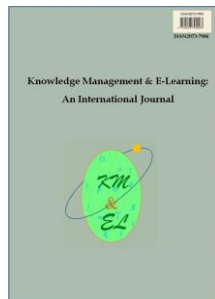

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Nexus of knowledge management between industry and academia via third space hybridity and career attitudes

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Abstract: This paper aims to explore the relationship between Protean Career Attitude, Boundaryless Career Attitude and Task and Contextual Performance mediated by Knowledge Management (KM). In this paper, KM is taken as a boundary process view, namely, Knowledge Sharing, Knowledge Integration and Knowledge Transformation. KM is taken as a mediator and the perspective of Third Space Hybridity and Knowledge Brokers have been tested. The role of boundary spanners has been investigated by empirically examining 104 employees teaching as adjunct faculty along with working in their respective fields in Karachi, Pakistan. These visiting faculties are performing the role of Boundary Spanners or Artists-Academic (Lam, 2017) and work using the knowledge from academia and organizations. A measurement model and Structural Equation Model using Partial Least Squares (PLS) technique have been applied using SMART-PLS software to test the hypotheses. While the bootstrapping method has been applied to test the mediation. The results showed that Protean Career Attitudes play a significant role in effecting both Task Performance and Contextual Performance through KM. Specifically, self-driven values (sub-dimension of Protean Career Attitudes) effect the relationship. Task Performance has a stronger effect than Contextual performance. This study discusses how the model works across different boundaries and how sharing, integration and transformation of knowledge occurs. This study will help top management in different organizations to understand the role of these boundary spanners and utilize them in the development of new products and services. The management needs to identify such individuals as they are better suited to take up the role of entrepreneurs in their organizations.

Keywords: Knowledge management; Task performance; Contextual performance; Protean career attitude; Boundaryless career attitude

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1. Introduction

Due to the changing world order and the transitions from the industrial to the post-industrial era, where big data is being accumulated, companies that were traditionally focused on the manufacturing side are now moving towards a shift in service economies. Now the focus is towards building a dynamic and innovative company, due to extreme competition and the need to survive (Kanwal et al, 2019). An employee who is creative and different is a requirement for organizations to remain competitive and sustainable. A creative employee will either have a protean or a boundaryless career attitude and this will in turn motivate him/her to switch constantly. Such creative employees are important to organizations because they have higher contextual and task performance. Creative employees create new products and services and bring more profits to the organization. Therefore, this employee entry and exit becomes important for an organization and management's role changes from "preserving creativity" to that "releasing creativity" (Musial, 2015).

Employees having external networks (outside their work-related activities), highly specialized, working in project-based contracts and structures, do not have linear career paths, instead, such individuals have non-linear boundaryless or boundary-crossing career orientations (Musial, 2015). Creative individuals are only motivated intrinsically which involves interest, enjoyment, and involvement at work. Employee voice, employee participation and upward communication become highly significant, as it creates an environment of trust, and transparency and builds intrinsic motivation (Kanwal et al, 2019). Therefore, employees no longer have traditional career attitudes, instead, contemporary forms of career attitudes have emerged and been identified, including boundaryless and protean career attitudes. Protean individuals are self-directed and pursue their personal goals while boundaryless individuals manage their careers across different boundaries. Instead of staying with one organization, they keep on moving for career growth opportunities and relationships. Career mobility creates hybrid spaces between two or more work domains through its boundary-crossing processes. Knowledge flows from one domain to another unintentionally with people (Kundi et al, 2021). A study conducted by Kanwal et al. (2019) related to KM highlights the role of boundary objects and how these boundary objects play an important role in knowledge sharing and transfer across different social boundaries. According to them, knowledge brokers play an important role in using these boundary objects. These boundary objects help in creating and understanding new knowledge.

Higher Education Institutions (HEIs) are knowledge-intensive and engage in knowledge acquisition, creation, and distribution through teaching and knowledge transfer. HEIs expand the country's progress through new knowledge and ideas. They are composed of multi-faceted knowledge-based resources Emerging economies such as Pakistan, and HEIs mainly remain bureaucratic and rigid and therefore there is a lack of motivation for knowledge workers. Thus, there is a need for identifying factors that will increase knowledge workers' performance (Sahibzada et al., 2021). Despite, a few studies in this area, there is still a greater need to explore these factors, especially in emerging countries, like Pakistan.

HEIs improve their own organizational performance through effective KM activities. Therefore, increased attention has been given by scholars to KM in HEIs. Firstly, HEIs are composed of complex knowledge-based resources. Hence, they need to be managed effectively. There is a lack of management support for knowledge sharing in the educational arena. Therefore, researchers have identified the need to study the factors that facilitate KM activities in HEIs to improve their business processes (Rehman & Iqbal, 2020).

This study contributes to the literature at three levels. Firstly, KM in Higher Education Institutions and the role of knowledge brokers which has been neglected in the literature. HEIs act as a knowledge hub where knowledge is generated through teaching and research. This study concentrates on the behavior of university teachers who are mainly boundary spanners and are working in the industry as well as visiting faculty in universities. Usually, the idea for hiring visiting faculty is to get hands-on knowledge of the industry for students who are studying, but this study has focused on the other way around, namely, how a visiting faculty (manager) gets insights and knowledge from moving to and for between academia and the corporate world. They are known as artists-academics, as per Lam (2017), who have organic hybridity and who operate in overlapping spaces of the two fields where they internalize both the cognitive and relational knowledge barriers. Knowledge translation and integration occur naturally for them. They are in a constant state of role transition, playing two role identities that infuse and form a mixture and blur the two work domains.

