



Tomas Bata University in Zlín
Library

Knowledge-oriented leadership, knowledge management behaviour and innovation performance in project-based SMEs. The moderating role of goal orientations

Citation

ZIA, Najam Ul. Knowledge-oriented leadership, knowledge management behaviour and innovation performance in project-based SMEs. The moderating role of goal orientations. *Journal of Knowledge Management* [online]. Emerald Group Publishing, 2020, [cit. 2023-02-07]. ISSN 1367-3270.

Available at

<https://www.emerald.com/insight/content/doi/10.1108/JKM-02-2020-0127/full/html#loginreload>

DOI

<https://doi.org/10.1108/JKM-02-2020-0127>

Permanent link

<https://publikace.k.utb.cz/handle/10563/1009809>

This document is the Accepted Manuscript version of the article that can be shared via institutional repository.



TBU Publications

Repository of TBU Publications

publikace.k.utb.cz

Knowledge-oriented leadership, knowledge management behaviour and innovation performance in project-based SMEs. The moderating role of goal orientations

Najam Ul Zia

Najam Ul Zia is based at the Faculty of Management and Economics, Tomas Bata University in Zlin, Zlín, Czech Republic.

Corresponding author: Najam Ul Zia can be contacted at: zia@utb.cz

Abstract

Purpose - This study aims to examine the association of knowledge-oriented leadership (KOL), knowledge management (KM) behaviour and innovation performance in project-based small and medium-sized enterprises. It investigates the moderation of goal-orientation in the relationship of KOL with knowledge-acquisition, transfer, documentation and application.

Design/methodology/approach - Data are collected from 215 employees in 32 small project-based software firms in Pakistan. Partial least square is used to test the hypotheses.

Findings - KOL is positively associated with KM behaviour and innovation performance. KM mediates the relationship of KOL and innovation performance. Furthermore, goal orientations play a moderating role in the relationship of KOL with knowledge acquisition, transfer and application activities. Originality/value - This study extends the literature on knowledge-based dynamic capabilities, by examining the relationship of KOL, KM behaviour and project-based innovation performance. Investigating the moderation of goal-orientation in the relationship of KOL with KM behaviour is also an original contribution.

Keywords: SME, learning goal orientation, performance goal orientation, knowledge-oriented leadership, knowledge management behaviour

1. Introduction

Knowledge management (KM) is emerging as an area of interest for scholars and practitioners and knowledge-oriented leadership (KOL) is now an established antecedent of KM (Shamim et al., 2017a; Shariq et al., 2018). However, project-based small and medium-sized enterprises (SMEs) do not manage the knowledge and innovations in the same way as larger firms do (Harrington et al., 2019; Zheng et al., 2017). It is not appropriate to view KM in SMEs as a scaled-down version of KM practises in larger firms (Desouza and Awazu, 2006). Unlike larger firms, SMEs are less advanced and they use a mechanistic approach to manage the knowledge. They also lack investments in KM systems (McAdam and Reid, 2001). KM activities in SMEs often happen in an informal way without the support of purposely-designed information and communication system (Baptista Nunes et al., 2006). Particularly in the software firms, where work is usually project-based, KM occurs in small groups in informal ways

and social interdependence plays a crucial role (**Ghobadi and D'Ambra, 2013**). Software firms are knowledge-intensive firms where knowledge is the key strategic resource. It can be domain knowledge, client company knowledge, company knowledge, industry knowledge or knowledge regarding end-user needs and experiences (**Sinkovics et al., 2019**). This kind of knowledge leads to project innovation performance. Innovativeness of software projects is one of the key factors to have a competitive advantage in the software market (**de Souza Bermejo et al., 2016**). Because of the competitive and dynamic nature of the software industry, innovation is key to firm survival. The dynamic nature of the software industry, frequent technological changes, the emergence of new markets and easy entry of new firms make continuous innovation a challenge for software firms (**de Souza et al., 2016**). For project performance and innovativeness in software firms, it is important that employees convert their tacit knowledge into explicit organizational knowledge, which is possible through promoting KM behaviour. KM is essential in a project-based organization; it helps to avoid the repetitions of mistakes and enhances project innovation performance (**Zheng et al., 2017**). However, because of temporary structures and teams, aggregated members and resources, multidisciplinary knowledge in project-based firms, innovation requires different managerial actions as compared to conventional firms (**Brook and Pagnanelli, 2014; Zheng et al., 2017**). However, some employees do not want to practise KM because they see their colleagues as an internal competitor (**Uriarte, 2008**). In this situation, a big portion of knowledge remains in the mind of employees and when they leave the organization, their knowledge also goes with them (**Shamim et al., 2017b, 2017a**). The resource-based view of the firm suggests that organizations should use their strategic resources to achieve sustainable competitive advantage (**Amit and Schoemaker, 1993**). Knowledge-based view articulates that knowledge is one of the most important strategic resources (Grant, 1996), which is valuable and inimitable as well. Therefore, such firms need to think how they can promote KM behaviour amongst their employees without advanced and formal KM systems and programmes because of their small size. Dynamic capabilities (DCs) view suggests that for sustainable competitive advantage firms should have the competence of creating and reconfiguring abilities according to the changing environment (**Teece et al., 1997; Teece, 2007**) such as innovation capability. DCs view also suggests that having a tangible or intangible resource such as knowledge is not enough and firms need appropriate management practises to enhance DCs (**Shamim et al., 2019a, 2019b**). Knowledge-based dynamic capabilities (KBDCs) view suggests that DCs mainly depends on KM (**Zheng et al., 2011**). It makes KBDCs view a relevant theoretical framework for this study.

Yew Wong (2005) identified several critical success factors for KM activities in SMEs and leadership is top of the list. Particularly in smaller firms and groups, the influence of leadership is more prominent. Creative activities are mainly the result of a leader's efforts. This study also emphasizes on the role of leadership in promoting KM activities amongst employees in software developing project-based SMEs. Particularly, the role of KOL in promoting KM at the employee individual level lacks research in the context of SMEs and project-based work environment. Software firms also provide the context of project-based work. Literature suggests that KOL has the potential of influencing knowledge activities and project performance in a project-based work system (**Zhang and Guo, 2019**).

This study targets the KM amongst employees at an individual level and investigates the influence of KOL on KM. Consistent with **Shamim et al. (2017a)**; this study also uses the term KM behaviour for the creation, sharing, documentation and application of knowledge at the individual level of employee.

KM is one of the most prominent influencers of innovativeness (**Kim and Lee, 2013; Donate and de Pablo, 2015**), which makes it extremely important. Therefore, this study argues that KM behaviour amongst employees of small software firms can lead to project innovativeness. Leadership style is one of the most prominent influencers of employee behaviours (Allen et al., 2017). Contingency theories

and situational theories of leadership also suggest that leaders can influence employee behaviours by adapting appropriate leadership behaviours according to the situation and desired outcomes (Robbins et al., 2013). The literature on project-based firms also suggests that leadership style can influence KM activities and project innovation performance (Zheng et al., 2017). However, literature acknowledges the need of specific and specialized constructs of KOL to enhance the KM amongst employees (Donate and de Pablo, 2015; MartZlenn-de Castro et al., 2011; Shamim et al., 2017a). Therefore, this study investigates the connection between KOL and KM behaviour, leading to project innovation performance in small software firms. Existing literature also acknowledges the important role of goal orientation in the relationship of leadership and KM. Therefore, this study argues that employee goal orientation can moderate the relationship of KOL and KM behaviour amongst the employees of software producing SMEs.

Along with KBDCs view, this study also looks into these issues under the lens of social capital theory, which provides appropriate justification for the arguments made. Social capital refers to interpersonal relationship networks inside or outside the organization, which provides resources such as knowledge, information, trust and support for value creation (Bizzi, 2015). In the project-based organizations and the way tangible and intangible resources are exchanged between members is known as project social capital (Zheng et al., 2017). This study argues that KOL can encourage employees to actively use their social capital that can facilitate the KM behaviour in small software firms, leading to project innovativeness. When employees do not want to share knowledge because of considering colleagues as internal competitors, the trust embedded in social capital can encourage them to share knowledge. The agentic perspective of social cognitive theory also supports the stance of this study. Social cognitive theory suggests three modes of agency i.e. direct personal agency, proxy agency and collective agency (Bandura, 2001). Personal agency refers to the individual's own influence on the situation. Proxy agency refers to the efforts and actions of another person to secure the individual's interest and desired outcomes and collective agency refers to the collective effort of a group of people to achieve common gains. This study relies on the personal and proxy agencies to influence the KM behaviour of employees leading to project innovativeness. In this context, KOL is considered as proxy agency factors, goal orientation of individual employee is considered as a personal or individual agency and KM behaviour and project innovativeness are the desired outcomes. The proxy agency factors i.e. KOL is examined as an antecedent of KM behaviour and personal agency factors i.e. employee goal orientations are investigated as a moderator in the relationship of KOL and KM behaviour.

