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How Technological Knowledge Management Capability Compliments Knowledge-Intensive HRM Practices to Enhance Team Outcomes: A Moderated Mediation

Abstract

Although research establishes a link between knowledge-intensive HR practices (KIHRP) and knowledge-intensive team (KIT) performance, knowledge is limited about the underlying mechanisms and boundary conditions that determine this relationship. This study integrates the ability-motivation-opportunity (AMO) framework and theory of team adaptation into an information processing perspective to present a cohesive model which explains the mediating role of team knowledge sharing and reflexivity processes, and moderation of organisation's technological knowledge management (KM) capability to explain the effect of KIHRP on KIT performance. Data were collected in three waves and from three sources consisting of 380 knowledge workers from 123 teams in 74 organisations in Pakistan. The findings indicate that KIHRP relate positively to KIT performance directly as well as via team knowledge sharing and reflexivity processes where the organisation's technological KM capability further strengthens this relationship.

Keywords

Knowledge-intensive HRM practices; reflexivity; knowledge sharing; team performance; KM technologies; Pakistan

Introduction

In the prevailing and competitive knowledge-based economy, knowledge-intensive teams (KIT) have been recognised as effective means that organizations can apply to leverage information and knowledge resources to boost innovation and obtain a knowledge-based competitive advantage (Berraies & Chouiref, 2023; Cao et al., 2021; Chuang et al., 2016; Del Giudice et al., 2017; Lai, 2015; Yu et al., 2013). KIT usually comprise of knowledge workers who use information and knowledge to identify and address complex gaps pertaining to organisation's learning, innovation, and competitive knowledge (Cao et al., 2021; Shahzad et al., 2022;Yu et al., 2013). The success of KIT in addressing organisational complex knowledge-based problems and competitive advantage depends on teams' ability to effectively manage and leverage unique information and knowledge resources in dynamic knowledge-intensive environments (Gardner et al., 2012; Massey et al., 2002). Accordingly, scholars from a variety of disciplines (e.g., information science (IS), knowledge management (KM), and human resource management (HRM)) are interested in understanding the determinants, mechanisms, and boundary conditions of KIT performance (Berraies & Chouiref, 2023; Cao et al., 2021; Shahzad et al., 2022).

Prior literature on the performance of teams in a knowledge-intensive context has mainly progressed across two lines. IS scholars stress the need for information and knowledge management technologies and systems to support the identification and distribution of knowledge to promote team performance (Choi, Lee & Yoo, 2010; Shi & Weber, 2018; Ward & Given, 2019). HRM scholars, on the other hand, focus on HRM practices that intend to develop knowledge management skills and behaviours of teams to promote the acquisition, exploration, and exploitation of knowledge (Chuang et al., 2016; Shahzad et al., 2022). Although both streams highlight important determinants and mechanisms of team performance, how KM technologies and HRM practices can be integrated to promote knowledge development within teams or, according to IS scholars, how such teams systematically deploy KM technologies to develop and update unique knowledge, to effectively perform in a dynamic knowledge-intensive environment (e.g., see Jarrahi & Sawyer, 2015; Wang et al., 2018; Zhang et al., 2019) is still undertheorized in a KIT context. It is an important gap this study intends to address.

IS scholars have recently begun to argue that, in order for organisations to improve their information resources and knowledge competitiveness, they need to operate within a system which leverages the complementarities of both non-IT resources, such as HRM practices, and IT resources (Jeffers et al., 2008; Johnson et al., 2016; Oehlhorn et al., 2020; Thomas et al., 2022). Such complementarities may lead to the alignment of strategic business functions such as HRM and IT in which HRM acts as a developmental trajectory of team members' knowledge management capabilities, and IT as an enabling context for the development and movement of critical information and knowledge to support team performance (Gerow et al., 2014; Oehlhorn et al., 2020; Thomas et al., 2022). Effective integration of IT and HRM strategies empowers teams to seamlessly identify, acquire, and apply knowledge, enhancing both knowledge management systems and team performance. However, no study to date has considered how HRM and IT interact with and complement each other to promote knowledge processes and the performance of KIT.

To address these gaps, the ability, motivation, opportunity (AMO) framework (Appelbaum et al., 2000), theory of team adaptation, and information processing perspective are integrated to propose that knowledge sharing (Chuang et al., 2016) and reflexivity (Shin et al., 2017) are two critical in-team dynamic knowledge processes of KIT performance that can be promoted through knowledge-intensive human resource practices (KIHRP) and further strengthened through the organisation's technological KM capability. KIHRP include a set of integrated and complementary 'knowledge-intensive ability-, motivation-, and opportunity-enhancing HRM practices including recruitment and selection, training and development, performance evaluation and compensation, career development, and job design that aim to develop knowledge-based resources, competencies, processes, and competitive advantage of the organization' (Shahzad et al., 2022; p. 3). Knowledge sharing involves the continuous exchange of information and knowledge such as technical knowledge, experiences, and information among team members (Chuang et al., 2016; He et al., 2014; Yu et al., 2013). Team reflexivity refers to the 'extent to which team members collectively reflect upon the team's objectives, strategies, and processes, as well as their wider organisations and environments, and adapt them accordingly' (West, 2000: p. 3).

Our study's motivation to consider knowledge sharing and reflexivity is based on the conceptual and empirical evidence that KIT perform in a complex and dynamic knowledge-intensive environment where the key to success is to expand and continuously upgrade the team's knowledge resources and capabilities (Massey et al., 2002; Monks et al., 2016; Schippers et al., 2013). Knowledge sharing and reflexivity are critical processes which facilitate the team's adaptability processes by promoting information exchange and collective learning (Cao et al., 2021; Schippers et al., 2015; Zhang & Guo, 2019; Zhang et al., 2019), leading to superior team performance (Wang et al., 2021). Although Shahzad et al (2022) have identified knowledge exploration and exploitation as critical mechanism of HRM practices to influence team performance, their conceptualisation offers a relatively static view of teams' external knowledge acquisition and utilisation and thus does not explain as how teams internally adapt and adjust during the performance process to match continuously changing environment. Accordingly, based on theory of team adaptation, and recent insights of microfoundations of knowledge management (Kashan et al., 2023), our theorisation centers around self-awareness, reflective capacity, and knowledge dissemination within the team, to conceptualise knowledge sharing and reflexivity as micro level in-team processes that offer insights as how teams review performance, analyze successes and failures, challenge assumptions, identify performance knowledge gaps, refine thinking, and make critical changes, to reach better decision-making and improved team performance (Monks et al., 2016; Schippers et al., 2015). KIHRP are expected to support the development of knowledge workers and provide them motivation and opportunity to engage in information exchanges and collective learning processes (Chuang et al., 2016; Shahzad et al., 2022). Accordingly, it is proposed that knowledge sharing and reflexivity are two critical team processes that may mediate the effect of KIHRP on KIT performance.