Secondly, according to Haas (2015), a significant role is played by boundary spanners in the conveyance of external knowledge and further research should be done on their knowledge-sharing behavior and its outcomes with respect to performance. Hence, his study focuses on these individuals who are already spanning as well as have boundaryless and protean career orientations and how these orientations effect KM as a process and eventually their task and contextual performance. Here, the role of boundary spanners is considered as being involved in knowledge sharing, integration, and transformation. Boundary spanners can help in the development of new products and services if they integrate their knowledge in academia like fashion designers, engineers, entrepreneurs, marketers, software developers etc. Especially when they are evaluating thesis projects; they can use their ideas which can help them in transforming it into entrepreneurship or buying the idea into the company ethically.

Thirdly, this study is conducted in the East which has different values, economic conditions, and environment as compared to the West. This study has used a unique data set in the higher education sector of Pakistan, which has critical implications for academicians and practitioners.

The research questions are as follows:

RQ1: There is a relationship between Protean Career Attitude, Boundaryless Career Attitude and Knowledge Management.

RQ2: There is a relationship between Protean Career Attitude, Boundaryless Career Attitude, Task and Contextual Performance.

RQ3: There is a relationship between Knowledge Management, Task Performance and Contextual Performance.

RQ4: Knowledge Management mediates the relationship between Protean Career Attitude, Boundaryless Career Attitude, Task Performance and Contextual Performance.

2. Literature review

2.1. Theoretical background

The knowledge-based view (KBV) (Grant, 1996) stipulates that organizations that effectively utilize knowledge-based resources, tend to be successful, competitive, and sustainable in the long run. HEIs are knowledge creation hubs, where knowledge is created and disseminated through teaching and learning. Therefore, management of such knowledge-based resources becomes more relevant in HEIs in order to cope with the rising needs of industries to require more knowledge workers for their businesses. This ultimately contributes to the innovation and growth of the country (Rehman & Iqbal, 2020).

Grant (1996) suggested that KM increases innovation and in turn increases organizational performance. HEIs in developing countries such as Pakistan can contribute immensely to society and the economy. They are under pressure to create a knowledge economy by being learning hubs. They are supposed to improve their curriculum and produce high-quality future graduates to meet the dynamic needs of the job market and the economy (Rehman & Iqbal, 2020). This study has used Grants KBV theory to build on the relationship between KM and the organizational performance of HEIs and assess the role of the KM process between Boundaryless and Protean Career attitudes and Task and Contextual Performance.

In the KM capability framework suggested by Gold et al. (2001), knowledge infrastructure has been composed of three factors, namely, structure, culture and technology and knowledge process. This study has used the knowledge process component which involves knowledge creation, conversion, and application. The KM capability framework posits that knowledge infrastructure enhances knowledge process capability which in turn increases performance (Rehman & Iqbal, 2020).

KBV has its roots in the resource-based view (RBV) which theorizes that knowledge is the primary source of value and competitive advantage and thus it becomes more important for organizations to emphasize knowledge creation, integration, and application. Organizations with effective management of knowledge can increase innovation, enhance their intellectual capital, and achieve superior performance (Rehman & Iqbal, 2020).

2.2. Boundaryless career attitude

A boundaryless career can be defined using six characteristics: first, a boundaryless individual frequently changes employer; second, he/she is concerned with the validation of his/her work according to his personal goals, not organizational goals; third, this individual participates in information networks other than his/her work-related networks; fourth, this individual will not be controlled or advanced vertically as true control of work rests with the employees; fifth, a boundaryless individual will leave work for personal reasons because work-life balance is more important to him than work only; last, these creative individuals interpret their future careers from their own subjective perception rather than prescribed by the company's career development path (Musial, 2015). A boundaryless

attitude is characterized by job opportunities crossing a single organizational setting. It involves constant changes in occupations, organizations, competencies, and social networks. It is independent of traditional career arrangements. It consists of two dimensions, namely, organizational mobility preference (i.e., physical mobility) and a boundaryless mindset (i.e., psychological or mental mobility) (Briscoe et al., 2006; Sullivan & Arthur, 2006). Organizational mobility refers to the degree to which an individual prefers to physically move from jobs, companies, occupations, or countries while a boundaryless mindset refers to the degree to which an individual prefers to psychologically move (i.e., engage in new projects, develop new skills, gain new experiences, and exploit new opportunities outside of their organizations).

2.3. Protean career attitude

Besides the boundaryless career attitude, another contemporary career attitude is identified as the protean career attitude and they are somewhat similar and related (Böhmer & Schinnenburg, 2016). The term protean comes from “Proteus”, the sea-God from Greek mythology having the gift of morphing his shape or substance. Proteus-oriented individuals have self-managed career paths and have the freedom in harnessing their own professional growth, commitment, and identity with the changing career situations (Alonderienė & Šimkevičiūtė, 2018). Proteans are more satisfied with their job, have high self-efficacy, and have better psychological outcomes. Protean attitude involves two dimensions, namely, value-driven and self-directed. Value-driven refers to a person’s internal values and beliefs which lead him/her to achieve success while self-directed refers to an individual’s own adaptability towards improving his/her performance and learning (Briscoe & Hall, 2006).

2.4. Task performance

In-role performance, which is also referred to as task performance, demonstrates the ability of a person to fulfill his job tasks to the fullest. In-role or task performance is important for all posts and is described as obligatory results and actions that contribute to achieving an organization’s goals (Demerouti et al., 2014). The extra-role performance or citizenship behavior or contextual performance is described as non-obligatory actions with respect to an employee which are supposed to improve the efficiency of a firm without essentially affecting the productivity or performance of the employee (Demerouti et al., 2014).