Despite of several studies on KOL, the existing constructs of KOL are general in nature and use established leadership behaviours, for example, Shamim et al. (2017a) use supportive behaviour, consulting, delegating, etc., and Donate and de Pablo (2015) uses a combination of transformational and transactional leadership. Jasimuddin and Naqshbandi (2018) use the items developed by Donate and de Pablo (2015) to measure KOL. Moreover, the studies of Donate and de Pablo (2015) and Jasimuddin and Naqshbandi (2018) are conducted at an organizational level, where the unit of analysis firms. This study investigates individual employees of software SMEs as a unit of analysis and tests project innovativeness as an outcome at the firm level. There are suggestions in the existing literature that employee goal orientations can affect the KM behaviour (Shamim et al., 2016). However, it is unknown how these goal orientations can affect the relationship of KOL and KM behaviour.

This study contributes to the body of knowledge by filling a number of gaps in the existing literature. Research on the KOL is still at initial phases. This study extends the literature on the outcomes of KOL by examining its relationship with KOL with each element of KM behaviour separately and at employee individual level. Leadership is essential for organizational innovativeness through learning and motivating vision towards innovation, however, research on the effectiveness of particular styles of

leadership on innovation in a project-based work system is still infancy (**Zheng et al., 2017**). This study examines the role of employee goal orientation in the relationship of KOL and KM behaviour, which is a missing link in the existing literature. There is a lack of research on KOL and KM in the context of project-based SMEs, this study fills this gap as well. In this way, this study contributes towards KBDCs view of the firm and social capital theory. Social capital is relevant because the KOL construct emphasizes a lot on strong intra-organizational ties, which facilitates KM. Moreover, this study also suggests that social capital can facilitate KBDCs. All the existing studies on the topic of KOL i.e. **Donate and de Pablo (2015)**, **Shamim et al. (2017a)** and **Jasimuddin and Naqshbandi (2018)** are in a European context. The consequences of KOL can be different in other regions and contexts because of a number of factors, for example, because of different work culture values (**Shamim and Abbasi, 2012**).

2. Theoretical framework and hypotheses

One of the systematic ways of looking into these issues is with the lens of KBDCs view and social capital theory. DCs and KM are discussed together in the existing literature as well (**Santoro et al., 2019**). A knowledge-based view argues that knowledge is the main strategic resource of an organization. KBDC view integrates KBV and DCs view assuming knowledge activities such as acquisition, application and combination as the main ingredient of DCs such as innovativeness. Social capital refers to the trust, knowledge and support from relationship networks resources of individuals or organizations. Social capital is part of intellectual capital and places value on social interactions. It makes individuals more valuable in the organization that have created social capital through the communities and groups (**Young, 2012**). It is the collective value resulting from social networks (**Huysman and Wulf, 2006**). In the existing literature, social capital appears as a relational resource (**Nahapiet and Ghoshal, 1998**). It enables the trust, support and provision of knowledge for value creation (**Bizzi, 2015**). Social capital can enhance DCs through KM (**Zheng et al., 2017**). These arguments make social capital theory a very relevant lens to look into the phenomenon to enhance KM behaviour leading to innovation performance. Considering the small size and project-based work system in software firms and stronger influence of leaders because of small size, this study argues that leaders through KOL can encourage employees to practise KM using their social capital to enhance KBDCs e.g. project innovativeness.

The social cognitive theory also supports the arguments made in this study; it applies to social and personal change (**Bandura, 1986**). The origin of social cognitive theory is psychology but it is widely accepted and used in business and management research as well e.g. (**Ozyilmaz et al., 2018; Liguori et al., 2018**). The agentic perspective of social cognitive theory suggests that individuals are self-developing, self-reflecting, self-regulating and proactive (**Bandura, 1986**). The human agency operates in individual, proxy and collective modes. Individual agency refers to one's own influence on the situation and outcomes, the proxy agency is about the influence of others and collective agency refers to the influence of a group of people working together for common goals (**Bandura, 2001**). Humans take active decisions to engage in certain activities intentionally and they have the ability to anticipate the outcomes of their actions. Individuals also have the ability to regulate and construct appropriate behaviours in a given situation (**Pajares et al., 2009**). In the context of this study, KOL is treated as a proxy agent and goal orientation as a personal agent, which influences employee's KM behaviour leading to project innovation performance. The agentic perspective of social cognitive theory can be linked with the context of this study, as leaders can adapt appropriate leadership styles to influence employee KM behaviour. Furthermore, employee's own goal orientation can play an important role in mitigating or intensifying the effect of KOL on KM behaviour.

2.1 Knowledge management behaviour

KM originates from the resource-based theory of the firm, which emphasizes on the use of a firm's strategic resources to gain competitive advantage (**Dayan et al., 2017; Donate and de Pablo, 2015**). According to the knowledge-based theory of the firm, the most important strategic asset of the firm is the knowledge and the basic purpose of any organization is to transform the knowledge into the commercial value (**Dayan et al., 2017; Grant, 1996; Zack et al., 2009**). There is consensus amongst researchers on the fact that organizations need to manage their knowledge resource effectively, to survive and grow in today's competitive environment (**Dayan et al., 2017**).

KM is the conscious strategy to get the knowledge to the people and helping them to share and apply the knowledge to enhance organizational performance (**Giampaoli et al., 2017**). Nonaka and Takeuchi (1995) operationalized the KM as a process of knowledge creation, acquisition, sharing and application. Grant (1996) argues that the creation of knowledge is an explorative activity and storage, sharing and application are exploitative in nature and aims at leveraging the existing knowledge. KM can be practised at both individual and organizational levels and for both the levels, the willingness of individual employees is important (**Yang and Wan, 2004**). Acquiring, transferring, storing and applying the knowledge at an individual level can be labelled as KM behaviour (**Shamim et al., 2017a**).

Knowledge acquisition means collecting new knowledge from internal and external sources and it can also result into the replacement of existing organizational knowledge, whether implicit or explicit (**Shamim et al., 2017a**). The creation of new knowledge from scratch is more often an internal activity based on research and development (**Darroch and McNaughton, 2002**). As organizations create and acquire knowledge, there are chances of losing the acquired knowledge, in this situation it is important to store the acquired knowledge (**Alavi and Leidner, 2001**). Knowledge storing/documenting activities may include organizing and structuring of knowledge to maintain the organizational memory, either by codifying the knowledge into standard operating procedures, storing in an expert system or information storage in electronic databases (**Alavi and Tiwana, 2003**). Knowledge transfer activities allow the employees to donate their own knowledge to other members in the organization. Organizations need formal or informal communication channels to enable knowledge sharing in the organization (**Alavi and Leidner, 2001**). Knowledge application refers to the utilization of knowledge for problem-solving (**Zack et al., 2009**).

Literature reports several outcomes of KM including problem-solving skills, performance (**Vrontis et al., 2017**), team performance, financial performance (**Giampaoli et al., 2017**), **innovative capability** (**Saenz et al., 2012**) and job performance (Masa'deh et al., 2017), etc. So it is important to investigate the factors having the potential to enhance the KM behaviour amongst employees.

Different leadership styles are discussed as an antecedent of KM in numerous existing studies i.e. KOL (**Donate and de Pablo, 2015; Shamim et al., 2017a; Naqshbandi and Jasimuddin, 2018**), transactional leadership (**Politis, 2002**), mentoring, facilitating and innovative role modelling (Yang, 2010), supportive, consulting and delegating behaviour (**Singh, 2008**), charismatic and human-oriented leadership (**De Vries et al., 2010**). The most investigated and established leadership style, as an antecedent of KM, is transformational leadership e.g. (**Birasnav, 2014**). KOL includes the leadership behaviours that make the construct of transformational leadership i.e. intellectual stimulation, individualistic consideration, providing vision and role modelling (**Donate and de Pablo, 2015; Shamim et al., 2017a**).

2.2 Knowledge-oriented leadership

Research on KOL is still at initial phases. **Donate and de Pablo (2015)** highlight the need of specific type of organizational leadership style, especially designed to facilitate the KM amongst employees. **Donate and de Pablo (2015)** designed the initial construct of KOL by combining the transformational and transactional leadership and tested the impact of KOL on KM and innovative performance, in the context of Spanish technology firms. They suggest the positive affect of KOL on KM and innovative performance. A combination of transactional and transformation leadership is also supported by existing literature, as a knowledge-oriented manager focuses on learning, mentoring, intellectual stimulation and rewarding the employees for knowledge sharing, storing and application (**Williams and Sullivan, 2011**). Literature acknowledges the positive affect of transformational and transactional leadership on KM e.g. (**Birasnav, 2014**).