Furthermore, scholars stress the need to explore boundary conditions in which KM interventions operate to generate team outcomes (Chuang et al., 2016; Minbaeva, 2013). The IS literature indicates that knowledge-intensive teamwork involves massive information processing (Lai, 2015; Zhang et al., 2019) which an organisation's IT-based infrastructure largely facilitates to enhance the effectiveness of its KM strategies and interventions (Mao et al., 2016; Oehlhorn et al., 2020; Park et al., 2015). Accordingly, based on an information processing perspective (Galbraith, 1973), this study argues that an organisation's

technological KM capability — defined as the IT-based infrastructural capability which supports the movement and management of critical information and knowledge within an organization — may strengthen the efficacy of KIHRP in fostering knowledge-sharing and reflexivity activities (Shi & Weber, 2018; Ward & Given, 2019; Zhang et al., 2019) that essentially involve massive processing of information to understand the environment, reflect on strategies, and make adaption decisions (Arazy et al., 2016) leading to superior team performance (Zhang et al., 2019). Technological KM capability particularly facilitates technology-enabled identification, transformation, and distribution of information in organisations through technological systems such as KM systems, collaborative tools, data analytics, and artificial intelligence processes (Gupta et al., 2009; Melián-Alzola et al., 2020; Shi & Weber, 2018). Thus, this research considers how organisations' KIHRP work in combination with technological KM capability to influence knowledge sharing, reflexivity, and performance in KIT.

Some important contributions to strategic HRM and IS literature are made in this paper. First, the novel conceptualization of the mediating role of team knowledge sharing and reflexivity in the relationship between KIHRP and KIT performance makes a significant and compelling contribution, particularly in the domain of social informatics within IS, filling a crucial gap in the understanding of the complex dynamics at play in knowledge-intensive teamwork and more generally between technology, information, and social systems. The focus on team knowledge sharing and reflexivity sheds light on important team processes that play a pivotal role in translating HRM practices into actual performance outcomes. The conceptualization of team knowledge sharing and reflexivity as mediators between KIHRP and KIT performance delves into the social dynamics within knowledge-intensive teams. By understanding whether and how teams collectively identify and adapt to dynamic knowledge-intensive contexts (Arain, 2022; Ren et al., 2021; Schippers et al., 2013; Gagné et al., 2019), this contribution adds depth into the intricacies of social interactions and knowledge flows, which are central to the field of social informatics, and can provide actionable insights for organisations seeking to optimize their knowledge-intensive teams. The literature is also severely undertheorized with respect to organisational policies and practices that facilitate teams in responding to dynamic knowledge-intensive contexts by systematically and collectively integrating information and knowledge resources (Gardner et al., 2012; Jarrahi &

Sawyer, 2015; Zhang et al., 2019). This identifies the need for HRM strategies that promote and support team knowledge-sharing and reflexivity activities, thereby contributing to the development of effective knowledge-intensive teams. Such awareness can inform organizations on how to leverage HRM practices and technology to create high-performing knowledge-intensive teams, ultimately leading to improved organizational outcomes.

Second, the study addresses recent calls in IS literature (e.g., Mamonov & Peterson, 2021) by exploring the boundary condition of an organization's technological KM capability that may strengthen the effectiveness of KIHRP, thus addressing the growing need for understanding how technology interacts with HRM practices to influence team dynamics and performance in knowledge-intensive contexts. The study provides a novel empirical assessment of how KM technologies, from an information processing perspective, influence team interactions, expertise exchange, and information sharing during knowledge exchange and reflexivity processes. By acknowledging the significance of IT infrastructure as a context influencing KM interventions and processes, this research contributes to both IS and HRM fields, offering practical implications for optimizing KIHRP and advancing the understanding of knowledge-intensive teamwork in technologically enabled environments (Shi & Weber, 2018; Thomas et al., 2022; Zheng, Liu & Zhou, 2020). It also highlights the significance of appropriate technological tools and platforms that support social interactions and knowledge exchange, thus providing valuable guidance for the design and implementation of information systems. The contribution aligns with broader considerations of how information is managed, shared, and processed within organisations. This perspective is crucial in the digital era, where technology plays a central role in shaping information flows and knowledge exchange.

To summarise, this study argues that the extant (intention to) and quality of knowledge-intensive teams to share knowledge, their ability to self-reflect and adapt to constantly changing environments (including organisational needs), as well as the degree of the organisation’s technological KM capability, are essential factors to fully understand the effect of KIHRP on KIT performance.

Theoretical Framework and Hypotheses

The ability-motivation-opportunity (AMO) framework proposed by Appelbaum et al. (2000) and theory of team adaptation proposed by Rico et al. (2019) are integrated to explain how KIHRP influence team performance through team knowledge sharing and reflexivity processes. The AMO framework suggests that performance, be it individual or team, depends on the ability, motivation, and opportunity that members possess to perform a task or role (Hoque et al., 2018; Kehoe & Wright, 2013). Ability refers to team members' knowledge, skills, and ability to perform team tasks. Motivation involves members' willingness to put in the required energy and effort to perform tasks and achieve goals. Opportunity represents working conditions and environment that allow members to use their abilities and motivation. According to AMO framework, a team can effectively perform when A, M, and O are present and work in integration to complement each other in the process of enhancing team performance. The AMO framework thus provides valuable insights into team dynamics and how organizations can build high-performing teams through AMO-enhancing HRM practices (Jiang & Messersmith, 2018).

Theory of team adaptation provides guidance particularly in dynamic and unpredictable work settings where teams face uncertain situations and need to adjust their strategies and actions to maintain performance. According to theory, teams that adapt adeptly and effectively are likely to perform better in the face of dynamic circumstances (Rico et al., 2019). However, it recognizes that adaptability is not a one-size-fits-all concept and that teams must continuously tailor their strategies and functioning to respond to the unique challenges they encounter. The theory also delineates the processes to explain how teams adjust goals, resources, and relevant processes (Maynard et al., 2015) to perform in dynamic environments. It emphasizes the need for flexibility, learning, communication, and collaboration to enable teams to identify emerging challenges, share information, and make collective decisions to effectively adapt to changing circumstances. Theory of team adaptation thus views adaptability as essential mechanism to support the development of agile and resilient teams capable of navigating complexities and driving success in dynamic knowledge-intensive context.

Knowledge-intensive HRM practices and Team Performance

KIT often perform complex, non-routine, and uncertain tasks in knowledge-intensive contexts that involve massive knowledge search, sense-making, learning, creativity, and adaption (Huang & Cummings, 2011; Zhang et al., 2019). A knowledge-intensive context refers to competition where knowledge is the key resource and driver of value creation and competitive advantage (Alvesson, 1993; Von Nordenflycht, 2010). In such a context, the knowledge and the ways it is created, accumulated, shared, and utilised are regarded as the prime source of organisation's innovation, competitiveness, and sustainability (Swart 2008). KIHRP work in integration to develop a team of knowledge workers and provide them with motivation and opportunity to perform knowledge-intensive tasks and behaviours (Gardner et al., 2012). For instance, the ability-enhancing dimension of KIHRP is visible in those processes focusing on recruiting, selecting, and further training members for their potential to perform knowledge-intensive tasks in teams that require continuous collaboration, divergent thinking, learning, adaption, knowledge sharing, and creativity (Kianto et al., 2017; Salas et al., 2008; Salvato & Vassolo, 2018). Motivation-enhancing practices are those that encourage team members to engage in essential knowledge activities and behaviours and learning networks by acknowledging and rewarding employees' behaviours based on knowledge-based contributions to team performance and overall organisational competitiveness (Massey et al., 2002; Shi & Weber, 2018; Thomas et al., 2022). Lastly, opportunity-enhancing practices such as job rotation, flexible job design, and participation further create a conducive environment where members find it psychologically safe and appropriate to collaborate with diverse knowledge networks, share divergent ideas and experiences, and engage in divergent thinking to develop creative solutions to organisational problems pertaining to knowledge gaps, creativity, and innovation (Kianto et al., 2017; Krausert, 2014). Flexible job designs, social interactions, and participation in decision-making provide teams with flexibility and liberty to exchange and integrate knowledge, adjust tasks and routines, and make unprecedented decisions to increase the organisation's knowledge-based market value (Jackson et al, 2006).