2.5. Contextual performance

The contextual performance involves activities that include voluntarily performing tasks that are not officially required by the job, assisting co-workers, not breaking the rules of the organization even when it is difficult to do so, promoting and encouraging organizational goals, and continuously putting in more effort in order to fulfill one’s task effectively. There are at the very least four ways in which contextual performance activities are different from activities related to task performance. First, task activities are the ones that contribute to the main purpose of a firm in one way or another. On the other hand, contextual activities are the ones that endorse the psychological, social, and organizational environment where task performance takes place. Second, task activities of an organization differ from job to job. On the contrary, contextual activities are similar to most jobs. Last, task activities are the actions for which employees are being paid. Conversely, contextual activities are less likely to be role-prescribed (Goodman & Svyantek, 1999).

2.6. Career attitude, task performance and contextual performance

In order to achieve their goals and to reach new standards of performance, people who have a protean career attitude are inclined to have a good task performance because of the fact that they are always searching for growth opportunities for enhancing their skills and abilities. According to the previous studies self-confidence, hard work and optimism are the kind of qualities that people with a protean career attitude are most likely to have. These people are always open to new possibilities and opportunities, and they consider their careers as a process of progressive learning. They also tend to possess good interpersonal skills to improve their working environment and employment opportunities. Hence, they can be very good at their job duties and tasks which are mentioned in their job description because they are supposedly frequent learners (Baruch, 2014).

According to Segers et al. (2008), people with a protean career attitude can be motivated by opportunities which involve training and development and targets which are challenging. This concludes that people with a protean career attitude have progressive behavior. A previous study shows that performance and a protean career attitude have a positive relation (Baruch, 2014). According to Lazarova and Taylor (2009), boundaryless careers impact performance will be enhanced due to knowledge transfer and integration. Therefore, the hypotheses developed are:

H1: Protean Career Attitude is positively associated with Task Performance.

H2: Boundaryless Career Attitude is positively associated with Task Performance.

H3: Protean Career Attitude is positively associated with Contextual Performance.

H4: Boundaryless Career Attitude is positively associated with Contextual Performance.

2.7. Third space of hybridity and knowledge

The third space of hybridity is a space between two different cultural systems where expression, contestation and transformation are carried out. Career mobility across different roles can create such hybrids where individuals as knowledge brokers can translate, transfer, and transform knowledge across boundaries.

Lam (2017) categorized hybrid knowledge brokers into two types: organic hybrids and intentional hybrids. Organic hybrids are those individuals who have an overlapping space between two work domains and knowledge creation and transfer is a routine task for them (known as “*embedded knowledge brokers*”). They tend to have micro-role transitions and temporary role transitions. Intentional hybrids are actual boundary crossers who have a separate transitional space between two work domains and knowledge creation and transfer is a challenge for them (known as “*transformative knowledge brokers*”). They change their roles permanently and experience macro-role transition. Career mobility creates these hybrid spaces between two or more work domains through its boundary-crossing processes and improves our understanding of creative knowledge.

Lam (2017) used the concept of third-space hybridity in explaining the difference between artists-academics (known as “*boundary spanners*”) and artists in academia (known as “*boundary crossers*”) and how they combine the knowledge. Each of them has a different role identity. Boundary spanners involve people who have “*organic*” hybridity while boundary crossers have “*intentional*” hybridity. According to her, professional artists

play a role as visitors or regular faculty members, the most common practice of learning-by-doing and therefore she distinguished the two most common types of artists. The artist academics operate in the overlapping spaces of the two fields where they internalize the cognitive and relational knowledge barriers. Knowledge translation and integration occur naturally. The artists academics are in a constant state of role transition. They are constantly playing two role identities which infuse and form a mixture of both. These roles blur the two work domains as they work in overlapping zones. The artists in academia are the people who moved from the practitioner world to academia crossing their original psychological, physical, and temporal boundaries. This permanent role transition involves a change in employment and therefore their experience is less smooth with greater effort.

2.8. Career attitude and knowledge management

Knowledge is not only embedded in documents, but also in procedures, practices, and norms of the organization. Knowledge management is an effective learning process that explores, exploits, and shares knowledge. Individuals within organizations do not have every type of knowledge, therefore in order to create new knowledge, they may move across different boundaries to interact with other actors in other organizations (Kanwal et al., 2019). Therefore, they become knowledge brokers, moving across boundaries to share, create, and integrate new knowledge. They act as agents of co-generating new ideas, disrupting old ways of doing things and bridging gaps in existing and new knowledge. This makes organizations more sustainable (Kanwal et al., 2019). Knowledge boundaries help in the translation, transferring and transformation of knowledge within the community. Also, it helps to interpret the difference of knowledge in contexts across boundaries. Moving across different geographic and social boundaries helps in the designing of different products and services especially in the discussion of early phases of product development and design (Panarotto et al., 2016). Knowledge attained from moving across different boundaries can help to convert tacit knowledge into explicit knowledge. Employees are social actors who share knowledge across different stakeholder communities spanning interconnecting social worlds (Kanwal et al., 2019).

Literature on knowledge has already identified how boundary-crossing careers and information acquired through those external networks have led to diverse and new knowledge which leads to knowledge idea generation and execution (Sosa, 2011). Also, it needs to be clarified that the accessibility of knowledge is different from the individual's willingness and ability to exploit that knowledge.

There are three types of knowledge boundaries; namely, syntactic relating to the boundary of different symbols and language, semantic relating to the boundary of interpretation and understanding of different perspectives, and pragmatic relating to the boundary of understanding and constituting political differences in legitimate and valued knowledge (Carlile, 2004; Tsoukas, 2009). The pragmatic boundary of knowledge is more complex as individuals need to reconcile different knowledge practices across the two domains. This is where the real processual knowledge integration lies which leads to creative idea generation. These individuals act as knowledge brokers which take the knowledge to and for across different boundaries and integrate them. Integration involves, hence for them to translate, transform and combine this knowledge. The third space thus helps these brokers to move and exploit new knowledge. These knowledge brokers tend to have boundaryless or protean career orientations.