Shamim et al. (2017a) extend the construct of KOL by adding additional leadership behaviour in it including supportive, delegating, stimulating knowledge diffusion and mentoring, facilitating and consulting. Supportive behaviour refers to fulfilling the needs of followers and creating a friendly environment (**Levine and Hogg, 2010**). Delegating refers to the transfer of responsibility with authority (**Jones et al., 2000**). Stimulating knowledge diffusion makes communication more transparent, open and supportive (**De Jong and Den Hartog, 2007**). Facilitating refers to the provision of resources e.g. time and money. Mentoring is assisting the subordinate in routine work, investing time and effort in training and sharing knowledge and experience regularly (**Shamim et al., 2017a**). Consulting behaviour ensures that importance is given to the opinion of subordinates and decisions are made after considering the suggestions of employees (**De Jong and Den Hartog, 2007**). Recognizing refers to the acknowledgement of employee efforts in any particular task i.e. KM performance in the context of his study (**De Jong and Den Hartog, 2007**). The study of **Shamim et al. (2017a)** tested the mediation of work attitudes including commitment, creative self-efficacy and work engagement, in the relationship of KOL and KM. They argue that KOL directly affects these work attitudes and the mediation of work attitudes is also supported. The study of **Shamim et al. (2017a)** is conducted in the context of hospitality firms in the UK. The direct positive affect of KOL on work attitudes provides motivation to explore more behavioural and psychological employee outcomes of KOL. **Shamim et al. (2017a)** take the motivation of extending the KOL construct by adding additional behaviours from contingency theories of leadership, for example, the path-goal theory (House, 1971). Path goal theory is a contingency theory, which suggests that leadership effectiveness is dependent on the behaviours adapted by leaders in different scenarios. **Shariq et al. (2018)** use the foundations of **Shamim et al. (2017a)** and **Donate and de Pablo (2015)** and investigated KOL as an antecedent of KM and moderation of emotional intelligence in this relationship. The study of **Jasimuddin and Naqshbandi (2018)** also uses the foundations of **Donate and de Pablo (2015)** and reports the positive effect of KOL on KM capability and open innovation, in the context of multinational firms in France. Study of **Donate and de Pablo (2015)**, **Jasimuddin and Naqshbandi (2018)** and **Mohsenabad and Azadehdel (2016)** focus on the manufacturing firms, whereas **Shamim et al. (2017a)** investigate the hospitality sector. Moreover, the studies of **Donate and de Pablo (2015)** and **Jasimuddin and Naqshbandi (2018)** focus on KM at organizational level, while this study emphasizes on KM behaviour at employee individual level in small software firms.

2.3 Employee goal orientation

The origin of goal orientations is in educational psychology (Eison, 1979). There are two different dispositional goal orientations i.e. it can be learning and performance goal orientation (Dweck, 1986;

Shamim et al., 2017b). The concept of goal orientation is not limited to educational psychology; it is also discussed in the management literature e.g. **Kim and Lee, 2013; Kohli et al., 1998**. Learning-oriented individuals prefer challenging tasks and consider learning as the main achievement and performance-oriented individuals try to show performance by achieving the assigned objectives (**Kim and Lee, 2013; Shamim et al., 2017b**). Amongst these goal orientations, learning orientation is stronger and the well-established antecedent of KM behaviour (**Kim and Lee, 2013; Yang, 2010**), **Shamim et al. (2017b)** also report that there is no significant effect of performance goal orientation on KM. However, existing literature does not say enough on the moderating role of goal orientation in the relationship of KOL with KM behaviour.

2.3.1 Learning orientation

Learning-oriented employees prefer to continuously improve their set of skills and capabilities, and they possess flexible capabilities (Dweck, 1986). Such employees are eager to learn new things and they prefer to involve in challenging assignments. They also evaluate their performance by comparing the current performance with past performances. Learning-oriented employees tend to show performance by improving the set of skills and capabilities (**Kohli et al., 1998; Shamim et al., 2017b**).

Literature acknowledges the importance of learning goal orientation and reports several positive outcomes. For example, feedback-seeking tendency (VandeWalle and Cummings, 1997), self-regulation (VandeWalle et al., 1999), psychological capital, employee creativity (Huang and Luthans, 2015) and leadership recognition (Lee, 2017). KM behaviour is also reported as an outcome of learning orientation in a number of studies and the mediating role of learning orientation is reported. **Shamim et al. (2017b)** argue that learning orientation positively affects KM and it mediates the relationship of supervisory orientation and KM. **Kim and Lee (2013)** report a positive affect of learning orientation on knowledge sharing amongst employees. Yang (2010) also argues that a learning attitude can lead to KM behaviours amongst employees.

2.3.2 Performance orientation

Unlike learning-oriented employees, performance-oriented employees do not want to be involved in challenging tasks. They prefer to reflect their capabilities by showing performance and outperforming others in the organization (**Kohli et al., 1998**). They strive to show performance by achieving the objectives and avoiding challenging tasks where they feel that they do not have the relevant competency (**Kim and Lee, 2013**). They do not strive to enhance their set of skills and capability, but they try to do the tasks in which they are already expert and confident, to show their high performance (**Shamim et al., 2017a**). Unlike learning-oriented employees, they do not compare their performance with their own past performance, but they prefer to compare the performance with others (**Kim and Lee, 2013**).

2.4 Project-based innovation performance

Innovation refers to the creation of new products and services or significant improvement in existing ones, new or improved production or delivery processes, marketing methods and managerial processes (**Manley et al., 2009**). It is defined as the generation, development and implementation of new ideas for commercial benefits (**Park et al., 2004; Zheng et al., 2017**). In the context of project-

based software firms, innovation is considered as a process of achieving outcomes in software innovations by new organizational structure and new products and services (**de Souza Bermejo et al., 2016**). New organizational structures refer to new or significantly improved processes (**Carlo et al., 2011**), revamped organizational processes (**Johannessen et al., 2001**) and modified marketing strategies (Manu and **Sriram, 1996**).

Project-based innovation performance includes improvement in the implemented process of projects, optimization of decision-making processes, quality improvement of projects and cost reduction in projects (**Zheng et al., 2017**). Developing and commercializing innovative software solutions are greatly dependent on human capital, which requires a range of knowledge (**Mehta, 2008; de Souza Bermejo et al., 2016**). When it comes to KM and innovation through human capital, social capital becomes a relevant theoretical lens to look into (**Zheng et al., 2017**).

2.5 Knowledge-oriented leadership, knowledge management behaviour and project-based innovation performance

Following the social capital theory, it can be argued that relationship network within or outside the organization is the source of knowledge (**Bizzi, 2015**) and leaders should create the environment for the exploitation of social capital. The social cognitive theory also suggests that change in human behaviour and attitude can be influenced by proxy agents i.e. by others (**Bandura, 2001**). In this way, KOL as a proxy agent is in a position to influence the KM behaviour of employees. Literature also suggests that leadership is an important influencer of DCs (**Shamim et al., 2019a, 2019b**). **Donate and de Pablo (2015)** argue that KOL positively affects knowledge acquisition, transfer, storage and application amongst employees. **Shamim et al. (2017a)** validate this finding with a different population, which increases the generalizability of the finding. However, **Shamim et al. (2017a)** consider the construct of KM behaviour as a whole, instead of testing each behaviour separately. **MartZlenn-de Castro et al., 2011** acknowledges the positive affect of KOL on knowledge acquiring, storing, transferring and application. **Shamim et al. (2016)** also suggest the positive relationship of KOL and KM amongst employees. Most recently, Shariq et al. (2018) and **Jasimuddin and Naqshbandi (2018)** reported the positive relationship of KOL and KM. The motivational elements of KOL, for example, knowledge specific support and reward, create an environment, which encourages knowledge acquisition, transfer and conversion of knowledge into ideas (Nonaka and Takeuchi, 1995). This reasoning also applies to knowledge exploitation activities such as knowledge storing (**Donate and de Pablo, 2015**). Through a more transactional approach, KOL can intensify the willingness to exploit the existing knowledge (Miller et al., 2007), through storage, transfer and application activities (**Donate and de Pablo, 2015**). So, it is now established in the existing literature that KOL positively affects KM behaviour amongst employees (**Shariq et al., 2018**). According to contingency and situational theory of leadership, leaders can influence employee behaviour by adapting the leadership style accordingly. Particularly in a project-based work environment, KOL can facilitate knowledge activities (**Zhang and Guo, 2019**). **Zheng et al. (2017)** also argued that leaders can influence knowledge activities in project-based organizations by using social capital. This study refines the construct of KOL by making it more knowledge specific. Therefore, the following are the hypotheses:

H1a. There is a positive association between KOL and knowledge acquisition activities amongst employees.