Empirical study of Shahzad et al. (2022) found a positive combined effect of knowledge-intensive ability, motivation, and opportunity enhancing HRM practices on KIT performance. However, their study employed a sample of mainly hi-tech organizations such as software and telecommunication firms. Our study aims to test this relationship in a sample of

hospitality sector which involves both knowledge and labor-intensive work dynamics (Arshad, Iqbal, & Shahbaz, 2018; Chang et al., 2020; Sun et al., 2022). It is possible that AMO based KIHRP may work differently for knowledge-intensive teams that also operate in and interact with labor-intensive work. Accordingly, based on the conceptual and empirical evidence in IS and HRM literature (Chuang et al., 2016; Jiang et al., 2012; Massey et al., 2002; Oehlhorn et al., 2020; Shahzad et al., 2022), it is assumed that these three dimensions (ability-motivation-opportunity enhancing practices) of KIHRP work in totality to achieve KIT performance outcomes. Therefore, it is proposed that:

H1: Knowledge-intensive HRM practices relate positively to knowledge-intensive teams' performance.

Mediating Role of Team Knowledge Sharing and Reflexivity

HRM and IS literature indicate that for teams to perform effectively in a dynamic knowledge-intensive context, they must have a) the capability to constantly reflect and contemplate to accurately identify the emerging knowledge opportunities and gaps, develop relevant knowledge strategies, including learning from their mistakes, and b) the ability and motivation to develop and collaborate with knowledge networks and form efficient mechanisms to build and exchange knowledge resources (Arain et al., 2022; Cao et al., 2021; Fu et al., 2021; Hong & Gajendran, 2018; Ward & Given, 2019; Zhang et al., 2019). Accordingly, this paper argues that team knowledge sharing and reflexivity are two important mediating mechanisms through which KIHRP can enhance KIT performance.

Organisations largely count on teams to develop critical knowledge of complex operations and work processes in line with the organisation's dynamic context and knowledge-intensive competition (Cao et al., 2021; Hu, Horng, & Sun, 2009). For a typical knowledge-intensive project team (e.g., an information system development team), possessing and sharing the right knowledge is considered the key to the achievement of a desired team performance. Therefore, when a KIT is underperforming, the knowledge management literature has traditionally blamed either a poor talent management system – the team members simply do not have enough ability or knowledge resources to contribute (Hara & Hew, 2007; Lin &

Huang, 2008; Shi & Weber, 2018) – or the team members intend to withhold or conceal their knowledge (Kolekofski & Heminger, 2003; Reychav & Weisberg, 2010; Tsay et al. 2014). Despite the relevance of these concepts, the constantly changing technologies, customers' preferences, market trends, and competitors' actions are now forcing KIT to engage in effective reflective thinking, collective learning, and adaption processes to perform (Chung & Jackson, 2013; Rico et al., 2019; Zhang et al., 2019). Theory of team adaptation asserts that team reflexivity facilitates team innovation and performance by enabling the teams to reflect on team goals, strategies, and processes and make adjustments to adapt organisations' dynamic service contexts and emergent knowledge requirements. Team reflexivity thus facilitates team members to engage in systematic scanning and evaluation of current and future service trends to identify and rectify critical knowledge gaps that cause service failures (Chowdhury et al., 2020; Zhang et al., 2019). Empirical evidence indicates that team reflexivity is a significant determinant of team outcomes such as innovation (Schippers et al., 2015) and performance (Hoegl & Parboteeah, 2006). Tannenbaum & Cerasoli (2013) in their meta-analysis found that team debriefing, a general reflective activity, could be sufficient to improve team performance. Zhang et al. (2019) found a positive influence of a team's task reflexivity on the effect of members' epistemic motivation on their knowledge contribution behaviours.

Furthermore, the literature suggests that team performance also requires the effective sharing of knowledge (Cavaliere et al., 2015; Foss et al., 2010). The rationale behind this statement is that performance in knowledge-intensive contexts cannot be maintained in isolation: teams need holistic knowledge of service functions and processes of the organisation (Engelbrecht et al., 2019; Hu, Horng & Sun, 2009; Hong & Gajendran, 2018; Ma et al., 2017; Shi & Weber, 2018). The sharing and exchange of critical knowledge in KIT is thus an important antecedent of team performance as it enables teams to access organisation-wide distributed expertise and insights to strategize team functioning and activities (Arain et al., 2022; Gupta et al., 2009; Lai, 2015; Wang et al., 2018). Effectively setting up the knowledge-sharing mechanism and motivating team members to exchange critical knowledge is, however, a key challenge in knowledge-intensive organisations (Chowdhury et al., 2020; Hong & Gajendran, 2018; Ma et al., 2017; Shi & Weber, 2018). For instance, team knowledge sharing goes beyond the mere sharing of knowledge within teams (Foss et al., 2009); it is an organisation-

wide 'relational act based on a sender-receiver relationship that incorporates communicating one's knowledge to others as well as receiving others' knowledge.' (p. 873).

The role of KIHRP becomes crucial in promoting team knowledge sharing and reflexivity as it can provide team members with the requisite capabilities, motivation, and opportunity to generate and share knowledge that boosts team performance (Shahzad et al., 2022; Minbaeva, 2013; Singh et al. 2021). KIHRP, through its knowledge-intensive AMO enhancing practices, develop the team's knowledge management capacity, that is, the ability of the team to scan the organisational environment, reflect on existing team dynamics, share knowledge among stakeholders, and adapt to ever-changing knowledge-intensive contexts (Jarrahi & Sawyer, 2015; Hong & Gajendran, 2018; Zhang et al., 2019). For instance, through a targeted selection and recruitment process, KIHRP facilitate the employment of knowledge workers based on their overall fit to the company's knowledge-intensive vision and cultural values as well as their ability to work in diversified knowledge networks and adapt to the changing knowledge-intensive environment (Krausert, 2014; Phelps et al., 2012). Similarly, through training programs, KIHRP may enhance team members' overall capability to increase the depth and breadth of team knowledge by emphasising members' capacity to understand and interpret organisational knowledge-intensive vision, strategy, and culture, and collaboratively generate, transform, and exchange knowledge (Chung & Jackson, 2013; Jackson et al., 2006; Jiang et al., 2012; Salas et al., 2008; Shi & Weber, 2018). Training programs also develop and strengthen members' critical and divergent thinking processes which help teams improve performance by reflecting and adapting to advanced knowledge and opportunities (Salas et al., 2008; Zhang et al., 2019).