H5: Protean Career Attitude is positively associated with Knowledge Management.

H6: Boundaryless Career Attitude is positively associated with Knowledge Management.

2.9. Knowledge management, task and contextual performance

Knowledge is associated with everything in an organization including employees, customers, suppliers, documents, and routine operations and hence, it is considered as one of the major resources. Knowledge is the result of raw data which is turned after being processed into information that is understood by people. This knowledge is frequently used and applied in work until it becomes a part of people's mental state which is reflected throughout their experiences, abilities, and creativity (Becerra-Fernandez & Sabherwal, 2010). Moreover, KM is said to be one of the most effective processes used in order to improve performance, by re-establishing, enlightening and preparing employees. Organizations are searching for ways to gather, and spread knowledge, utilizing the current knowledge to achieve performance excellence (Shih & Tsai, 2016). As stated by Abualoush et al. (2018) the impact of KM on workers is made by impacting their learning. Learning is the continuous change of behavior and it is a cycle that enables one to acquire knowledge and abilities by having contact with the social and cultural environment.

There is a number of theoretical studies that indicate the link between KM and Performance. It was found by Ullah et al. (2019) that market orientation and innovation mediate between KM and performance in the telecom sector in Pakistan. KM orientation plays an important role in increasing organizational performance. Organizations become learning organizations that maximize the utilization of valuable knowledge (Yoo & Huang, 2013). Alolayyan et al. (2020) studied KM using five factors on Hospital Performance (HP) using six factors. The results found that the three factors of the KM construct have a significant impact on the three factors of the HP construct. According to Lazarova and Taylor (2009), performance will be enhanced due to knowledge transfer and integration. Individual performance leads to organizational performance. Individual performance is nurtured through knowledge sharing and transfer. If the fresh knowledge is integrated and transferred within the existing knowledge, individual and subsequently organizational performance will improve. Therefore, the hypotheses developed are:

H7: Knowledge Management is positively associated with Task Performance.

H8: Knowledge Management is positively associated with Contextual Performance.

2.10. Knowledge management as a mediator between career orientations and performance

According to Lazarova and Taylor (2009), there are possible mediators between boundaryless careers and performance. They proposed that individuals involved in external boundaryless crossers opt to move elsewhere to develop their careers for better opportunities while boundary spanners are positive spill-overs that help improve the organizations' performance. Teachers help embed knowledge among students which they bring from across different industries. Especially adjunct faculty also known as artists in academia. Competition amongst companies is based on knowledge transformation (Kaya & Erkut, 2018). Knowledge is transformed from ideas to products and services through entrepreneurial imagination and spirit inculcated through education in universities. Knowledge management becomes a reciprocal process when these artists move from organizations to universities in search of imagination and the students create new business

ideas with the experience of their teachers (Kaya & Erkut, 2018). The exchange of information and inputs to and from within and across boundaries not only helps in the creation of new products and services but also helps with testing the ideas in the early phases to their potential customers. Knowledge brokers can act as an entrepreneur who searches, experiment and discovers. Universities have the potential to accelerate these entrepreneurial processes and add value. They can help transform knowledge from creativity to innovation i.e., idea generation to idea implementation (Kaya & Erkut, 2018). Universities reward knowledge-sharing and networking. According to Kaya and Erkut (2018), the most important factor for the transformation of tacit knowledge to explicit knowledge is the culture and environment of universities which have a knowledge-sharing culture.

Performance is an ongoing process that needs to be natured and nurtured. It can only thrive in a knowledge-oriented culture. Knowledge management leads to superior performance (Mishra & Upadhyay, 2021). Therefore, companies need to develop a systematic approach to integrate, create and share knowledge throughout the organization to adapt to the changing dynamics of the external environment and the volatility of markets. Knowledge management has been studied in different sectors such as the public sector, private sector, banking sector, manufacturing sector, human resource consultancy firms and insurance sectors (Mishra & Upadhyay, 2021). Despite the vast amount of research, there is a huge literature gap in a Pakistani context where the relationship between protean, boundaryless career orientations, KM as a process view and task and contextual performance has never been conducted using the boundary approach.

Therefore, the hypotheses developed are:

H9: Knowledge Management mediates the relationship between Protean Career Attitude and Task Performance.

H10: Knowledge Management mediates the relationship between Boundaryless Career Attitude and Task Performance.

H11: Knowledge Management mediates the relationship between Protean Career Attitude and Contextual Performance.

H12: Knowledge Management mediates the relationship between Boundaryless Career Attitude and Contextual Performance.

Fig.1 shows the conceptual framework used in this study.

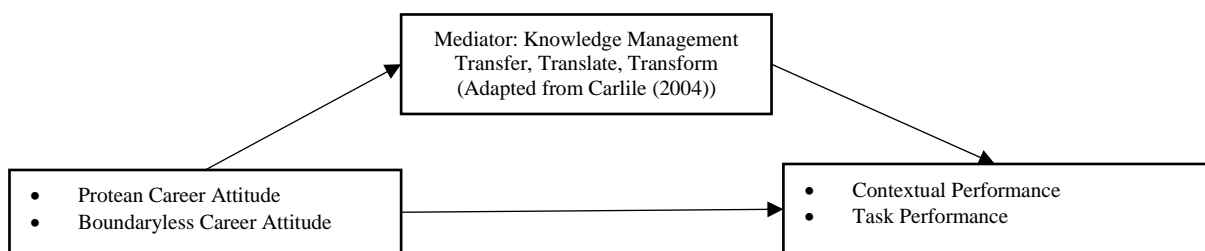


Fig. 1. Conceptual framework

3. Research method

A quantitative research approach was used in this study. Correlational analysis was used in this study to analyze the relationship between independent and dependent variables. Protean and Boundaryless Career Attitudes are independent variables. Contextual and Task Performance are dependent variables and KM is the mediator.