H1b. There is a positive association between KOL and knowledge transfer activities amongst employees.

H1c. There is a positive association between KOL and knowledge storing activities amongst employees.

H1d. There is a positive association between KOL and knowledge application activities amongst employees.

Knowledge activities are amongst the most prominent predictors of innovativeness (Cui, Wu and Tong, 2018; Donate and de Pablo, 2015; Kim and Lee, 2013). In the context of this study, the literature supports the influence of knowledge activities on innovation in a project-based work system (Cui et al., 2018) and in SMEs (Benitez et al., 2018). Donate and Snchez de Pablo (2015) argues that knowledge acquisition, transfer, storing and application activities are positively associated with innovation performance. Kim and Lee (2013) also argue that knowledge collecting and donating activities are associated with innovativeness. Literature reports the positive relationship of KOL and innovation (Jasimuddin and Naqshbandi, 2018) and KM can mediate the relationship of innovation performance and its antecedents (Bhatti et al., 2020) Particularly in the context of project-based firms, KM is an established predictor of project-based innovative performance (Zheng et al., 2017). Literature also reports the association of knowledge activities with innovations in software firms (de Souza Bermejo et al, 2016). Zheng et al. (2017) argue that transformational and transaction leadership styles are positively associated with project-based innovation performance and KM mediates the relationship. Transformational and transaction leadership styles are crucial components of KOL. Donate and de Pablo (2015) report the indirect relationship of KOL and innovation performance through the mediation of KM behaviour (Donate and de Pablo, 2015). These arguments lead to the following hypotheses:

H2. KOL is positively associated with project-based innovation performance.

H3. KM behaviour mediates the association of KOL and project-based innovation performance.

2.6 Knowledge-oriented leadership, knowledge management behaviour and goal orientations

According to the agentic perspective of social cognitive theory, personal/individual agents are important to influence human action (Bandura, 2001). Personal/individual agents are factors that belong to one's own self e.g. goal orientation. The social cognitive theory says that people focusing more on performance tend to follow goals of progressive improvement, even though they have not been motivated to do so. Furthermore, the social cognitive theory suggests that those employees who do not set goals for themselves achieve no change, neither in competences nor in the effort and as a result they are outperformed by those employees who set some goals for themselves with the aim of progressive improvement (Bandura, 1991).

Goal orientations are stable traits having the potential of moderating the relationship of different variables e.g. (Marjoribanks and Mboya, 2004). Goal orientations can influence creativity (Hirst et al., 2009), which is a prerequisite of innovation performance. The relationship of learning orientation with KM amongst employees is also established in the existing literature. Kim and Lee (2013) argue that learning orientation can positively affect knowledge sharing amongst employees. Shamim et al. (2017b) also reported a positive relationship of learning goal orientation and KM amongst employees. Employees with learning orientation are eager to learn new things and like to do challenging new

assignments. It increases their tendency to acquire, share and apply the knowledge (Shamim et al., 2016). Therefore, there are possibilities of the moderating effect of goal orientation in the relationship of KOL and KM behaviour. Lee (2017) also argues that learning goal orientation fosters leadership recognition. Employees with learning goal orientation have greater motivation to acquire, transfer, store and apply the knowledge (Shamim et al., 2017b). Learning-oriented employees are concerned about the development of skills and knowledge, not only for them but also for others in the organization and donate their knowledge to others (Matzler and Mueller, 2011). Based on these arguments, it is logical to assume that, the effect of KOL on knowledge acquiring, transferring, storing and application activities, is stronger in the case of employees with learning goal orientation. Therefore, the following are the hypotheses:

H4a. High level of employee learning orientation increases the positive influence of KOL on knowledge acquisition activities.

H4b. High level of employee learning orientation increases the positive influence of KOL on knowledge transfer activities.

H4c. High level of employee learning orientation increases the positive influence of KOL on knowledge storing activities.

H4c. High level of employee learning orientation increases the positive influence of KOL on knowledge application activities.

On the other hand, performance-oriented employees tend to outperform others and are usually not interested in challenging and novel activities (Kohli et al., 1998). Their motivation of doing the tasks in which they are already experts can hinder their motivation to acquire, store and apply new knowledge. They want to outperform others and compete with colleagues in performance, which hinders their intentions to transfer their knowledge to the colleagues and also to store their knowledge into organizational memory. Many employees do not want to share their knowledge because they think it will reduce their chances of promotion (Uriarte, 2008; Bock et al., 2005). On the basis of these arguments following are the hypotheses:

H5a. High level of employee performance orientation decreases the positive influence of KOL on knowledge acquisition activities.

H5b. High level of employee performance orientation decreases the positive influence of KOL on knowledge transfer activities.

H5c. High level of employee performance orientation decreases the positive influence of KOL on knowledge storing activities.

H5d. High level of employee performance orientation decreases the positive influence of KOL on knowledge application activities.

3. Methodology

This is an empirical study and follows the quantitative strategies to analyse the impact of KOL on employee KM behaviour leading to project-based innovation performance in small software firms and the moderating role of employee goal orientations (**Figure 1**). This study follows the deductive and cross-sectional approach. The deductive approach suggests the development of hypotheses based on established theories and designing the research strategy to test the hypotheses (Wilson, 2014). Cross-sectional research uses cross-sectional data, which is collected at a specific point in time and this approach is very common in social sciences e.g. (**Birrell and Waters, 2007; Capon et al., 2015**).

3.1 Data collection and sample

The population of the study comprises of the employees of software SMEs in Pakistan. According to small and medium enterprise development authority (SMEDA) Pakistan, SMEs constitute nearly 90% of all the enterprises in Pakistan; they use 80% of the workforce; and their share in the annual GDP is 40% approximately.

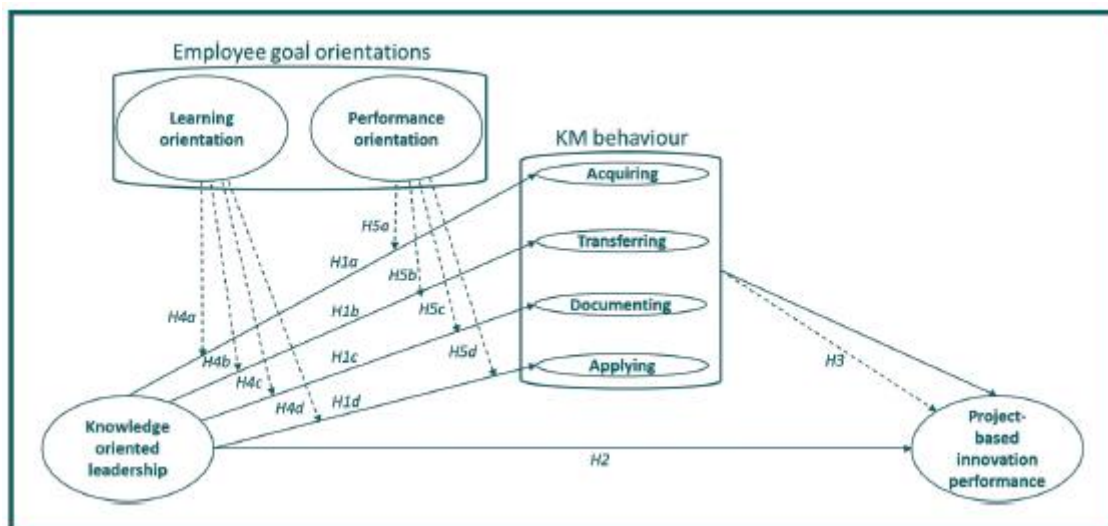


Figure 1 The conceptual model (dotted lines indicates the moderating and mediating effects)

SMEDA is the premier institution of Pakistan. It operates under the ministry of industries and Production. SMEDA defines SME as a company with up to 250 employees, paid-up capital up to PKR 25m and annual sales of up to PKR 250m. A list and contact details of software firms in Pakistan is available at the website <http://www.pseb.org.pk/search-directory>. An initial search reveals the details of 343 software firms, 100 firms are randomly selected and requested for participation in the survey. Finally, 32 firms consented to participate. Questionnaires were distributed amongst these firms, to be filled by their employees. It was made sure that all the firms in the survey follow a project-based work system. It is important to note that the unit of analysis in this study is an individual employee and not the firm. Questionnaires were provided to leaders/ owners and they distributed these questionnaires amongst employees in each SME.