Lastly, KIT also require motivation to build and collaborate with diverse knowledge networks to enhance learning, sharing, and adaptation (Arazy et al., 2016; Hong & Gajendran, 2018; Shi & Weber, 2018). Team-based performance evaluation and compensation practices of KIHRP can motivate team members to invest more time in boundary spanning, self-development, and identification and sharing of new knowledge (Shahzad et al., 2022). Empirical evidence suggests that team members' motivation is positively associated with team reflexivity and knowledge exchanges (Burmeister et al., 2020; Ma et al., 2017) and performance-based rewards provide employees with high motivation to engage in the reflection and knowledge exchange processes and behaviours. Similarly, KIHRP create a conducive context for reflective

thinking, learning, adaptation, and knowledge exchanges through flexible and autonomous job design, rotation, participation in decision-making, and career development opportunities (Wang et al., 2021). Foss et al. (2009) also argued that job designs that permit flexibility and empowerment boost members' determination to learn, share, and adapt to new knowledge will, in turn, enhance team performance.

Given these theoretical arguments and empirical evidence, it is expected that KIHRP facilitate KIT's knowledge exchange and reflexivity activities which, in turn, influences KIT's performance. Accordingly, it is proposed that:

H2a: Team knowledge sharing mediates the relationship between KIHRP and KIT performance.

H2b: Team reflexivity mediates the relationship between KIHRP and KIT performance.

The Moderation of Technological Knowledge Management Capability

Strategic HRM scholars typically stress the design of knowledge-intensive HRM practices (Shahzad et al., 2022) and IS scholars the development of technology infrastructure to achieve knowledge-based competitiveness for the organisation (Thomas et al., 2022). However, contemporary literature indicates that the success of organisational Knowledge Management (KM) interventions to achieve knowledge-based competitiveness can be better attained through the complementarity and synergistic combination of the KM capacity of human resources and the technological KM capability of the organisation (Gerow et al., 2014; Jeffers et al., 2008; Mao et al., 2016; Oehlhorn et al., 2020; Zhang et al., 2018). The empirical literature provides evidence for the failure of non-IT and IT based interventions to generate desired knowledge outcomes when operated in isolation. For instance, Osatuyi, Hiltz and Passerini (2016) noted that although group decision support systems (GDSS) enabled higher information exchange in team discussions it could not generate effective decision making. Matzler et al., (2011) found knowledge codification to be negatively associated with knowledge sharing. Similarly, studies found negative effects of some organisational management practices on employees' knowledge behaviours (Bock et al., 2005; Yang, 2007; Swift & Virick, 2013; Teh & Sun, 2012).

Therefore, consistent with IS scholars' contingency perspective (Mao et al., 2016; Zhang, Pablos & Zhou, 2013), the authors argue that the organisations' technological KM capability should? complement KIHRP' influence on knowledge-sharing and reflexivity processes of KIT to eventually enhance team performance. The information processing perspective identifies knowledge-intensive environments as a dynamic context where information and knowledge are distributed, located, and embedded unevenly across organisational members, teams, units, and larger markets (Liu et al., 2013). Organisations implement ICT infrastructure to develop information processing mechanisms and capability to meet the information need of knowledge workers and knowledge-intensive work (Lai, 2015). Access to KM technologies such as intranets, databases, recommender systems, decision support systems, groupware, document management systems, and social networking platforms facilitate communication and collaboration within and across teams and organisational units to access and process critical information, knowledge, and expertise to solve complex organisational problems and develop innovative products and services (Mao et al., 2016; Shi & Weber, 2018). Overall, KM technologies may establish an information intelligence context that will further enable KIHRP to support teams' technology-driven analysis and interpretation of data and information to make informed decisions in dynamic knowledge-intensive environments.

Specifically, an information processing perspective illustrates that the availability of and access to information and communication technologies (ICTs) such as knowledge repositories, search engines, intranets, and collaboration platforms largely influence the effectiveness of information-sharing processes of teams (Chen & Hung, 2010; Foss et al., 2010; Thomas et al., 2022). For instance, for KIT to perform effectively they must establish a collaborative mechanism to regularly share and process critical information within teams as well as to convert individuals' knowledge into a team's collective knowledge-based capability (Gupta et al., 2009; Shi & Weber, 2018). KIT members may face problems in locating as well as approaching members who hold information, knowledge, and expertise about the specific problem or solution. KM technologies such as intranets, experts' databases, recommender systems, and networking platforms can help teams easily locate and approach experts to understand the problem and learn solutions (Cao et al., 2021). KM technologies

may thus complement KIHRP's ability, motivation, and opportunity-enhancing practices by giving team members a feel that they can make critical information and knowledge exchanges, leading to enhanced team performance. The literature indicates that the availability of KM technologies motivates and enables critical knowledge management activities and sharing behaviours in organisations (Arazy et al., 2016; Hoogeboom & Wilderom, 2020). It is thus argued that the technological KM capability of an organisation may strengthen the effectiveness of KIHRP in generating the mediational process of knowledge sharing to affect KIT performance. Therefore, it is expected that:

H3a: Technological KM capability of an organisation moderates the indirect effect of KIHRP on KIT performance via team knowledge sharing, such that the indirect effect is stronger when the technological KM capability is high than when it is low.

Furthermore, the indirect effect of KIHRP through team reflexivity may be strengthened when KIT will have KM technologies to reach and scan environments for new information about operations, technologies, customers, and competitors (Gupta et al., 2009; Hoogeboom & Wilderom, 2020). KIT members may be more attentive to KIHRP in anticipation that with the support of KM technologies they can better utilise the ability, motivation, and opportunity provided by KIHRP to collectively engage in reflective discussions, identify critical knowledge gaps, and make requisite adjustments in team strategies, processes, and structures to achieve greater team performance. For instance, KIT under KIHRP may find it easier to quickly collect and process information about new market trends and customer preferences through social media platforms, blogs, and online discussion forums (Melián-Alzola et al., 2020; Ward & Given, 2019). The organisations' central database, knowledge repositories, specialised portals, and operational modules then further help teams in integrating new information with existing knowledge for ongoing and future reflections and adaptations (Thomas et al., 2022), leading to superior team performance. Given this, and based on the information processing perspective, this paper argues that, in the presence of KM technologies, teams may find them more able, motivated, and empowered by KIHRP to reflect on and adjust team functioning, leading to high team performance. Therefore, it is expected that:

H3b: Technological KM capability of the organisation moderates the indirect effect of KIHRP on KIT performance via team reflexivity such that the indirect effect is stronger when the technological KM capability is high than when it is low.