3.1. Sample design and data collection process

The individual is the unit of analysis and the data was gathered from academia. Higher Education Institutions (HEIs) were considered to be the sampling unit in this study. The sampling unit was chosen as universities have visiting faculty who come from the corporate sector in Karachi, Pakistan. For this purpose, the sample was taken from various sector universities offering programs in areas such as textile, fashion, and business from Karachi, Pakistan. A structured questionnaire was designed based on the proposed model. The Likert scale was designed to investigate ranging from 1-5 for all the measures. A non-probability sampling technique was used to select the respondents. This was due to the limitation of accessibility of respondents and cost-effectiveness (Etikan et al. 2016). The confidentiality of information was also assured. 150 questionnaires were distributed through hard and soft copy and after carefully scrutinizing the completed questionnaires, 104 responses were valid for analysis (70% response rate). The responses collected were checked for incomplete questionnaires. 104 sample size is appropriate for Smart-PLS Software (Fauzi, 2022). The sample size was determined using Daniel Soper's sample size calculator for each indicator. There were no missing values after the data was collected through questionnaires.

Table 1
Demographic profile of respondents

Demographic variables	Category	Frequency	Frequency %
Gender	Male	72	69.2
	Female	32	30.8
Age	Less than 21	1	1.0
	21 to 30	24	23.1
	31 to 40	44	42.3
	41 to 50	19	18.3
	Above 50	16	15.4
Work experience	< 5 years	20	19.2
	5-10 years	39	37.5
	11-15 years	30	28.8
	> 15 years	15	14.4
Education	Graduate	90	86.5
	Doctorate	14	13.5
Departments	Fashion design	22	21.1
	Media sciences	23	22.1
	Textile	21	20.1
	Business	38	36.5
Total		104	

A quick preview of Table 1 shows that most of the employees were male (69.2%) and 32 (30.8%) were females. It was observed that most of the employees fell within the age bracket of 31 to 40, which indicates a higher percentage (64%) of the youth or young

adult population in Pakistan (Ahmad, 2018). Most of the individuals, 39 (37.5%) had work experience of 5-10 years. Most of the respondents who took part in this survey were graduates 90 (86.5%) and were teaching in the business department of the universities 38 (36.5%).

3.2. Measures

3.2.1. Protean and boundaryless career attitude.

Protean and Boundaryless Career Attitudes were measured with a new scale developed by Briscoe et al. (2006). Protean Career Attitude has two sub dimensions namely Self-Directed (Items 1 to 8). Sample items include, “*I am responsible for my success or failure in my career*” and Values-Driven (Items 9 to 14). Sample items include, “*It doesn't matter much to me how other people evaluate the choices I make in my career*”. Boundaryless Career Attitude also has two sub-dimensions namely Boundaryless Mindset (Items 1 to 8) Sample items include, “*I seek job assignments that allow me to learn something new*” and Organizational Mobility Preference (Reverse score items 9-13). Sample items include, “*I am energized in new experiences and situations*”. Both the variables were measured on a 5-point Likert scale from “*to little or no extent*” to “*to a great extent*”.

3.2.2. Knowledge management

To measure KM as a process, three sub-variables were used. The first one was already adapted from the scale by Holste and Fields (2010). For the other two sub-variables, two scales were created from the concept of Carlile (2002, 2004) to understand the process view of KM namely, Knowledge Sharing, Knowledge Integration and Knowledge Transformation. A proper procedure was carried out to develop the scale. First, the domain of the construct was identified; secondly, scale items were created, items were purified and the reliability and validity of the scale were tested. A 5-point Likert scale ranging from “*1 = strongly disagree*” to “*5 = strongly agree*” was used for all the three subscales. Exploratory factor analysis, reliability analysis, construct and convergent validities have been used to verify and validate the three factors of KM used in this study. The appendix shows the scale of KM.

3.2.3. Task performance and contextual performance

Task performance was assessed using the nine-item scale developed by Goodman and Svyantek (1999). An example item is “*I demonstrate expertise in all job-related tasks*” on a scale ranging from “*(1) not at all likely*” to “*(5) extremely likely*”. Contextual performance was measured with the seven-item scale reported by Goodman and Svyantek (1999). An example item is “*Help/s other employees with their work when they have been absent*” using the same answering categories as for the task performance scale.

3.3. Data analysis technique

The data used in the study is multivariate and cross-sectional. The current study has used IBM SPSS 19, 21 and Smart PLS 3.0 software to test for the Exploratory Factor Analysis (EFA), Measurement Modelling and Structural Equation Modelling (SEM) and Mediation

Analysis. Most mediation analysis uses cross-sectional data either using the causal steps of Baron and Kenny's (1986) approach or SEM. Despite the advances in longitudinal mediation methods, cross-sectional mediation remains the most effective and popular in data analysis. This is due to the fact that longitudinal design requires more time, money and effort. Longitudinal designs also require the researcher to choose the number of participants and time points to fit a model (Cain et al., 2018). They must decide how often to collect data, what to collect, and how to deal with the invariance. Therefore, it becomes difficult to implement and interpret their results. They cannot be implemented through software and issues of non-convergence excluded parameter estimates and other technical glitches arise. Thus, it is easier to implement a cross-sectional model (Cain et al., 2018).

The Partial Least Squares (PLS) Method was used to test the SEM between independent and dependent variables. EFA was only conducted on KM as this scale was adapted and created from the theoretical underpinnings of Carlile (2002, 2004). If the model is complex with many constructs and indicators and the sample size is low then PLS-SEM is preferred (Hair et al., 2011). Also, normally distributed data is not mandatory to run PLS (Fauzi, 2022).