For methodological parsimony, this study tends to maintain the uniformity amongst sample demographics i.e. employee work experience age and firm size. All the companies are SMEs with less

than 250 employees and PKR 25m paid-up capital. **Table 1** shows the sample characteristics. Most of the employees participated in the survey are middle level (43%) and front liners (51%), between 21 to 25years old (39%) and 26 to 30years old (48%). Majority of respondents have an undergraduate (58%) and postgraduate (35%) level of qualification

Firms were initially contacted through email and follow-up telephone calls. In total, 747 questionnaires were distributed and in response, 264 questionnaires were received, out of which 215 were valid and, hence, used for data analysis.

3.1.1 Common method biased

To reduce the common method bias, the author made sure the anonymity and confidentiality of the information collected. Furthermore, the author randomized the order of items in the questionnaire and collected data in two waves (**Podsakoff et al., 2003**). Harman single factor test is used to check the common method biased and results show that a single factor explains 34.79% of the total variance, which is not a major concern and is unlikely to confound the interpretation of the results in this study (**Donate and de Pablo, 2015**).

3.2 Questionnaire and measures

This study adapted the modified version of **Shamim et al. (2017b)** to measure KOL. A total of 16 items are adapted from the study of **Shamim et al. (2017a)** to measure KOL. To measure KM behaviour, 12 items are adopted from the study of **Shamim et al. (2017a)**. Project-based innovation performance is measured using four items from **Zheng et al. (2017)**. All these items are measured using a seven-point Likert scale ranges from 1 = never, to 7 = always.

Sujan et al. (1994) designed the scale to measure the goal orientation of employees (Sujan et al., 1994). This study adapted five items from the study of Sujan et al. (1994) to measure learning goal orientation and four items to measure performance goal orientation. Goal orientations are measured by using a seven-point Likert scale ranging from 1 = strongly disagree, to 7 = strongly agree.

3.3 Data analysis

This study analyses the data using quantitative techniques, following the deductive approach. The reliability of factors is examined through Cronbach's alpha. Factor analysis is conducted to analyse the convergent and discriminant validity. To analyse the model and to test the hypotheses, partial least square (PLS) is employed using SmartPLS 3.0. This study is examining the modified construct of KOL. In this case, a variance-based approach is suitable (**Shamim et al., 2017a**). PLS is a variance-based approach and imposes fewer restrictions on distribution and sample size (Chin et al., 2003). It is a structural equation modelling technique that analyses the theoretical and measurement model at the same time (Chin, 1998). It is also an effective way to resolve multicollinearity issues (Chin et al., 2003).

Table 1 Sample characteristics

Firm characteristics (n = 32)	Respondents from each firm		Respondent characteristics (n = 215)		
<i>Age</i>		Firm 1	8	<i>Managerial level of respondent</i>	
1 to 5 years	3	Firm 2	6	Top managers (CEO/GM/MD)	6%
6 to 10 years	12	Firm 3	12	Middle manager (project manager/team leaders)	43%
11 to 15 years	8	Firm 4	8	Front line employees (developer/programmer/customer consultant)	51%
16 to 20 years	7	Firm 5	15		
More than 20 years	2	Firm 6	5		
		Firm 7	10	<i>Age of respondents</i>	
<i>Number of employees</i>		Firm 8	8	18 to 20 years	9%
1 to 50	18	Firm 9	12	21 to 25 years	39%
51 to 100	10	Firm 10	7	26 to 30 years	48%
101 to 150	2	Firm 11	3	More than 30 years	4%
150 to 200	1	Firm 12	7		
201 to 250	1	Firm 13	3	<i>Education</i>	
		Firm 14	8	Primary school	2%
<i>Ownership status</i>		Firm 15	2	Secondary/high school	5%
Sole proprietor	13	Firm 16	5	Undergraduate	58%
Private limited	11	Firm 17	4	Postgraduate	35%
Partnership	8	Firm 18	9		
		Firm 19	11		
		Firm 20	7		
		Firm 21	10		
		Firm 22	3		
		Firm 23	5		
		Firm 24	4		
		Firm 25	8		
		Firm 26	2		
		Firm 27	3		
		Firm 28	6		
		Firm 29	4		
		Firm 30	7		
		Firm 31	9		
		Firm 32	4		

Notes: CEO = Chief executive officer; GM = general manager; MD = managing director

4. Results

4.1 Construct reliability and validity

The reliability of the factors is examined through Cronbach's alpha and results show that Cronbach's alpha for each construct is greater than 0.7, which is an indication of high reliability and internal constancy (George, 2011). To establish the convergent validity, factor loadings of the construct should be greater than 0.65, the average variance extracted (AVE) should be more than 0.5 and composite reliability needs to exceed 0.7 (Donate and de Pablo, 2015; Fornell and Larcker, 1981). Matzler et al. (2008) argue that factor loading greater than 0.6 are acceptable. All the constructs meet the requirements i.e. factors loadings for the construct of knowledge acquisition ranges from 0.73 to 0.87, knowledge transfer ranges from 0.66 to 0.70, knowledge documentation ranges from 0.63 to 0.82, knowledge application ranges from 0.73 to 0.83. KOL loading ranges from 0.73 to 0.88. In the case of employee learning goal orientation, the range of loading is from 0.77 to 0.79. For performance orientation, loading ranges from 0.84 to 0.89. Factor loadings for project-based innovation range from 0.78 to 0.88. AVE of all the constructs exceeds 0.5, as shown in **Table 2**. CR of each construct is also meeting the minimum requirement of exceeding 0.5. Based on these results convergent validity is established.

Table 2 Convergent validity

<i>Factors</i>	<i>Items</i>	<i>Factor loadings</i>	<i>AVE</i>	<i>CR</i>
Knowledge acquisition	KA1	0.87	0.68	0.86
	KA2	0.73		
	KA3	0.86		
Knowledge transfer	KT1	0.70	0.50	0.73
	KT2	0.69		
	KT3	0.66		
Knowledge documentation	KD1	0.82	0.62	0.83
	KD2	0.89		
	KD3	0.63		
Knowledge application	KAP1	0.76	0.60	0.82
	KAP2	0.83		
	KAP3	0.73		
KM behaviour	Knowledge acquisition	0.89	0.63	0.87
	Knowledge transfer	0.73		
	Knowledge documentation	0.85		
	Knowledge application	0.67		
KOL	KOL1	0.79	0.67	0.96
	KOL2	0.74		
	KOL3	0.85		
	KOL4	0.85		
	KOL5	0.77		
	KOL6	0.84		
	KOL7	0.88		
	KOL8	0.83		
	KOL9	0.87		
	KOL10	0.83		
	KOL11	0.84		
	KOL12	0.79		
	KOL13	0.79		
	KOL14	0.74		
	KOL15	0.73		
	KOL16	0.76		
Employee learning goal orientation	ELGO1	0.77	0.64	0.87
	ELGO2	0.80		
	ELGO3	0.83		
	ELGO4	0.79		
Employee performance goal orientation	PGO1	0.89	0.77	0.91
	PGO2	0.90		
	PGO3	0.84		
Project-based innovation performance	PBIP1	0.88	0.60	0.85
	PBIP2*	0.50		
	PBIP3	0.74		
	PBIP4	0.71		

Note: *_Deleted items

To establish the discriminant validity, the AVE of each construct should be greater than the squared correlation amongst the constructs (Fornell and Larcker, 1981; **Shamim et al., 2017a**). Results in **Table 3** show that the AVE of each construct is greater than the squared correlation amongst the constructs, which indicates discriminant validity.

Results of factors analysis through variance-based, PLS approach using SMARTPLS software, reliability and validity testing reflect the quality of the research model, furthermore, the values of R^2 also meet the minimum requirements, i.e. for knowledge acquisition R^2 is 0.71, for transfer, it is 0.40, for documentation, it is 0.64 and for knowledge application, R^2 is 0.36. R^2 for project-based innovation

performance is 0.70. Value of X^2 for the model examining the moderation of goal orientation in the relationship of KOL and KM behaviour is 2,233.39 and 1,814.33 for model examining the mediation of KM behaviour in the relationship of KOL and project-based innovation performance.

