Empirical Evidence of Collectivistic Knowledge Sharing in China

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Economic sustainability for firms of all sizes and sectors is likely to depend to a large extent on the creation of a sustainable organizational culture built on collaboration, innovation, and adaptability. The importance of knowledge management and knowledge sharing in developing sustainable and higher functioning organizations is well accepted in the existing literature.

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1. Economic Sustainability

Consideration of sustainability as a concept is not a recent phenomenon, but it has, in recent years, become increasingly relevant and has evolved into a fairly well developed theoretical paradigm, most often conceptualized by the use of the three pillars model [1] of ecological, economic, and social sustainability. Separate discussions on ecological, social, and economic areas is a simplistic view [2] and presents a challenge for those seeking empirical analysis of the three pillars due to the inseparable and interdependent nature of factors that comprise them [3][4]. There is however, a consensus on the relevance of concern for sustainability in all three areas. Examples include ecological sustainability as manifested by the discussion of climate change [5]; social sustainability viewed through the lens of the inequality of global wealth distribution and the problems that arise from poverty [6][7]; and, finally, economic sustainability, which is a necessary precursor to addressing both social and ecological sustainability related concerns [8][9][10][11].

Economic sustainability is complicated by the shifting backdrop of global economic interconnectivity resulting in increasingly competitive conditions for organizations operating in all organizational sectors. Economic sustainability for many firms has depended upon their ability to leverage their intellectual capital [12], both formal such as patents and copyrighted materials, and informal such as the knowledge and expertise accumulated by members of the organizations [13]. Likewise, sustainable operations for many firms has depended on their ability to adapt to changes in circumstances both internal and external to their organizations [14][15].

2. Knowledge Sharing Behavior

Knowledge sharing behavior (KSB) is a crucial element of knowledge management systems [16]. The origins of the concept of knowledge sharing can be found in the knowledge management literature [17][18] which is related to the knowledge-based theory of the firm [19]. Bartol and Srivastava [16] define knowledge sharing as “individuals sharing

organizationally relevant information, ideas, suggestions, and expertise with one another" (p. 65), and Wilson et al. [20] consider sharing knowledge as one of the basic processes of group learning along with the storage and retrieval of knowledge. Drawing on the prior work of Nonaka [21] and Polyanyi [22], Bartol and Srivastava explain that knowledge can be shared explicitly or tacitly, and requires effort from the knowledge sharer. Because it involves exchanges among individuals, knowledge sharing is considered distinct from knowledge transfer, which generally describes intra-organizational exchanges of knowledge between entities such as departments, or describes inter organizational movements of knowledge [16]. Yang and Chen [23] provide one of the broadest definitions of knowledge sharing and emphasize the behavioral component, describing it as a "set of behaviors about knowledge exchange which involve the actors, knowledge content, organizational content, appropriate media, and societal environment" (p. 96). Due to its voluntary nature and its contribution to the effectiveness of the organization, KSB is related to organizational citizenship behavior [24].

Methods and approaches to operationalizing and measuring KSB can vary from study to study. In their investigation, Cabrera et al. [25] operationalized KSB according to two types: voluntarily seeking ideas and information from co-workers, and providing insights and ideas to co-workers. Citing the work of Davenport and Prusak [18] who proposed evaluating KSB based on knowledge sharing activities during meetings, Hung et al. [26] measured this behavior according to participant outcomes, which included the number of ideas generated, the usefulness and creativity of the ideas generated, and the perceived meeting satisfaction.

One recent stream of research has attempted to provide insights about organizational reward systems and motivational drivers to achieve effective knowledge sharing. Conclusions and findings, however, have been inconsistent, particularly when it comes to the role of extrinsic rewards. Bartol and Srivastava [16] for example, contended that monetary rewards could be effective for encouraging KSB and predicted that rewards based on collective performance would be an appropriate and effective way to encourage cooperation and engagement among employees. Lee and Ahn [27], however, investigated reward systems to encourage knowledge sharing within organizations and concluded that individual-based reward systems were more efficient than group-based ones. Hung et al. [26] evaluated the impact of intrinsic versus extrinsic motivation on knowledge sharing, which, as explained above, was defined as participant outcomes during meetings. They concluded that economic rewards did not lead to an increase in knowledge sharing, whereas reputational feedback, which results in employees feeling that knowledge sharing enhances their reputation, had a significant positive effect.