Method

Procedure and Sample

The data was collected from hospitality and tourism sector organisations within Pakistan in three waves and from three sources. The hospitality and tourism sectors are considered a global industry characterised by intense competition based on the information and knowledge-based operations and customer service value (Arain et al., 2022). This sector was selected due to the willingness of, and the logistic support provided by, tourism and hospitality industry officials for the collection of longitudinal data. Time-lagged and multi-source data are more likely to minimise common method bias issues that are caused by cross-sectional or single-source data (Chang et al., 2010). With the help of government and industry officials, from the databases of hospitality and tourism associations of Pakistan, a list of around 300 organisations that were expected to have a) team-based structures, and b) formal HRM departments in place was compiled. Three questionnaires were created in English for each organisation. In the first wave (Time 1), a survey information sheet was emailed to HR managers of targeted organisations along with a questionnaire that required HR managers to rate the prevalence of knowledge-intensive HRM practices and technological KM capability in their organisations. Responses were received from 96 organisations (32% organisation-level response rate). After six weeks (Time 2), with the help of focal HR personnel, the questionnaire was sent to members of teams that were performing knowledge-intensive work. Written criteria were provided to HR personnel to identify KIT in their organisation. Based on the literature, a team was considered KIT if a) it composes of knowledge workers with a university degree as a minimum level of education), b) it performs relatively non-routine, complex, and uncertain tasks, c) team members use specialised knowledge and skills to accomplish tasks, and d) the team addresses knowledge-related gaps and problems that hinder the organisation's innovation and knowledge-based advantage (Chuang et al., 2016; Jackson et al., 2006; Huang & Cummings, 2011; Yu et al., 2013). Team members provided information about the prevalence level of knowledge sharing and reflexivity in their teams. The contact details of their team leaders were also obtained in this

phase. 424 responses were received from 137 teams. In the third wave (Time 3), after a time lag of six weeks, the questionnaire was sent to leaders of 137 teams and asked them to rate the performance of their team. Overall, 380 team members-leader matched responses were received from 123 teams of 74 organisations. Responses of team members about team knowledge sharing and reflexivity were aggregated to respective team level. On average, 1.7 teams and 3.1 members from each team from each respondent organisation completed the survey. The average size of the teams was 6.4 members per team and the average tenure of the teams was 7.4 months. Most organisations were hotels, restaurants, and café chains (74%) followed by tour operators (12%), event management organisations (8%), and guest houses (6%).

Measures

Colquitt et al. (2019) and Taherdoost (2016) guidelines were followed to select measurement scales. An expert panel consisting of three academics, two sector specialists, and owners of the organisations was formed to select, refine, and finalize the measurement scales. A pilot test survey was carried out before the distribution of the questionnaire for final data collection. Unless otherwise mentioned, all scale items were rated using 5-point Likert-type anchors ranging from 1 = *strongly disagree* to 5 = *strongly agree.* A complete scale with all measurement items is available in supplementary material on the journal's website.

Knowledge-intensive HRM practices (KIHRP) were measured through 15 items taken from Shahzad et al. (2022). The scale measures KIHRP on three dimensions: 1) knowledge-intensive ability-enhancing dimension (6 items), 2) knowledge-intensive motivation-enhancing dimension (4 items), and 3) knowledge-intensive opportunity-enhancing dimension (5 items). Cronbach's alpha and composite reliability values of the combined scale were 0.97 and 0.98, respectively.

Team Knowledge Sharing was measured through 5 items taken from Chung & Jackson (2013). Cronbach's alpha and composite reliability values of the scale were 0.93 and 0.94 respectively. The intra-class correlation value of 0.94 indicated that it was appropriate to aggregate the team members' responses to form the team-level response.

Team Reflexivity was measured through a five-item scale by Hoegl & Parboteeah (2006). Cronbach's alpha and composite reliability values of the scale were 0.91 and 0.92

respectively. The intra-class correlation value of 0.91 indicated that it was appropriate to aggregate the team members' responses to form the team-level response.

Technological KM Capability was measured through the 6-item scale of Zhang et al. (2018). Cronbach's alpha and composite reliability values of the scale were 0.95 and 0.95 respectively.

Team performance was measured using an 8-item scale taken from Shahzad et al. (2022). Cronbach's alpha and composite reliability values of the scale were 0.96 and 0.97 respectively.

Control Variables

Consistent with similar prior studies, the size and age of the firm were considered as organization-level control variables whereas at the team level it was the size and tenure of the team that were considered. These factors have been found to affect the performance outcomes of teams (Chuang et al., 2016; Shahzad et al., 2019).

Results

Data Aggregation

In this study, KIHRP and technological KM capability were measured at the organization level, whereas team knowledge sharing, reflexivity, and performance were measured at the team level. KIHRP and technological KM capability of organization were rated by a single respondent i.e. HR manager of each organization. Similarly, team performance was evaluated by single respondent i.e. team leader. For team knowledge sharing and reflexivity, we sought ratings from individual team members and then averaged individuals' scores to form a team level variable. However, before proceeding with data aggregation, we calculated interrater agreement (r_{wg}), intra-class correlations (ICC1), and the reliability of the group mean (ICC2) to justify the aggregation (Klein & Kozlowski, 2000). The ICC1 scores for knowledge sharing and reflexivity were .57 and .53 respectively. The ICC2 scores for knowledge sharing and reflexivity were .68 and .65 respectively. Both scores were above the suggested threshold point of .60 (Bliese, 2000). The r_{wg} scores for knowledge sharing and reflexivity were .88 and .89 respectively, also above the suggested threshold point of .70. These values suggested the appropriateness of the aggregation of data (Klein & Kozlowski, 2000).

Measurement Validation

Consistent with past IS studies (Cao et al., 2021; Choi, Lee & Yoo, 2010), a Confirmatory Factor Analysis (CFA) using was conducted in AMOS 28.0 to establish the psychometric properties of measurement scales. Three models were calculated and compared with five-factors, four-factors, and three-factors solutions. As shown in Table 1, the chi-square difference tests and fit indices demonstrated that the hypothesised five-factor model achieved a superior fit to the other models. The loadings of all items were significant and above 0.70 (ranging from 0.72 to 0.96) on their respective factors. Furthermore, the average variance extracted (AVE) value exceeded the standard threshold level of 0.5 for all latent variables. Additionally, Harman's single factor test with a single factor solution showed a substantial worst fit which refuted the possible influence of common method variance (see Table 1). These results collectively established the convergent and discriminant validity of the measures (Fornell & Larcker, 1981).

The means, standard deviations, inter-correlations, and estimated reliabilities of the key variables of the study are presented in Table 2. Considering the conceptual closeness of variables due to the knowledge-intensive context, the Tolerance level and Variance Inflated Factor (VIF) were calculated to refute the possible issue of multicollinearity in this model, especially among team knowledge sharing and reflexivity. The value of Tolerance was above the threshold value of .2 and the VIF value was below the threshold value of 5, thus confirming that multicollinearity was not a potential issue in the study.

Analytical strategy

The nested structure of the data in this study warranted multilevel analysis as the independent variable (knowledge-intensive HR system) was measured at organizational level whereas mediators (team knowledge sharing and reflexivity) and the dependent variable (team performance) were measured at the team level. Therefore, 2-1-1 level modelling was employed to investigate the effect of level 2 KIHRP (n = 74 organisations) on the level 1 team's knowledge processes and performance outcome (n = 123 teams). The ICC (intra-class correlation) score suggested a significant variance across organisations for team performance (51%) (Wald $Z = 3.23$, $p < 0.001$) which established the suitability of multilevel modelling (Podsakoff et al., 2019). The MLMed macro with restricted maximum likelihood estimation

in combination with PROCESS Macro was used to test all direct, mediation, and moderated mediation hypotheses (Hayes & Rockwood, 2020). MLMed has been found a suitable macro to test the 2-1-1 multilevel model (Kehoe & Wright, 2013; Zhang et al., 2022). Consistent with previous studies, the between-group scores were considered to test all hypotheses including moderated mediation. Mediating relationships were particularly tested through Monte Carlo simulations at 95% confidence level to 10,000 sample size (Preacher & Selig, 2012). For moderated-mediation, a between-index of moderation mediation (as suggested by Hayes & Rockwood, 2020) was used to test the significance of the moderation. The model is considered significant only if zero does not fall between the upper and lower limits of 95% confidence intervals.