Table 3 Discriminant validity

Factors	1	2	3	4	5	6	7	8
1. KOL	0.67							
2. Knowledge acquisition	0.65	0.68						
3. Knowledge transfer	0.60	0.59	0.50					
4. Knowledge documentation	0.66	0.67	0.49	0.62				
5. Knowledge application	0.54	0.47	0.35	0.46	0.60			
6. Learning orientation	0.59	0.57	0.43	0.61	0.48	0.64		
7. Performance orientation	-0.35	-0.32	-0.28	-0.44	-0.26	-0.40	0.77	
8. Project-based innovation performance	0.65	0.66	0.25	0.50	0.29	0.39	-0.24	0.60

4.2 Path analysis and hypothesis testing

Path analysis and hypothesis testing are conducted through the PLS method, using Smartpls 3.0 software package. **Table 4** explains the results for the moderation role of goal orientation in the relationship of KOL and KM activities separately and the results of the mediating effect of KM behaviour as a whole in the relationship of KOL and project-based innovation performance. Firstly, the direct effect of KOL on knowledge acquisition, transfer, documentation and application is examined. Results reveal that KOL positively and significantly affects knowledge acquisition ($\beta = 0.67$, $p < 0.001$), transfer ($\beta = 0.46$, $p < 0.001$), documentation ($\beta = 0.46$, $p < 0.001$) and application ($\beta = 0.32$, $p < 0.001$). These findings suggest the acceptance of H1a-H1d. Then the moderating effects of employee

Table 4 The path analysis

Path	Direct effect β (t-value)	Indirect effect β (t-value)	Total effect β (t-value)	Moderating effect β (t-value)	Hypothesis	Result
Knowledge acquisition \leftarrow KOL	0.67*** (13.94)				H1a	Accepted
Knowledge transfer \leftarrow KOL	0.46*** (7.35)				H1b	Accepted
Knowledge documentation \leftarrow KOL	0.46*** (7.02)				H1c	Accepted
Knowledge application \leftarrow KOL	0.32*** (3.63)				H1d	Accepted
Project-based innovation performance \leftarrow KOL	0.81*** (48.83)				H2	Accepted
Project-based innovation performance \leftarrow KM behaviour \leftarrow KOL	0.46*** (6.74)	0.35*** (5.81)	0.81*** (41.72)		H3	Accepted
(Knowledge acquisition) \leftarrow (learning orientation) (KOL)				0.16** (3.75)	H4a	Accepted
(Knowledge transfer) \leftarrow (learning orientation) (KOL)				-0.03 (0.60)	H4b	Rejected
(Knowledge documentation) \leftarrow (Learning orientation) (KOL)				-0.11 (1.96)	H4c	Rejected
(Knowledge application) \leftarrow (Learning orientation) (KOL)				0.04 (0.57)	H4d	Rejected
(Knowledge acquisition) \leftarrow (performance orientation) (KOL)				-0.11* (2.53)	H5a	Accepted
(Knowledge transfer) \leftarrow (performance orientation) (KOL)				-0.20** (3.21)	H5b	Accepted
(Knowledge documentation) \leftarrow (performance orientation) (KOL)				0.07 (1.56)	H5c	Rejected
(Knowledge application) \leftarrow (performance orientation) (KOL)				-0.18* (2.49)	H5d	Accepted

learning goal orientation and performance orientation in the relationship of KOL with knowledge acquisition, transfer, documentation and application are examined. Results support H4a but reject H4b-H4d, as the moderating effect of employee learning goal orientation, is significant only in the relationship of KOL with knowledge acquisition ($\beta = 0.16$, $p < 0.05$). The moderating effect of learning orientation in the relationship of KOL with knowledge transfer, documentation and application is not significant. Results reveal that the performance orientation negatively affects the relationship of KOL with knowledge acquisition ($\beta = -0.11$, $p < 0.1$), transfer ($\beta = -0.20$, $p < 0.05$) and application ($\beta = -0.18$, $p < 0.1$). Results do not support the negative moderation of performance orientation in the relationship of KOL with knowledge documentation. These findings lead to the acceptance of H5a-H5c but reject H5d.

Results also support the association of KOL and project-based innovation performance ($\beta = 0.81$, $p < 0.001$). Results also support the indirect association of KOL and project-based innovation through the mediation of KM behaviour ($\beta = 0.35$, $p < 0.001$). After entering KM behaviour as a mediator in the relationship of KOL and project-based innovation, the direct effect of KOL on project-based innovation reduced from ($\beta = 0.81$, $p < 0.001$) to ($\beta = 0.46$, $p < 0.001$) but the relationship is still significant. It indicates that there is partial mediation. These findings support H2 and H3.

5. Discussion and conclusion

The association of KOL with knowledge acquisition, transfer, documentation and application is positive and significant. These results are consistent with **Shamim et al. (2017b)** and **Donate and de Pablo (2015)**, suggesting that firms characterized by KOL are better in promoting KM behaviour amongst employees. However, **Shamim et al. (2017b)** used the construct of KM behaviour as a whole, without analysing each element separately and **Donate and de Pablo (2015)** discussed KM at organizational level. This study discusses the KM behaviour of the individual employee and considers each KM activity separately as well, in the context of small software firms following a project-based work system. Consistent with **Donate and de Pablo (2015)** and **Zheng et al., 2017** our results support the mediation of KM behaviour in the relationship of KOL and project-based innovation performance.

Results of moderation analysis support the positive moderation of learning orientation in case of knowledge acquisition only. It is arguable to assume that, it might be due to the small size of firms. In small firms, the impact of leadership is more prominent and business outcomes heavily rely on leadership (Greiner, 1972). Rejection of hypotheses H4b-H4d suggests that employee learning goal orientation is not a strong moderator in the relationship of KOL and outcomes, in fact, KOL is a more prominent predictor of KM in SMEs as compared to large firms. These findings are different from existing research on this topic in the context of large firms, as learning orientation moderates this relationship in a larger firm (**Shariq et al., 2018**). In the case of performance orientation, results support the negative moderation in the relationship of KOL with knowledge acquisition, transfer and application. It means that employee performance orientation weakens the positive association of KOL with knowledge acquisition, transfer and application.

5.1 Managerial implications

This study has important implications for SME owners and managers. It presents a more specific and knowledge focused construct of KOL, as compared to the previous constructs in the literature. This study suggests the SME leaders the ways to enhance employee's KM behaviour and project

innovativeness using KOL. Leaders and managers can enhance the KM behaviour of their employees by adapting this construct. For example, a knowledge-oriented leader encourages employees to talk about new knowledge, devotes a great deal of time to enhance employee's knowledge, suggests new alternatives, encourages employees to look at the problems from different angles. Employees are rewarded for their efforts to generate knowledge. Knowledge-oriented leaders also share their own knowledge and experience with the employees. Moreover, they enhance KM behaviour amongst employees, by healthy mentoring, consulting, delegating, open transparent communication, assistance and day to day activities and by allowing employees to use their knowledge to alter the decision. This phenomenon results in very favourable organizational and behavioural outcomes i.e. service quality, innovations (Kim and Lee, 2013), productivity, organizational and financial performance, employee participation, team performance and improved problem-solving (Alavi and Leidner, 2001), etc. KOL influences project innovativeness through the mediation of KM behaviour. Results suggest partial mediation by suggesting that KOL can enhance project innovative performance even without KM behaviour amongst employees. However, KM behaviour carries most of the effect of KOL to project innovativeness. This study has implications for the human resource (HR) department as well because HR plays a crucial role in developing the organizational policies and culture that play a significant part in developing organizational and individual behaviours (Shamim and Abbasi, 2012). Different HR tools can be used to promote KOL and KM behaviour such as linking KM behaviour and KOL orientation with the performance appraisal of both employee and manager.

A unique implication of this study, which is different from research on this topic in the context of large firms is that leaders in SME should not rely more on employee goal orientations because of stronger direct influence of KOL on KM. Results do not support moderation of learning goal orientations in the relationship of KOL and KM and this finding is different than research in the context of large firms (Shariq et al., 2018). In a project-based environment where employees usually work in temporary teams and they carry interdisciplinary knowledge, which can be very different than other team members (Johnson et al., 2014). Because of temporary and short-term teams, project managers or team leaders should encourage the trust, support and strong social ties amongst the team members to promote KM amongst members for more innovativeness. For example, in a project-based software firm, team members dealing with customers and collecting software requirements can share the knowledge related to client profile and associated challenges, with the programming team.