The data analysis method is as follows: first, Descriptive Analysis, Correlations and Exploratory Factor Analysis (to validate the construct of KM) were carried out in SPSS; then the Measurement Model (Internal Consistency, Composite Reliability, Convergent and Discriminant Validities); last, the Hypotheses testing was carried out in this study via Structural Model using Smart PLS 3.0 (Fauzi, 2022).

4. Empirical results

To test the hypothesis and correlation of Protean Career Attitude and Boundaryless Attitude and the mediating impact of the KM on Task and Contextual Performance, the initial data screening and analysis was carried out to assess the items of the data collection instrument. In the current study, no significant outliers or aberrant values were discovered in the data screening process. Since data was collected using a single source, the issue of common method bias was tested using Harman single factor test and full collinearity test by following the suggestions of Kock and Lynn (2012). Using the Harman single factor test, 54 items were loaded on one factor in Exploratory Factor Analysis (EFA) using Varimax Rotation and Principal Component Analysis (PCA), the total variance extracted by one factor was 33.10% which is less than the recommended threshold of 50% (Podsakoff et al., 2003). Therefore, there was no problem with common method bias in this data. Next, a full collinearity test was carried out, in which all the variables were regressed against a common random variable and if the Variance Inflation factor (VIF) \leq 3.3 then there were no method biases from the single source data collection. Table 2 shows the Results of the full collinearity test.

Table 2
Results of the full collinearity test

PCA	BLCA	KM	TASK_PERF	CONTEX_PERF
2.083	1.134	1.802	2.909	2.537

4.1. Exploratory factor analysis

The three constructs of KM, namely Knowledge Sharing (4 Items), Knowledge Integration (4 Items) and Knowledge Transformation (3 Items) were analyzed using EFA. They were loaded using the PCA with Varimax Rotation which is supported by Pallant (2007). 3 factors were fixed in the factor loadings and Scree plot generation. The Rotated Component Matrix in EFA revealed that KM retained 2 items in each factor, Knowledge Sharing (Willingness to Share Knowledge or WSK1 with .930 and WSK4 with .903 factor loading); Knowledge Integration (Willingness to Integrate Knowledge or WIK2 with .941 and WIK4 with .877 factor loading), and Knowledge Transformation (Willingness to Transform Knowledge or WTK2 with .881 and WTK3 with .745 factor loading). The total Variance Explained by these 3 factors was 91.7% which was also adequate. In order to test the sampling adequacy, the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was used with .693 going a little above the minimum threshold of 0.5-0.6 approved by Multivariate Statistical Analysts such as Hair (2009). Bartlett’s test of sphericity was 0.00 value significance, showing that the scores were equally spread. The anti-image values of (> .5) also proved the suitability of the factor analysis (Stevens, 2012). EFA was only conducted on KM as this scale was adapted and created from the theoretical underpinnings of Carlile (2002, 2004).

The reliability was conducted initially in SPSS 19 with the help of Cronbach Alpha to measure the reliability of items after EFA for KM as well as for other constructs such as Protean Career Attitude, Boundaryless Mindset Attitude, Task and Contextual Performance (Hair et al., 2012). All the items both first-order as well as second-order constructs showed reliability of above .75 which is a good measure (Bagozzi & Yi, 1988). Table 3 shows the Descriptive Statistics of the constructs in the study.

Table 3
Descriptive statistics

	Items	Alpha	Mean	SD	PCA	BLCA	KM	TASK PERF
PCA	14	.841	3.7775	.52322				
BLCA	13	.851	3.5740	.59468	.254**			
KM	6	.85	4.2628	.52638	.564**	.323**		
TASK PERF	9	.925	4.0438	.58168	.676**	.178	.588**	
CONTEX PERF	7	.915	3.8077	.64344	.620**	.214*	.565**	.755**

Note. $p < 0.01$ **, $p < 0.05$ *; $N = 104$; PCA = Protean Career Attitude; BLCA = Boundaryless Career Attitude; KM = Knowledge Management; TASK PERF = Task Performance; CONTEX PERF = Contextual Performance

4.2. Measurement model

Partial least squares (PLS) with the Smart PLS 3.2.8 version were used as the statistical tool to examine the data in the study. First, the measurement model was attained which included the validity and reliability of the instruments used which included Composite Reliabilities, Convergent Validities and Discriminant Validities (Hair et al., 2019; Ramayah et al., 2018). Then the structural model was used to test the hypothesis developed.

4.2.1. Convergent validity

For the convergent validities, the factor loadings and average variance extracted (AVE) were measured. Also, the composite reliabilities (CR) were measured. The values of loadings must be $\geq .5$, the AVE should be $\geq .5$ and the CR should be $\geq .7$. As shown in Table 4, all the loadings were greater than .5 (Hair et al., 2019), the AVEs were all higher than 0.5 and the Composite Reliabilities were all higher than 0.7 (Gefen et al., 2000). Hence, all measures showed Convergent Validities and Reliabilities.