Bock et al. [28] studied motivational drivers which determined individual KSB and developed a framework that considered a number of factors impacting the intention to share knowledge, such as "anticipated extrinsic rewards, anticipated reciprocal relationships, sense of self-worth, and three facets of organizational climate" [28]. Their findings suggested that these factors, applied as antecedents to attitude and subjective norms, positively contributed to KSB with the exception of extrinsic rewards which appeared to negatively impact attitudes towards knowledge sharing. For example, Ipe [29] described four factors that influence KSB: (a) the nature of the organizational knowledge; (b) the motivation of the actors to share knowledge; (c) opportunities to share the knowledge; and (d) the culture of the work environment. The fourth factor, organizational culture, is the most critical because the other three factors are embedded in it. Ipe's work built on the prior work of Schulz [30] who examined

the relationship between the production and distribution of organizational knowledge among subunits and concluded that different learning processes were adopted according to the nature of the knowledge, and that this, in turn, affected how the knowledge was shared. Cabrera et al. [25] came to similar conclusions when they evaluated determinants of individual engagement in knowledge sharing between organizational subunits. Among the organizational variables assessed, normative pressures, described as “perceptions of support from colleagues and supervisors towards knowledge sharing” (p. 259), showed the greatest impact. This concurs with the findings of Ryu et al. [31] who attempted to better understand factors which impacted the knowledge sharing of hospital physicians and concluded that subjective norms (the internalization of outside influences) had the greatest influence on their intention to share knowledge followed by attitude.

Chen et al. [32] set out to study the impact of knowledge management systems, organizational climate, and attitude on the intention of employees to share knowledge. Their findings showed that attitude was the most significant factor but that knowledge management systems self-efficacy, and organizational climate, by positively contributing to attitude, indirectly affected knowledge sharing. Witherspoon et al. [33] assessed the antecedents of organizational knowledge sharing, including the intentions and attitude of the knowledge sharer, rewards for knowledge sharing, and the organizational culture. Their findings provided support for a positive relationship between all three areas studied and KSB; furthermore, their findings suggested it is easier to motivate employees to share knowledge in collectivist cultures than in individualist ones.

From a different perspective, the findings of Ton et al. [34] suggest that knowledge hiding, as opposed to knowledge sharing, also affects group performance, but in the opposite manner. Groups in which the members are prone to hoarding behavior when it comes to knowledge tend to perform at a lower level.

To conclude, many studies have been carried out which explore antecedents of KSB and assess factors which positively impact KSB, but few studies have attempted to measure the impact of KSB on other aspects of the organization or on work group performance. There seems to be an underlying assumption in much of the research that KSB is desirable and linked to positive organizational outcomes; however, there is little empirical research which provides support for this assumption.

3. Organizational Agility

Interest in the topic of organizational agility has been gaining attention in recent scholarly research. While distinct from the concept of agile management practices well known in software development [35], OA does share many aspects in common with agile practices, including an emphasis on continuous, iterative improvement cycles; effectively meeting clients’ needs; rapid product development; and flexibility [35][36].

Based on her analysis of 75 scholarly papers published between 1994 and 2018, Walter [37] provides the following operational definition of OA: “Organizational Agility is a learned, permanently-available dynamic capability that can be performed to a necessary degree in a quick and efficient fashion, and whenever needed in order to increase business performance in a volatile market environment” (Walter, 2021, p. 379). Walter, furthermore, argues that OA

should be viewed as a continuum, integrated into the context of the organization and its business environment, and "independent of the industry" (p. 381). Walter identified and described the following four categories of agility: drivers (environmental changes impacting the organization), capabilities (an organization's ability to handle change), enablers (tools, practices, and technology), and dimensions (parts of the organization that must be agile to achieve OA such as management, technology, and the workforce).

As stated in the Introduction, a substantial amount of research exists that deals with agility in the manufacturing sector [38][39] Moreover, there have been studies which put forward practical management tools or de-scribe mechanism for achieving OA cost effectively and in a manner coherent with the organization's strategy [36][40][41].

Another stream of OA research has attempted to evaluate the factors which influence OA such as company culture [42], talent management [43], and IT capability [44]. Van Oosterhout [45] analyzed change factors and assessed "agility gaps" (p. 132) which companies faced in four different industry sectors; they highlighted "the existence of inflexible legacy systems" (p. 132) as a significant perceived barrier to increased agility.

Finally, there is support in the literature for the impact of agility, including agile manufacturing on the performance of enterprises [46][47]. Vickery et al. [48], examining the roles of supply chain information technologies and supply chain operational initiatives in creating agility and encouraging performance, concluded that agility acted as a mediator related to firm performance. Another study [49] similarly showed that, particularly in turbulent contexts, agile manufacturing increased the competitiveness of firms and led to improved operational, financial, and market performance. Akkaya and Qaisar [14] studied OA and its influence on market performance related to dynamic capabilities and concluded that OA played an important moderating role.

To conclude, there is robust support in the scholarly literature for the influence of factors such as organizational culture and/or IT capabilities on OA, as well as support for the positive impact of OA on firm performance, including as a mediator of firm performance. There are few studies, however, which address the role that OA plays in influencing KSB or its impact on work group performance.

4. Work Group Performance

While researchers have identified many different types of work groups, Sundstrom et al. [50] identified basic defining characteristics of work groups which include "shared duties in an organization and interdependence in carrying them out" (p. 49). This is similar to Edmondson's definition of work teams [51][52]. The ability of teams to effectively communicate both their explicit and tacit knowledge to develop shared mental models is a key factor in determining their success [20]. As stated in the Introduction, there does not appear to be a shared conceptual understanding among different scholars as to exactly what work group performance (WGP) consists of; and, similar to KSB, researchers have adopted various approaches for measuring it.