The first hypothesis postulated a positive relationship between KIHRP and KIT performance. The findings (Table 3 Model 1) revealed that Time 1 KIHRP has a significant cross-level positive effect on Time 3 KIT performance ($\beta = .30$, $S.E = .05$, $t = 5.81$, $p < .001$), thus confirming Hypothesis 1. None of the control variables related significantly to KIT performance and almost the same pattern of results was found with and without control variables. Since the controls did not affect our hypothesis testing, the suggested guidelines were followed and only results without controls were presented.

Hypothesis 2a and 2b proposed that Time 2 team knowledge sharing and reflexivity respectively mediate the relationship between KIHRP and KIT performance. The finding presented in Table 4 showed a significant indirect effect of KIHRP on KIT performance through team knowledge sharing ($\beta = .15$, $S.E = .05$, $Z = 3.04$, $p < .001$, CI [.0464, .2594]) and team reflexivity ($\beta = .16$, $S.E = .04$, $Z = 3.74$, $p < .001$, CI [.0857, .2575]) at between-group level, thus confirming hypothesis 2a and 2b. The direct effect of KIHRP on KIT performance was significant in the presence of team knowledge sharing ($\beta = .14$, $p = .03$, CI [.0145, .2830]) and team reflexivity ($\beta = .13$, $p = .01$, CI [.0228, .2566]) indicating partial meditations.

Hypothesis 3a and 3b proposed that the technological KM capability of an organisation moderates the indirect effect of KIHRP on KIT performance through team knowledge sharing and team reflexivity respectively such that the indirect effect will be stronger for both indirect

effects under a high level of technological KM capability than when it will be low. Following Hayes (2015) suggestion, the moderated-mediated model was run with KIHRP (X), reflexivity (M), performance (Y), and technological KM capability (second-stage moderator). A significant moderator, irrespective of the stage, indicates its potential to modify the strength of the whole indirect effects (Hayes, 2015). As presented in Table 4, the between-index of moderated mediation (estimate= .05, 95% CI interval [.0042, .0987]) explained significant variance in the indirect relationship between KIHRP and KIT performance through team knowledge sharing and reflexivity due to technological KM capability. To further understand this moderation, we estimated the conditional effects at the low and high levels of moderator. The indirect effect of KIHRP on KIT performance through team knowledge sharing was stronger and significant when the technological KM capability was high (β = .11, S.E. = .05, 95% CI: [.0043, .2207]) and became weaker yet significant when it was low (β = .08, S.E. = .03, 95% CI: [.0122, .1581]). Similarly, the indirect effect through team reflexivity was stronger and significant when technological KM capability was high (β = .15, S.E. = .05, 95% CI: [.0390, .2427]) and became weaker yet significant when it was low (β = .06, S.E. = .03, 95% CI: [.0023, .1222]). Thus, hypotheses 3a and 3b received support.

Discussion

The main objective of this study was to investigate the underlying mechanism and boundary condition of the effect of KIHRP on KIT performance. The findings confirm that KIHRP that focus on the enhancement of knowledge-intensive ability, motivation, and opportunity positively influence KIT performance both directly and indirectly via promoting team knowledge sharing and reflexivity processes. Our findings are consistent with and provide support to conceptual and empirical IS literature. For instance, Zhang et al. (2019) found that team members with higher level of epistemic motivation contribute more knowledge in teams. Osatuyi et al. (2016) found that team members as a result of team discussions (a crucial element of reflection) change their thoughts and preferences to develop better team consensus which enhances team functioning and effectiveness. Our findings also confirmed that the technological KM capability of organisations further strengthens the indirect effects of KIHRP (via team knowledge sharing and reflexivity) on team performance. The identification of technological contingencies for KIT performance in our study provides support to IS literature such as Arazy et al. (2016) who argued for the contingencies of

knowledge processes and behaviors, and Jarrahi and Sawyer (2015) and Oehlhorn et al. (2020) who found that ICTs significantly improve the effectiveness of organizational initiatives for the exchange of innovative knowledge. Our findings thus contain important implications for theory and practice in IS and HRM.

Theoretical Implications

First, by using the AMO framework and theory of team adaptation, this study explains the potential of organisation level KIHRP to promote critical micro in-team adaptive and generative knowledge processes of knowledge sharing and reflexivity to enhance KIT performance. Contemporary IS research has been particularly focused on understanding the practices and processes that enhance knowledge effectiveness and performance of teams in knowledge-intensive contexts (Cao et al., 2021; Oehlhorn et al., 2020). Accordingly, this study's findings extend the IS research on team adaptability by encapsulating the importance of knowledge-intensive ability, motivation, and opportunity for KIT (Hansen, 1999) to adapt knowledge-intensive contexts through team knowledge sharing and reflexivity activities and enhance performance as a result. Specifically, the demonstrated mediating role of both knowledge sharing and reflexivity processes in teams extends support to IS literature (Zhang et al., 2019) by underpinning the importance of the teams' internal reflective and adaptive processes in effectively adapting knowledge resources and processes to perform in dynamic knowledge-intensive contexts (Konradt et al., 2016; Osatuyi et al., 2016).

Our study thus offers insights that go beyond the extant literature, especially Shahzad et al. (2022), in terms of novelty, cost implications, and competitive advantage. First, our study focuses on team's internal performance dynamics related to teams' self-awareness, reflection, and knowledge dissemination to highlight the mediating role of team's capacity to collectively learn, disseminate, and adapt within teams, whereas Shahzad at al. (2022) study emphasizes the exploration and exploitation of external knowledge. Although exploration and exploitation offer performance benefits, contemporary debates revolve around the microfoundations and mechanisms through which teams' knowledge processes evolve and contribute (Kashan et al., 2023). Given that KIT exist to serve organizational strategic knowledge goals and organizational knowledge-intensive context changes rapidly, teams must adjust their strategies and functioning to keep organization growing and thriving

(Schippers et al., 2013). Accordingly, our study's focus on teams' internal adjustment offers more important insights than straight exploration and exploitation of knowledge (Monks et al., 2016; Schippers et al., 2015). Second, our emphasis on collective reflexivity and knowledge sharing may offer a more cost-effective team performance solution, especially for smaller firms with limited resources, as it captures the existing knowledge and expertise within the team, compared to relying heavily on costly options of exploring and exploiting knowledge of external sources. Lastly, while external knowledge can offer immediate benefits, a team that invests in internal processes builds its team and firm-specific intellectual capital, which can provide teams and organizations a knowledge-based competitive advantage over time. Internal knowledge becomes ingrained and can be leveraged for a variety of performance challenges.