Table 4
Analysis of measurement model

Constructs	Items	Factor loading	Composite reliability (CR)	Average of variance extracted (AVE)
PCA	PWA3	.881	.928	.721
	PWA4	.835		
	PWA5	.849		
	PWA6	.844		
	PWA7	.836		
BLCA	BLA2	.744	.924	.710
	BLA3	.783		
	BLA4	.904		
	BLA5	.883		
	BLA8	.886		
KM	WSK1	.945	.898	.598
	WSK4	.933		
	WIK2	.968		
	WIK4	.972		
	WTK2	.934		
	WTK3	.945		
TASK PERF	TP1	.739	.929	.622
	TP3	.718		
	TP4	.745		
	TP5	.838		
	TP6	.791		
	TP7	.882		
	TP8	.810		
	TP9	.772		
	CONTEX PERF	CP1		
CP2		.821		
CP3		.897		
CP4		.916		
CP5		.871		
CP6		.774		

Note. PCA = Protean Career Attitude; BLCA = Boundaryless Career Attitude; KM = Knowledge Management; TASK PERF = Task Performance; CONTEX PERF = Contextual Performance

4.2.2. Discriminant validity

Discriminant validity was assessed using; Heterotrait-Monotrait Ratio (HTMT) suggested by Franke and Sarstedt (2019). HTMT Ratio must be less than 0.85. Table 5 shows that all the values of HTMT ratios are below 0.85 and which fulfills the criteria of HTMT Ratio. Thus, we can conclude that respondents understood that all the constructs were distinct. Taken together, measurement items were both valid and reliable.

Table 5
Heterotrait-Monotrait ratio

	CONTEX PERF	KM	PCA	TASK PERF
BLCA	.442	.443	.470	.503
CONTEX PERF		.623	.624	.810
KM			.608	.661
PCA				.634

4.3. Structural equation model

The main objective of this study was to investigate the effect of Protean Career Attitude and Boundaryless Career Attitude on Task Performance and Contextual Performance via the mediating effect of KM. Following the suggestions of Hair et al. (2019) the path coefficients, the standard errors, *t*, *p*-values and confidence interval bias corrected lower and upper values were reported for the structural model using a 5,000-sample re-sample bootstrapping procedure (Ramayah et al., 2018).

First, the direct effects in the model (i.e., H1, H2, H3 H4, H5, H6, H7, and H8) were tested. H1 tested if Protean Career Attitude was positively related to Task Performance and the hypothesis was accepted ($\beta = 0.319, p < 0.01$, BCI LL 145 and BCI UL 0.495). H2 tested if Boundaryless Career Attitude had a positive relationship with Task Performance, and the hypothesis was rejected ($\beta = 0.177, p > 0.01$, BCI LL -0.011 and BCI UL 0.496). H3 tested if Protean Career Attitude was positively related to Contextual Performance, and the hypothesis was accepted ($\beta = 0.361, p < 0.01$, BCI LL 0.216 and BCI UL 0.536). H4 tested if Boundaryless Career Attitude had a positive relationship with Contextual Performance, and the hypothesis was rejected ($\beta = 0.128, p > 0.01$, BCI LL -0.031 and BCI UL 0.364). H5 tested if Protean Career Attitude was positively related to KM, and the hypothesis was accepted ($\beta = 0.469, p < 0.01$, BCI LL 0.277 and BCI UL 0.621). H6 tested if Boundaryless Career Attitude (BLCA) had a positive relationship with KM, and the hypothesis was rejected ($\beta = 0.194, p > 0.01$, BCI LL -0.035 and BCI UL 0.440). H7 tested if KM had a positive relationship with Task Performance, and the Hypothesis was accepted ($\beta = 0.605, p < 0.01$, BCI LL 0.373 and BCI UL 0.779). H8 tested if KM had a positive relationship with Contextual Performance, and the hypothesis was accepted ($\beta = 0.568, p < 0.01$, BCI LL 0.358 and BCI UL 0.713). Table 6 shows the results of the direct effects. Next, the Mediation hypotheses were tested where KM was taken as a Mediator.

To test the mediation hypotheses, suggestions by Preacher and Hayes (2008) were followed by bootstrapping the indirect effect. As per them, the confidence interval must not straddle a 0 to have a significant mediation. As shown in Table 7, H9 which tests that KM mediates the relationship between Protean Career Attitude and Task Performance is accepted as ($\beta = .283, p < .01$, BCI LL .136 and BCI UL .469). H10 which tests that KM

mediates the relationship between Boundaryless Career Attitude and Task Performance is rejected ($\beta = .117, p > .01$, BCI LL $-.010$ and BCI UL $.313$). H11 which tests that KM mediates the relationship between Protean Career Attitude and Contextual Performance is accepted ($\beta = .266, p < .01$, BCI LL $.132$ and BCI UL $.433$). H12 which tests that KM mediates the relationship between Boundaryless Career Attitude and Contextual Performance is rejected ($\beta = .110, p > .01$, BCI LL $-.020$ and BCI UL 0.289). The Confidence Intervals Bias Corrected at 95% did not show any intervals straddling a 0. Thus, H9 and H11 were supported while H10 and H12 were not supported. H9 and H11 show that there is partial mediation.

Table 6
Hypothesis testing results of direct effects

	Relationship	Std Beta	SD	<i>t</i>	<i>p</i>	BCI LL	BCI UL	Test result
H1	PCA → TASK PERF	.319	.106	3.014	.001	.145	.495	Accept
H2	BLCA → TASK PERF	.177	.151	1.168	.122	-.011	.496	Reject
H3	PCA → CONTEX PERF	.361	.100	3.617	.000	.216	.536	Accept
H4	BLCA → CONTEX PERF	.128	.123	1.041	.149	-.031	.364	Reject
H5	PCA → KM	.469	.112	4.170	.000	.277	.621	Accept
H6	BLCA → KM	.194	.152	1.272	.102	-.035	.440	Reject
H7	KM → TASK PERF	.605	.128	4.738	.000	.373	.779	Accept
H8	KM → CONTEX PERF	.568	.106	5.345	.000	.358	.713	Accept

Note. 95% confidence interval with a bootstrapping of 5,000; PCA = Protean Career Attitude; BLCA = Boundaryless Career Attitude; TASK PERF = Task Performance; CONTEX PERF = Contextual Performance; KM = Knowledge Management; BCI LL = bootstrapped confidence interval lower limit; BCI UL = bootstrapped confidence interval upper limit

