minimized. Our senior managers always stress that safety and quality are paramount." (Senior Project Manager 1, Calbey).

"The knowledge given to us through formal channels is certainly valid and legitimate… it's accepted by all." (Project Manager 6, Calbey)

"Everyone communicates well with each other, it is like a family." (Restaurant Service Manager, Mercury)

"There are team members in some units who are getting to know each other well enough and they tend to move to a simpler format of informal communication, but still in the presence of a guest employees talk to and address each other in a formal way [the equivalent of 'Sir'/'Madam' in Russian]." (Training Manager, Mercury)

"Communication is on a relatively open level with the management." (Recruitment Manager, Mercury)

"Mutual respect is a prerequisite in this firm's culture. We communicate in a friendly and open manner with each other." (Tourism Manager 1, Mulberry)

"I arrived two years ago, and they told me, the steps are A, B, C, D ... and instead, then I found out that I could have just done A and D." (Administrator 4, Lynx)

"I work in autonomy. I know the general lines, you know, between which I can move. If there is nothing exceptional, then I know directly what to do and I can decide if something is good for me to go ahead or not go ahead." (Administrator 2, Lynx)

"[Certain colleagues] often use the idea of confidentiality as a barrier, to avoid sharing information. If I go to them in an informal way to request some data, they will refuse based on the fact that this information is confidential." (Project Controls Manager 3, Moist)

"Someone might leave and then a couple of months later, they will find a new candidate for the job. When this person comes they will never really understand what they are supposed to do, because they will not have available the knowledge and lessons learned of the previous employee." (Senior Contracts Manager, Moist)

"It's hard to say what my purpose is. We are all working together." (Engineering Assistant, Winio)

Weak adherence to shared norms, values, and beliefs about knowledge sharing
"There is an increasing fear from the new managers of the company when they need to extract the information that is needed from the older managers." (Business Consultant 2, Castor)

"I believe that sharing knowledge between people of different age groups or different nationalities is more difficult." (Retail Manager, Castor)

"There is a lot of personal politics simply because you haven't got on with the other persons or you haven't enjoyed working with them" (Senior Teaching Fellow 1, Lynx)

"I think people reinforce this artificial divide between teaching fellows and the administrative team." (Administrator 3, Lynx)

"I think the divide [between teaching fellows and administrative team] is unhelpful, because there isn't enough sharing between people because of that." (Administrator 3, Lynx)

"There's very few people that go between and are happy to talk to [both] the teaching fellows and admin team. (Administrator 3, Lynx)

"Some people believe that better knowledge sharing is when the physical layout is an open space to allow collaboration, while others view closed spaces as better." (Project Controls Manager 3, Moist)

"I work mostly with colleagues that I am familiar with, because we understand each other, so even if we have some arguments, which is unavoidable, we tend to focus on the issue instead of the people. If we don't understand each other, we may think that the other is too stubborn. If things get more severe, then they may get isolated." (Engineering Manager, Winio)

CONCERTED GOVERNANCE
Rigorous application of rules and procedures
"The firm organizes quarterly inspections with punishment and rewards. Project managers who are responsible for the projects where the performance of safety and quality control and management do not reach standards will be punished and fined during the quarterly inspections." (Project Director 2, Calbey)

"Project performance and salaries and bonuses are linked. We must follow the company's rules and policies on safety and quality control and management." (Project Director 1, Calbey)

"There is a strict and formal dress code in place and staff members have a uniform." (Administrator, Mercury)

"The industry requires us to follow many standards and regulations, so we are highly controlled and inspected." (Human Resources Director, Mercury)

"The meetings are highly standardized [in their format] and always planned ahead." (Restaurant Service Manager, Mercury)

UNCONCERTED GOVERNANCE
Lax application of rules and procedures
"The absence of proper procedures creates unpleasant situations of conflict as to what it means to be 'timely' [in providing certain information]." (Business Consultant 2, Castor)

"Lack of written rules and procedures is another issue that in my opinion causes issues within our company. The rules are dealt with freedom on behalf of the employees and the control from the management is minimal." (Retail Manager, Castor)

"I have all the freedom to take decisions, I have never been restricted to take any decisions. (Administrator 1, Lynx)

"We mainly have to use space on [a virtual learning platform]. We used to upload information into that. But we don't do it anymore. […] I don't think it has been updated. I mean, from looking at the information on it, I don't think it's been updated in years." (Administrator 3, Lynx)

"I can say that we have a lot of documentation with instructions specific to our department; people have files with plenty of policies and regulations when they work. It is something mandatory, when you join the hotel you get the package of documents." (Restaurant Service Manager, Mercury)