Drawing on the earlier work of Janz et al. [53], which emphasizes that team performance is specific to tasks, Choi et al. [38] evaluated team performance of knowledge workers based on the perceptions of multiple stakeholders (such

as clients and customers) of the quality of their deliverables, their effective time management, and their ability to meet deadlines. In their study, Chung et al. [54] measured group performance by having managers rate groups under their supervision according to four items: work quality, work quantity, group initiative, and overall performance; Frazier and Bowler [55] similarly used a survey tool completed by the work group supervisors who rated the overall performance of the group. Hoegle and Gemuenden [56] measured team performance using a survey instrument completed by team members, leaders, and managers who supervised the teams. Iyengar et al. [57] on the other hand, citing the advice of Argote and Miron-Spektor [58], used sales commissions as a measure of group performance, considering these data to be more objective than self-reported measures. This study assesses the perceptions of team members of the creativity, efficiency, effectiveness, and initiative of their own teams, as well as the quality of the work produced.

A significant number of studies have investigated factors that influence work group performance, such as characteristics of the group [59][60]. Janz et al. [53] asserted that process behaviors, such as helping, sharing, and innovating, positively impacted effectiveness but that the relationship was affected by contextual factors such as goals, feedback, and time pressure. Hoegle and Gemuenden [56], who developed a team work quality construct, analyzed six factors that they predicted would contribute to effective team performance such as communication, coordination, balanced contributions, mutual support, efforts made by members, and group cohesion. Their findings suggested that these factors were positively associated with team performance.

Other scholars have examined the extent to which transactive memory systems and IT support positively impacted team performance [38][61].

Still other studies have assessed the role of voice climate [55], the impact of power structures [54], and the effects of repository knowledge management systems [57].

The literature on this topic provides support for the impact of factors such as process behaviors positively impacting team performance and hence contributing to organizational sustainability. This provides a firm basis for H1 which posits a positive relationship between KSB and WGP.

5. Organizational Sectors

There are several ways to categorize organizations into different sectors, depending on the context of the discussion; categories can be based on size as measured either by revenue, sales, or the number of employees [62]. Other categorical systems may include the profit-nonprofit; Social Enterprise spectrum [63]; the public vs. private sector view; or the ownership structure view of sole proprietor, partnership, corporation [64][65][66][67]. Organizational sectors can also be differentiated based on the tenure of the organization, or start-up vs. established firms [68].

Previous research on organizational sectors has found differences between sectors in several areas, including organizational commitment [63][69] and how organizational effectiveness and performance are measured [70]. Other

research has shown a difference in how organizations in different sectors are affected by their approach to intellectual capital, knowledge, and how it is used and shared [71][72]. Differences have also been reported between conflict management styles of organizations in different sectors [73]. Of particular interest are findings in the prior research that show differences in how organizations in different sectors can be transformed through innovation [66] as innovation based changes in organizational behavior are closely related to knowledge sharing driven organizational agility.

For purposes of this study, to examine the relationship between KSB, WGP, and the effect of OA on that relationship, organizations were divided into broad sectors based on the findings of previous research which indicated that they are likely some similarities within a country/culture, across certain sectors [65][74][75]. It follows, then, that a comparison of the KSB-WGP and OA relationships would likely be more meaningful between those broad sectors of public and private sectors [69], specifically, government, manufacturing-based private enterprise, services-based private enterprise, agriculture, healthcare, and education.

Private enterprise is divided into manufacturing and services sectors due to differing aspects that agility is factored into in these business models [76]. The time it takes a manufacturing firm to adapt to changes in market conditions is expected to be considerably greater than the expectation for services firms [77].

Likewise, the agriculture sector is of interest as a separate sector because it is a unique, large, and important part of the economic system in China [78]. Furthermore, the production cycle is considerably different from manufacturing or services based firms [79], meaning that both knowledge sharing, and particularly OA, may differ from other sectors of the economy [80][81]. This is of particular relevance to this study when considering the recent focus on the sustainability of the agriculture sector in China [82].

In the public sector, prior research indicates that the performance of public sector organizations tend to be affected differently than profit-making organizations by information sharing [83], and by employee learning practices which can be either formal, as structured training, or informal as knowledge sharing behavior between employees [84].

Within the broad category of the public sector, education is unique and of special interest as a critical factor of socioeconomic sustainability and its importance in poverty reduction [85] and socioeconomic mobility [86][87][88]. Education has also been found to play a key role as a driver of innovation-based economic development [89][90][91][92]. Education may shape the views of future business and public leaders and thereby provide insights into trends in leadership styles [93]. Further, education as a sector is unique because it often straddles the line between private and public sectors [94][95][96]. As such, it has been found to respond differently than other organizations to situations requiring OA [97][98], and is therefore appropriate to consider education as separate sector.

Healthcare is of special interest because of the importance of OA in the healthcare systems for social, and ultimately, economic sustainability during periods of health related-crises such as the COVID pandemic that began in 2020 [99][100]. Further, similar to the education sector, the healthcare sector may be in the public, or private

sectors, and because there is evidence that OA in the healthcare sector faces unique challenges, unlike that of other organizational sectors [101][102].

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