Table 7
Hypothesis testing results of indirect effects

	Relationship	Std Beta	SD	<i>t</i>	<i>p</i>	BCI LL	BCI UL	Test result
H9	PCA → KM → TASK PERF	.283	.102	2.780	.003	.136	.469	Accept
H10	BLCA → KM → TASK PERF	.117	.102	1.142	.127	-.010	.313	Reject
H11	PCA → KM → CONTEX PERF	.266	.090	2.964	.002	.132	.433	Accept
H12	BLCA → KM → CONTEX PERF	.110	.098	1.120	.132	-.020	.289	Reject

Note. PCA = Protean Career Attitude; BLCA = Boundaryless Career Attitude; TASK PERF = Task Performance; CONTEX PERF = Contextual Performance; KM = Knowledge Management

5. Discussion

The results of this study conclude that an individual who is responsible for his own career goals and feels independent and self-directed would share, create, and exchange knowledge. This knowledge worker will navigate his own career path and steer himself towards his goals. This will increase his contextual as well as task performance as he takes responsibility for his goals and the success of his career. Protean Career Attitudes with Self-Driven values are very important to stimulate Knowledge Sharing, Knowledge Integration and Knowledge Transformation efforts. Also, KM increases both Task Performance and Contextual Performance. It should be noted that KM if implemented appropriately and combined with individual goals and rewards will increase Task

Performance and Contextual Performance. KM has a stronger relationship with Task Performance as compared to Contextual Performance.

Regarding the research questions, R1 has been accepted where Protean Career Attitude and KM had a significant relationship supported by Lazarova and Taylor (2009). R2 has been accepted where Protean Career Attitude, and Task and Contextual Performance had a significant relationship supported by Lazarova and Taylor (2009). R3 has been accepted and has also been supported by previous research (e.g., Alavi & Leidner, 2001; Janz & Prasarnphanich, 2003; Mishra & Upadhyay, 2021; Muhammed et al., 2009).

Individuals driven by their definition of success choose projects which help them collect diverse knowledge and develop professional networks with different stakeholders. Enhancing performance requires one to cross one or more boundaries (divisional, organizational, occupational, national). Therefore, the R4 is also accepted in this study and supported by Brousseau et al. (1996). It can be said that Protean Career Attitude affects performance through nurturing knowledge.

5.1. Theoretical contributions

The discoveries from this research make several contributions to the literature. First, KM is taken as the process while previous studies have studied the relationship between knowledge sharing and behavior (Chow & Chan, 2008; Tohidinia & Mosakhani, 2009; Reyshav & Weisberg, 2010). It means that KM only covered one aspect which was knowledge sharing. The other aspects of knowledge such as integration and conversion were lacking. Reyshav and Weisberg (2010) and Henttonen et al. (2016) examined the impact of knowledge-sharing behavior on individual work performance. According to them, tacit knowledge sharing had a significant positive effect on performance, while explicit knowledge sharing exerted a significant negative effect. Although several studies (Henttonen et al., 2016; Ryu et al., 2003; Tohidinia & Mosakhani, 2009) have shown that although there is a positive attitude towards knowledge sharing there is still a major gap in the actual impact on KM as a boundary process view (Carlile, 2004).

Second, using the boundary's perspective the present study addressed the role of boundary spanners by empirically examining employees in the education sector in Pakistan. The sample taken is the boundary spanners i.e., the visiting faculty in different universities which frequently span their corporate jobs and academia. Thus, using the ideas across different boundaries and sharing, integrating, and transforming knowledge. The study discusses how the model works with boundary spanners. As research on KM in an organization develops, it provides deeper insights into the emerging literature on the micro-foundations of KM. The study contributes to the literature review about the role of boundary spanners as knowledge brokers. According to the evidence, boundary spanners are vitally important from the perspective of KM (Haas, 2015).

5.2. Practical implications

This study has numerous important managerial implications for organizations. There is a three-prong approach of practical implication to KM. First, organizations need to create a culture of KM emphasizing the values and norms of the organization. Secondly, supervisors should communicate the goals with respect to KM with their subordinates and associate rewards for their actions. They must link the KM goals with Task Performance

to increase their in-role performance and expertise. Also, they need to implement the KM techniques such as knowledge bases, digital archives, knowledge maps, communities of practice and banks of ideas (Chu, 2016). Further, they must mentor and provide support to their subordinates in achieving the KM goals. Thirdly, the human resource department must create policies, practices, and procedures in line with both the organizations knowledge-related values and norms and the individual knowledge-related goals. However, employees are the essence of any company whereby one must keep them in the loop and make them participate when designing goals so that they make their contribution productive. These days awareness of KM is lacking in developing countries due to which the performance is only satisfactory. KM is very important in the quality management systems such as ISO9001 and it is one of the main criteria of Organizational Performance. HR departments in corporate sectors in developing countries must develop KM tools to assess their employees during the performance appraisal.

5.3. Limitations and future research

This study has several limitations. Firstly, the results of this study lack generalizability due to the small sample size and geographical area coverage. The respondent selection process is Convenience based sampling hence there is a selection bias as the entire population is not surveyed and the sample is not randomly selected. Future studies can take on a greater sample size. Secondly, data was gathered from only one city which was Karachi. The information can be gathered from other major metropolitan cities such as Lahore, Quetta, or Islamabad to get adequate and accurate data to generalize the findings in future. Also, it would be interesting if future scholars will consider longitudinal studies to check the application of KM's occurrence with respect to different time intervals such as closer to performance appraisal to determine whether the task performance increases or decreases relatively. Lastly, the sample size was less therefore future studies may use this model with a larger sample size.

Author Statement

The author declares that there is no conflict of interest.

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