Second, the findings of this study extend the information processing perspective by confirming the significant moderating role of an organisation's technological KM capability in strengthening the effectiveness of KIHRP to promote team knowledge processes and performance. This is consistent with Ward & Given (2019) and Shi and Weber (2018) who found a significant role of ICTs in facilitating effective collaboration, information sharing, shared understanding, and intercultural communication in teams. This study's important insight extends the information processing perspective by highlighting the importance of the information processing needs of knowledge-intensive teamwork and information processing capability of organisation (De Dreu, 2007; Zhang et al., 2019) to generate a complementary, interdependent, and synergistic combination of hard and soft components of the KM system (Alavi & Leidner, 2001; Johnson et al., 2016; Zhang et al., 2018) to facilitate teams' performance processes and outcomes through strategically targeted KIHRP (Chuang et al., 2016; Jarrahi & Sawyer, 2015; Shahzad et al., 2022). This confirms that teams' ability, motivation, and opportunity to process useful information and knowledge in the team's knowledge sharing and reflexivity activities and resultantly achieve superior team performance are strengthened by the organisation's ICT-based infrastructural condition. This paper's theorisation thus supports the contemporary IS literature which asserts that KM technologies are powerful enablers of an organisation's KM interventions that envisage enhancing teams' problem solving, decision making, learning, sharing, and innovation (Oehlhorn et al., 2020; Shi and Weber, 2018; Ward & Given, 2019). Compared with the

previous theorisation in organisational science that demonstrates the positive effects of leadership and climate, this study is among the first to bring IS perspective to shed light on the powerful effect of technological KM capability in creating a compatible boundary condition for KIHRP to enhance performance of teams that essentially operate in highly dynamic knowledge-intensive contexts. Overall, our study extends support to Venkatesh and Windeler (2012) findings that a technology which contains capability to promote more social and experiential interactions contribute more to team cohesion and performance.

Managerial Implications

Our study offers important practical implications, particularly in the field of information science (IS). The findings reveal that Knowledge-intensive HRM practices (KIHRP) have both direct and indirect effects on knowledge intensive team (KIT) performance, mediated by team knowledge sharing and reflexivity processes. This suggests that for organisations relying on KITs and KIHRP, the improvement of team knowledge sharing and reflexivity processes is essential. Strategies to promote knowledge sharing among team members could be the use of collaborative platforms, regular knowledge sharing sessions, and recognition of knowledge contributors. To foster team reflexivity, managers should encourage open communication, self-assessment, and regular team discussions. Creating an environment that supports feedback exchange and encourages members to reflect on team strategies and functioning can significantly improve KIT performance outcomes.

When implementing KIHRP, managers should recognise that every team and organisation is unique in its knowledge-intensive requirements, thus tailor the practices to fit the specific needs and characteristics of that ecosystem. These considerations and investment can lead to higher team performance as knowledge workers might be more likely to engage in team-based and knowledge-intensive tasks.

In line with tailoring the practices to the unique requirements, managers should focus on employees' past experiences and capacity for knowledge-intensive tasks. HR practices, such as selection and training, should consider individuals' previous experiences and their capability to undertake knowledge-intensive activities. This approach can enhance team members' ability to reflect on past experiences, contribute valuable insights to team

discussions, and adapt to changing competitive conditions, ultimately driving innovation and superior performance.

Further into the implication related to the mediating effects KIHRP on KIT Performance, managers should integrate knowledge-oriented performance appraisals and compensations, where performance evaluations and compensations recognise both individual and team contributions as well as knowledge-related behaviours. Acknowledging the collective knowledge-sharing efforts and collaborative achievements of teams can encourage a conducive environment for knowledge exchange and adaptation to emerging service trends and demands. The promotion of a learning culture can enhance the impact of KIHRP on team performance and foster an environment of innovation.

This study also identifies technological Knowledge Management (KM) capability as a moderator, that is, the technological KM capability of an organisation strengthens the mediational effects of KIHRP on team performance, particularly through team knowledge sharing and reflexivity. To leverage this moderating effect, organisations should invest in and align their technological KM capabilities with KIHRP to maximize the positive impact on team performance. Thomas, Sistenich, Diango and Kabongo (2022) in their study particularly recommended that a KM system can be more effective if the organization clearly understands its essential knowledge processes, and provides required tools, resources, practices, and support to promote knowledge behaviors. Building a strong IT infrastructure can facilitate the generation of knowledge sharing and reflective discussions among teams, ultimately enhancing team performance in knowledge-intensive contexts. Implementing advanced KM systems and technologies can complement the positive effects of KIHRP on team performance. This investment can enable teams to leverage knowledge resources effectively and efficiently, leading to improved performance outcomes.

To fully capitalize on the mediational effects of KIHRP, organizations should also ensure alignment between their technological KM capabilities and HRM practices. Integration and synergy between these two aspects can amplify the positive impact on KIT performance. Managers should aim to create a cohesive ecosystem; effective teamwork in knowledge-intensive environments necessitates support from both human resources and technological

capabilities. Organisations should design KM systems, policies, and practices that foster the development of IT infrastructure alongside team members' ability, motivation, and opportunity for reflection, knowledge sharing, and improved performance.

Limitations and Future Directions

Despite its various strengths, this study contains some limitations. First, this study was conducted in the hospitality industry due to the access to organisations for longitudinal data collection. Though sector specific studies contain their own merit, generally they limit the generalisability of findings to other industries and cultures. Thus, caution is required. Future studies can collect data from multiple industries and different cultures to validate the effectiveness of KIHRP for KIT performance in dissimilar knowledge-intensive contexts. Cultural differences influence the way groups perform knowledge activities and adopt technologies to improve performance (Ward & Given, 2019).

Second, KIHRP were only included as only determinant, and team knowledge sharing and reflexivity as mediating processes to understand KIT performance. Previous literature has identified other team-related factors such as team structure, autonomy, culture, and task complexity that can influence team processes and performance. Similarly, while knowledge sharing and reflexivity are important in-team processes, the significance of external knowledge processes such as exploration and exploitation should not be undermined. A balanced approach that integrates both internally and externally oriented knowledge processes is often the most effective way to achieve innovation, better decision-making, and long-term success in complex environments. Future studies should consider including more predictors and intermediary factors to investigate the underlying mechanisms.

Third, this study has assumed that extrinsic motivation, stressed through incentives and rewards, will enhance team members' knowledge behaviours. However, the literature also indicates that extrinsic motivators may hinder knowledge sharing (Bock et al., 2005). Thus, future studies may frame the dual effects of the transactional aspects of KIHRP.

Fourth, we have measured the effect of the mere presence of KM technologies in the organisation and not the extent to which teams adopted those technologies or tend to adapt to organisations' ICT contexts. Future studies may consider the adoption or use of KM

technologies to see how they complement HRM practices to influence team processes and performance.

Lastly, technological KM capability is found to strengthen the effectiveness of KIHRP. Future studies can also place KIHRP in broader contexts and explore both the conditions that facilitate and those that hinder their effectiveness.

Conclusion

This study successfully integrates HRM and IS literature to answer 'how and when team performance in dynamic knowledge-intensive contexts can be enhanced'. This study is among the first in both fields to establish that strategically targeted KIHRP influence KIT performance by fostering the team's adaptive knowledge sharing and reflexivity processes. It also found, for the first time, that the technological KM capability of an organisation complements the mediational effect of KIHRP on KIT performance. This study thus extends support to social informatics perspective in information science to achieve knowledge management success by integrating KM technologies and HRM practices.