5.2 Contribution to the body of knowledge

This study contributes towards KM by extending the literature on the outcomes of KOL by examining its relationship with each element of KM behaviour separately and at employee individual level. Earlier studies discuss the relationship of KOL and KM at organizational level or considered the construct of KM behaviour as a whole, without examining each element separately (Shamim et al., 2017b). Investigating the moderating role of employee learning goal orientation and performance goal orientation in the relationship of KOL with knowledge acquisition, transfer, documentation and application is also an important and original contribution of this study. Examining the moderation of goal orientation in the relationship of KOL and KM shows unique findings in the context of SMEs, which are different than existing research on large enterprises. This study suggests that learning goal orientation does not moderate the relationship of KOL and KM, which might be because of greater prominence of leadership in SMEs as compared to the larger firms (Greiner, 1972). It also contributes towards KBDCs view by establishing the mediation of KM behaviour in the relationship of KOL and project-based innovation performance. It is one of the rare studies to investigate these issues in the context of project-based SMEs. There is a lack of research on KOL, KM and innovations in the context

of SMEs, particularly in South Asian and underdeveloped economies. This study fills this empirical gap as well. Most of the existing studies on the topic of KOL i.e. **Donate and de Pablo (2015)**, Shamim et al. (2017a) and Jasimuddin and Naqshbandi (2018) are in the European context. Another research implication of this study is that researchers need to develop a more specific and specialist KOL construct instead of relying on the combination of transformational and transactional leadership styles. This study is an initial attempt. This study suggests that innovation performance in SMEs is KBDC and it can be enhanced by KOL, which is another DC (Shamim et al., 2019a). KM provides necessary knowledge resources in this context.

5.3 Conclusion

This study achieves all the three objectives, by validating the association of KOL with KM behaviour and examining the moderating role of employee learning goal orientation and performance goal orientation in the relationship of KOL and knowledge acquisition, transfer, documentation and application. It also establishes the mediating role of KM behaviour in the relationship of KOL and project-based SMEs. This study concludes that KOL positively affects the KM behaviour and project-based innovation performance and KM behaviour mediates the relationship of KOL and project-based innovation performance. Learning orientation strengthens the relationship of KOL and knowledge acquisition and performance goal orientation weakens the relationship of KOL with knowledge acquisition, transfer and application.

5.4 Limitations and future research areas

This study has some limitations and future research suggestions. This study collects data from SME employees. Employee demographic characteristics can play an important role in the context of this study, but this study controls the demographic factors, which is also a limitation. Future research should be done by collecting data from a wider range of participants to enhance the generalizability of the finding. The effect of employee demographic factors should also be examined in future research. A review of the literature reveals the lack of qualitative and exploratory research on the topic of KOL, which is important for detailed, in-depth understanding and the insight of the phenomenon. Especially qualitative exploration is needed to investigate how to encourage managers to adapt KOL. This study follows a cross-sectional approach, while a longitudinal design can further strengthen the findings. So, future research should also consider the longitudinal research design to investigate the impact of KOL on KM behaviour.

References

- Alavi, M. and Leidner, D.E. (2001), "Knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol. 25 No. 1, pp. 107-136.
- Alavi, M. and Tiwana, A. (2003), "Knowledge management: the information technology dimension", *The Blackwell Handbook of Organizational Learning and Knowledge Management*, pp. 104-121.
- Amit, R. and Schoemaker, P.J. (1993), "Strategic assets and organizational rent", *Strategic Management Journal*, Vol. 14 No. 1, pp. 33-46.

- Bandura, A. (1986), *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall, Englewood Cliffs, NJ.
- Bandura, A. (1991), "Social cognitive theory of self-regulation", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 248-287.
- Bandura, A. (2001), "Social cognitive theory: an agentic perspective", *Annual Review of Psychology*, Vol. 52 No. 1, pp. 1-26.
- Baptista Nunes, M., Annansingh, F., Eaglestone, B. and Wakefield, R. (2006), "Knowledge management issues in knowledge-intensive SMEs", *Journal of Documentation*, Vol. 62 No. 1, pp. 101-119.
- Benitez, J., Castillo, A., Llorens, J. and Braojos, J. (2018), "IT-enabled knowledge ambidexterity and innovation performance in small US firms: the moderator role of social media capability", *Information & Management*, Vol. 55 No. 1, pp. 131-143.
- Bhatti, S.H., Zakariya, R., Vrontis, D., Santoro, G. and Christofi, M. (2020), "High-performance work systems, innovation and knowledge sharing", *Employee Relations: The International Journal*, **10.1108/ER-10-2019-0403**.
- Birasnav, M. (2014), "Knowledge management and organizational performance in the service industry: the role of transformational leadership beyond the effects of transactional leadership", *Journal of Business Research*, Vol. 67 No. 8, pp. 1622-1629.
- Birrell, S. and Waters, L. (2007), "The role of mentoring and peer support in contributing to perceived progress towards small business success: a cross-sectional study", *International Journal of Organisational Behaviour*, Vol. 12 No. 1, pp. 33-48.
- Bizzi, L. (2015), "Social Capital in organizations".
- Brook, J.W. and Pagnanelli, F. (2014), "Integrating sustainability into innovation project portfolio management - a strategic perspective", *Journal of Engineering and Technology Management*, Vol. 34, pp. 46-62.
- Capon, A., Gillespie, J., Rolfe, M. and Smith, W. (2015), "Perceptions of risk from nanotechnologies and trust in stakeholders: a cross-sectional study of public, academic, government and business attitudes", *BMC Public Health*, Vol. 15 No. 1, p. 424.
- Carlo, J.L., Lyytinen, K. and Rose, G.M. (2011), "Internet computing as a disruptive information technology innovation: the role of strong order effects 1", *Information Systems Journal*, Vol. 21 No. 1, pp. 91-122.
- Cui, T., Wu, Y. and Tong, Y. (2018), "Exploring ideation and implementation openness in open innovation projects: IT-enabled absorptive capacity perspective", *Information & Management*, Vol. 55 No. 5, pp. 576-587.
- De Jong, J.P. and Den Hartog, D.N. (2007), "How leaders influence employees' innovative behaviour", *European Journal of Innovation Management*, Vol. 10 No. 1, pp. 41-64.
- de Souza Bermejo, P.H., Tonelli, A.O., Galliers, R.D., Oliveira, T. and Zambalde, A.L. (2016), "Conceptualizing organizational innovation: the case of the Brazilian software industry", *Information & Management*, Vol. 53 No. 4, pp. 493-503.

- De Vries, R.E., Bakker-Pieper, A. and Oostenveld, W. (2010), "Leadership= communication? The relations of leaders' communication styles with leadership styles, knowledge sharing and leadership outcomes", *Journal of Business and Psychology*, Vol. 25 No. 3, pp. 367-380.
- Darroch, J. and McNaughton, R. (2002), "Examining the link between knowledge management practices and types of innovation", *Journal of Intellectual Capital*, Vol. 3 No. 3, pp. 210-222.
- Desouza, K.C. and Awazu, Y. (2006), "Knowledge management at SMEs: five peculiarities", *Journal of Knowledge Management*, Vol. 10 No. 1, pp. 32-43.
- Donate, M.J. and J.D.S., J.D. (2015), "The role of knowledge-oriented leadership in knowledge management practices and innovation", *Journal of Business Research*, Vol. 68 No. 2, pp. 360-370.
- Dayan, R., Heisig, P. and Matos, F. (2017), "Knowledge management as a factor for the formulation and implementation of organization strategy", *Journal of Knowledge Management*, Vol. 21 No. 2, pp. 308-329.
- Ghobadi, S. and D'Ambra, J. (2013), "Modeling high-quality knowledge sharing in cross-functional software development teams", *Information Processing & Management*, Vol. 49 No. 1, pp. 138-157.
- Giampaoli, D., Giampaoli, D., Ciambotti, M., Ciambotti, M., Bontis, N. and Bontis, N. (2017), "Knowledge management, problem solving and performance in top Italian firms", *Journal of Knowledge Management*, Vol. 21 No. 2, pp. 355-375.
- Harrington, T.S., Srari, J.S. and Kumar, M. (2019), "Knowledge management in SMEs and MNCs: matching knowledge mobility mechanisms to supply network configuration profiles", *Production Planning & Control*, Vol. 30 Nos10/12, pp. 971-994.
- Hirst, G., Van Knippenberg, D. and Zhou, J. (2009), "A cross-level perspective on employee creativity: goal orientation, team learning behavior, and individual creativity", *Academy of Management Journal*, Vol. 52 No. 2, pp. 280-293.
- Huysman, M. and Wulf, V. (2006), "IT to support knowledge sharing in communities, towards a social Capital analysis", *Journal of Information Technology*, Vol. 21 No. 1, pp. 40-51.
- Jasimuddin, S.M. and Naqshbandi, M.M. (2018), "Knowledge-oriented leadership and open innovation: role of knowledge management capability in France-based multinationals", *International Business Review*, Vol. 27 No. 3.
- Johannessen, J., Olsen, B. and Lumpkin, G.T. (2001), "Innovation as newness: what is new, how new, and new to whom?", *European Journal of Innovation Management*, Vol. 4 No. 1, pp. 20-31.
- Johnson, G., Whittington, R. and Scholes, K. (2014), *Exploring Strategy*, Pearson, Harlow.
- Jones, G.R., George, J.M. and Hill, C.W. (2000), *Contemporary management translated by Anonymous Irwin/McGraw-Hill Boston, MA*.
- Kim, T.T. and Lee, G. (2013), "Hospitality employee knowledge-sharing behaviors in the relationship between goal orientations and service innovative behavior", *International Journal of Hospitality Management*, Vol. 34, pp. 324-337.
- Kohli, A.K., Shervani, T.A. and Challagalla, G.N. (1998), "Learning and performance orientation of salespeople: the role of supervisors", *Journal of Marketing Research*, Vol. 35 No. 2, pp. 263-274.