"How we work and deliver tasks is controlled on a daily basis." (Sales Manager 1, Mulberry)

Systematic knowledge management activities and routines
"The company constantly distributes learning materials and organizational documents." (Project Director 1, Calbey)

"We have job rotation, and the firm organizes site visits, quarterly inspections, seminars and presentations." (Senior Project Manager 4, Calbey)

"We are using an enterprise information platform." (Project Manager 5, Calbey)

"There are multi-level and multi-format meetings taking place at each unit, during which the news is shared and the management decisions are discussed." (Human Resources Director, Mercury)

"There is also a training session that helps to solve difficult situations with a guest, let's say, if any feedback returns from the guest, as we say, complaints." (Training Manager, Mercury)

"We a have program in use, called [omitted], maybe you heard about it. This program helps to collect all the reviews, which the guest could have left in social networks." (Training Manager, Mercury)

"When a new Sales Associate joins the organization, they have limited knowledge of our offerings. So the managers guide them and provide them with the knowledge they need as well as instructions on how to ask their colleagues." (Sales Manager 3, Mulberry)

"Every year, at the beginning of the winter and summer tourism seasons, which is usually November and April, we travel to certain destinations and inspect the environment, hotels and entertainments in order to acquire a basic understanding of their key offerings. This information is then given to the Sales Managers and Associates, whose main task is to consult clients and ultimately sell that." (Tourism Manager 2, Mulberry).

Pervasive corporate culture
"Traditionally, learning and sharing knowledge in the construction industry rely on mentoring and apprenticeship. As the fundamental knowledge in textbook lacks practical meanings, you should learn knowledge from experienced mentors." (Project Director 2, Calbey)

"Due to the presence of the senior management in meetings, inspections, seminars and presentations, we pay attention to these formal mechanisms, which represents the formal authority of the organization" (Senior Project Manager 1, Calbey)

"Customer-oriented corporate culture and unified high standards are based on the high quality of the service." (Document 'Company Presentation Brochure', Mercury)

"When I joined I was told a lot about the company, aspects of culture and values." (Restaurant Service Manager, Mercury)

"It's not written anywhere, it is part of the culture. By preserving this feature, we encourage people to improve together and form much more reliable teams." (Administrator, Mercury)

"Relationships are based in the first place on mutual respect, so everyone in the company must be respectful towards others, [and] different opinions and views." (Sales Manager 2, Mulberry)

"The primary value upon which everything works within the company is trust!" (Office Manager, Mulberry)

"Time allocation for knowledge sharing within the firm is not sufficient. There is a focus on the quantity of work rather than quality. The focus is on completing the task due to the huge amount of work which leaves little room for knowledge transfer." (Estimation Team Leader 1, Moist)

"We have busy jobs, so we don't always have time to do things as requested." (Financial Manager, Winio)

Casual knowledge management activities and routines
"It is more like a one-man show here. I am the boss so not everything is written down." (Brand Manager, Castor)

"The company leaves the sharing of knowledge to what employees and managers intend to do, based on necessity, and not because there might be a need in the future that needs to be fulfilled." (Retail Manager, Castor)

"Formal processes are not necessarily used for sharing knowledge, unless it is something very important that needs to be discussed in a meeting or so, but formal processes are used for communication with suppliers, the main companies." (Chief Executive Officer, Castor)

"You learn it most probably by chance, by talking to people" (Administrator 2, Lynx)

"We currently do not have set procedures for transferring knowledge to new hires." (Estimation Team Leader 2, Moist)

"There are no procedures or any process to transfer knowledge to new hires and it is done on a casual basis." (Senior Commercial Manager, Moist)

"To be honest, I am not aware of any handover of knowledge or official knowledge transfer protocol. There is knowledge transfer between the different people where experience is shared through direct interaction." (Senior Planner, Moist)

"Until now, we do not have an official knowledge base." (Project Controls Manager 5, Moist)

"We use more social media such as QQ and WeChat to talk with each other than the official channels of the firm." (Hydropower Administrator, Winio)

"I think few people use [the intranet]. Sometimes, the company requires us to write and post articles, but I feel that many people don't take it seriously. (Accountant, Winio)

Latent corporate culture
We did not find evidence of a well-established corporate culture in the Group B cases. Instead, as an informant from Castor put it:
"[We feel a] sense of individualization and the presence of many different subcultures." (Chief Financial Officer, Castor)

Figure 1. Emerging Model of Concerted Governance of Knowledge Sharing