Declaration: The authors declare that they have no conflict of interest.

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Figure 1

Model of Moderated-Mediated Effects of KIHRP on KIT Performance

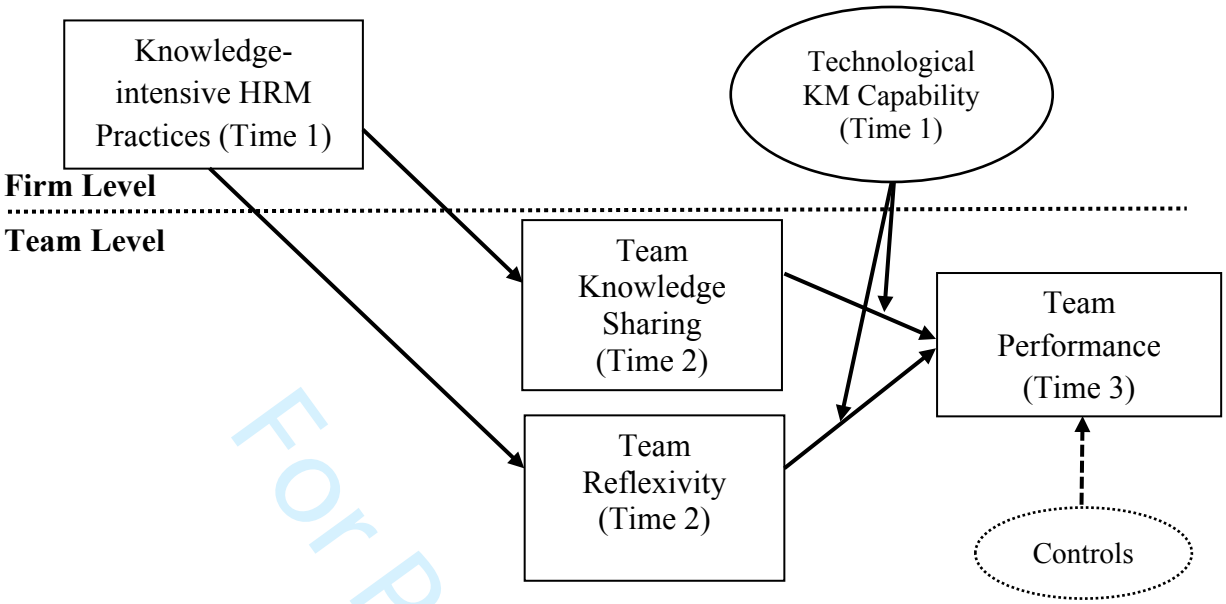

Table 1

Confirmatory Factor Analysis

CFA Models	χ2	df	χ2/df	CFI	TLI	RMSEA (*AIC*)
Model 1: Original five-factor model	1073.36	692	1.55	.93	.93	.067 (*1249.36*)
Model 2: four-factor model	1243.82	696	1.78	.90	.89	.081 (*1411.82*)
Model 3: three-factor model	1872.17	696	2.69	.78	.77	.118 (*2040.17*)
Model 4: single-factor model (Combining all variables)	2455.54	667	3.68	.72	.81	.17 (*2322.65*)

Note. *N* = 123. df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; AIC = Akaike Information Criterion (values are in parentheses)

Model 1 = KIHRP + knowledge sharing + reflexivity + KM technologies + performance

Model 2 = KIHRP + KM technologies + knowledge sharing & reflexivity (combined) + performance

Model 3 = KIHRP & KM technologies (combined) + knowledge sharing + reflexivity + performance

Table 2

Mean, Standard Deviation, Reliability and Correlations of Variables

Variables		*Mean*	*SD*	*AVE*	1	2	3	4	
	Organisation Level (N=74)								
1	Organisation Age	2.87	.76	-	-				
2	Organisation Size	2.16	.52	-	-.17	-			
3	KIHRP	3.47	1.03	.72	-.12	-.07	*(.98)*		
4	Tech. KM Capability	3.10	.88	.77	.16	-.09	.23*	*(.95)*	
	Team Level (N=123)				1	2	3	4	5
1	Knowledge Sharing	3.48	1.01	.75	*(.94)*				
2	Reflexivity	3.04	0.84	.68	.70*	*(.92)*			
3	Team Performance	3.67	1.16	.81	.46*	.60**	*(.97)*		
4	Team Size	6.37	1.97	-	.21*	.16	.15	-	
5	Team Tenure	7.39	1.43	-	-.03	.08	.02	-.01	-

*p < .05, ** p < .01. Values in parentheses show composite reliability. Organisation age and size are categorical variables. KIHRP = Knowledge-intensive Human Resource Management Practices; Tech. KM Capability = Technological Knowledge Management Capability

Table 3

Results for the multilevel direct effects

	KIT Performance	
	Null Model	**Model 1**
Intercept	3.03**	1.76**
Team Level Variables		
Team Tenure	.52 n.s	.29 n.s
Team Size	.47 n.s	-.08 n.s
Team K-Sharing		.37**(.13)
Team Reflexivity		.62**(.17)
Organisation Level Variables		
Organisation Size	.57 n.s	-.23 n.s
Organisation Age	-.96 n.s	.58 n.s
KIHRP		.30**(.05)
ICC	.51** (z=3.23)	
–2 log likelihood	875.68	859.85
AIC	879.68	865.85

*p < 0.05; **p < 0.01. N= 123; KIHRP = Knowledge-intensive Human Resource Management Practices; K-Sharing = Knowledge Sharing; Tech. KM Capability / TKMC = Technological Knowledge Management Capability

Table 4

Results for the Multilevel Mediation and Moderated-Mediation Results

Mediation Effects				**Monte Carlo**	**Monte Carlo**
	effect	**(*SE*)**	***Z***	**CI-95%-LL**	**CI-95%-LL**
KIHRP>>>K-Sharing>>>Performance	.15**	(.05)	3.04	[.0464	.2594]
KIHRP>>>Reflexivity>>>Performance	.16**	(.04)	3.74	[.0857	.2575]
Moderated Mediation					
KIHRP>>>K-Sharing>>>Performance					
Moderator = Tech. KM Capability					
between-index of moderated mediation	Index = .05			[.0042	.0987]
Conditional Indirect Effects:					
@ Low Technological KM Capability	.08	(.03)		[.0122	.1581]
@ High Technological KM Capability	.11	(.05)		[.0043	.2207]
KIHRP>>>Reflexivity>>>Performance					
Moderator = Tech. KM Capability					
Conditional Indirect Effects:					
@ Low Technological KM technology	.06	(.03)		[.0023	.1222]
@ High Technological KM technology	.15	(.05)		[.0390	.2427]

*p < 0.05; **p < 0.01. N = 123; KIHRP = Knowledge-intensive Human Resource Management Practices; K-Sharing = Knowledge Sharing; Tech. KM Capability = Technological Knowledge Management Capability; 95% Monte Carlo confidence intervals is based on 10,000 samples for indirect effects.