Levine, J.M. and Hogg, M.A. (2010), *Encyclopedia of group processes and intergroup relations* translated by Anonymous Sage.

Liguori, E.W., Bendickson, J.S. and McDowell, W.C. (2018), "Revisiting entrepreneurial intentions: a social cognitive career theory approach", *International Entrepreneurship and Management Journal*, Vol. 14 No. 1, pp. 67-78.

McAdam, R. and Reid, R. (2001), "SME and large organisation perceptions of knowledge management: comparisons and contrasts", *Journal of Knowledge Management*, Vol. 5 No. 3, pp. 231-241.

Manley, K., McFallan, S. and Kajewski, S. (2009), "Relationship between construction firm strategies and innovation outcomes", *Journal of Construction Engineering and Management*, Vol. 135 No. 8, pp. 764-771.

Manu, F.A. and Sriram, V. (1996), "Innovation, marketing strategy, environment, and performance", *Journal of Business Research*, Vol. 35 No. 1, pp. 79-91.

Martin-de Castro, G., Lopez-Saez, P., Delgado-Verde, M., Donate, M.J. and Guadamillas, F. (2011), "Organizational factors to support knowledge management and innovation", *Journal of Knowledge Management*, Vol. 15 No. 6, pp. 890-914.

Mehta, N. (2008), "Successful knowledge management implementation in global software companies", *Journal of Knowledge Management*, Vol. 12 No. 2, pp. 42-56.

Mohsenabad, A.S. and Azadehdel, M. (2016), "The impact of knowledge-oriented leadership on innovation performance of manufacturing and commercial companies of Guilan province", *International Journal of Humanities and Cultural Studies (IJHCS)*

Nahapiet, J. and Ghoshal, S. (1998), "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review*, Vol. 23 No. 2, pp. 242-266.

Naqshbandi, M.M. and Jasimuddin, S.M. (2018), "Knowledge-oriented leadership and open innovation: role of knowledge management capability in France-based multinationals", *International Business Review*, Vol. 27 No. 3, pp. 701-713.

Ozyilmaz, A., Erdogan, B. and Karaeminogullari, A. (2018), "Trust in an organization as a moderator of the relationship between self-efficacy and workplace outcomes: a social cognitive theory-based examination", *Journal of Occupational and Organizational Psychology*, Vol. 91 No. 1, pp. 181-204.

Pajares, F., Prestin, A., Chen, J. and Nabi, R.L. (2009), "Social cognitive theory and media effects", *The Sage Handbook of Media Processes and Effects*, Sage Publications, Los Angeles, pp. 283-297.

Park, M., Nepal, M.P. and Dulaimi, M.F. (2004), "Dynamic modeling for construction innovation", *Journal of Management in Engineering*, Vol. 20 No. 4, pp. 170-177.

Podsakoff, P.M., MacKenzie, S.B., Lee, J. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, p. 879.

Politis, J.D. (2002), "Transformational and transactional leadership enabling (disabling) knowledge acquisition of self-managed teams: the consequences for performance", *Leadership & Organization Development Journal*, Vol. 23 No. 4, pp. 186-197.

Saenz, J., Aramburu, N. and Blanco, C.E. (2012), "Knowledge sharing and innovation in Spanish and Colombian high-tech firms", *Journal of Knowledge Management*, Vol. 16 No. 6, pp. 919-933.

- Santoro, G., Thrassou, A., Bresciani, S. and Del Giudice, M. (2019), "Do knowledge management and dynamic capabilities affect ambidextrous entrepreneurial intensity and firms' performance?", *IEEE Transactions on Engineering Management*, doi: **10.1109/TEM.2019.2907874**.
- Shamim, S. and Abbasi, A.S. (2012), "Interethnic culture orientation of business managers in Pakistan".
- Shamim, S., Cang, S. and Yu, H. (2016), "Influencers of information system usage among employees for knowledge creation. A future research agenda", 2016 10th International Conference on Software, Knowledge, Information Management & Applications (SKIMA), IEEE, p. 134.
- Shamim, S., Cang, S. and Yu, H. (2017a), "Impact of knowledge-oriented leadership on knowledge management behaviour through employee work attitudes", *The International Journal of Human Resource Management*, Vol. 30 No. 16, pp. 1-31.
- Shamim, S., Cang, S. and Yu, H. (2017b), "Supervisory orientation, employee goal orientation, and knowledge management among front line hotel employees", *International Journal of Hospitality Management*, Vol. 62, pp. 21-32.
- Shamim, S., Zeng, J., Choksy, U.S. and Shariq, S.M. (2019a), "Connecting big data management capabilities with employee ambidexterity in Chinese multinational enterprises through the mediation of big data value creation at the employee level", *International Business Review*, p. 101604.
- Shamim, S., Zeng, J., Shariq, S.M. and Khan, Z. (2019b), "Role of big data management in enhancing big data decision-making capability and quality among Chinese firms: a dynamic capabilities view", *Information & Management*, Vol. 56 No. 6.
- Shariq, S.M., Mukhtar, U. and Anwar, S. (2018), "Mediating and moderating impact of goal orientation and emotional intelligence on the relationship of knowledge-oriented leadership and knowledge sharing", *Journal of Knowledge Management*, Vol. 23 No. 2.
- Singh, S.K. (2008), "Role of leadership in knowledge management: a study", *Journal of Knowledge Management*, Vol. 12 No. 4, pp. 3-15.
- Sinkovics, N., Choksy, U.S., Sinkovics, R.R. and Mudambi, R. (2019), "Knowledge connectivity in an adverse context: global value chains and Pakistani offshore service providers", *Management International Review*, Vol. 59 No. 1, pp. 131-170.
- Teece, D.J. (2007), "Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance", *Strategic Management Journal*, Vol. 28 No. 13, pp. 1319-1350.
- Teece, D.J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", *Strategic Management Journal*, Vol. 18 No. 7, pp. 509-533.
- Uriarte, F. (2008), *Introduction to Knowledge Management*, ASEAN Foundation, Jakarta.
- Vrontis, D., Thrassou, A., Santoro, G. and Papa, A. (2017), "Ambidexterity, external knowledge and performance in knowledge-intensive firms", *The Journal of Technology Transfer*, Vol. 42 No. 2, pp. 374-388.
- Yang, J. and Wan, C. (2004), "Advancing organizational effectiveness and knowledge management implementation", *Tourism Management*, Vol. 25, No. 5, pp. 593-601.
- Yew Wong, K. (2005), "Critical success factors for implementing knowledge management in small and medium enterprises", *Industrial Management & Data Systems*, Vol. 105 No. 3, pp. 261-279.

Young, J. (2012), "Personal knowledge capital: the inner and outer path of knowledge creation in a web world translated by anonymous Elsevier".

Williams, P. and Sullivan, H. (2011), "Lessons in leadership for learning and knowledge management in multi-organisational settings", *International Journal of Leadership in Public Services*, Vol. 7 No. 1, pp. 6-20.

Zack, M., McKeen, J. and Singh, S. (2009), "Knowledge management and organizational performance: an exploratory analysis", *Journal of Knowledge Management*, Vol. 13 No. 6, pp. 392-409.

Zhang, L. and Guo, H. (2019), "Enabling knowledge diversity to benefit cross-functional project teams: joint roles of knowledge leadership and transactive memory system", *Information & Management*, Vol. 56 No. 8.

Zheng, J., Wu, G. and Xie, H. (2017), "Impacts of leadership on project-based organizational innovation performance: the mediator of knowledge sharing and moderator of social capital", *Sustainability*, Vol. 9 No. 10, p. 1893.

Zheng, S., Zhang, W. and Du, J. (2011), "Knowledge-based dynamic capabilities and innovation in networked environments", *Journal of Knowledge Management*, Vol. 15 No. 6, pp. 1035-1051.

