

EXAMINING THE IMPACT OF KNOWLEDGE-BASED HRM PRACTICES ON ORGANIZATIONAL INNOVATION WITH THE MEDIATING EFFECT OF KNOWLEDGE SHARING IN TELECOM SECTOR OF PAKISTAN

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Abstract

This study examines the influence of Knowledge-Based Human Resource Management (KBHRM) practices on innovation within Pakistan's telecom sector, addressing a gap in literature. The primary objective is to understand how KBHRM strategies, including recruitment and selection, training and development, compensation management and performance management, foster innovation through the mediation of knowledge sharing. Knowledge-based view (KBV) theory used to explain the role of knowledge and intellectual capital in shaping the context of this study. Resource-based view (RBV) used to examine how internal resources and capabilities influence the organisation. This study involved a survey of 166 employees, with data analyzed using regression and mediation techniques. The results demonstrate that KBHRM practices and knowledge sharing significantly enhance organizational innovation, highlighting the critical role of effective HR strategies and knowledge distribution.

The methodology employed structured questionnaires to collect data, followed by detailed statistical analysis. Empirical findings indicate that KBHRM practices positively impact innovation, primarily through improved knowledge sharing among employees. However, this study's focus on the telecom sector in Pakistan limits the broader applicability of the results. The cross-sectional nature of this research also restricts causal inferences, and self-reported data may introduce bias. Future research should consider longitudinal studies and varied data sources to validate these findings. A mixed-methods approach could provide deeper insights into the mechanisms that drive innovation. Additionally, both quantitative (numbers) and qualitative (stories and experiences) methods should be used to understand the complex interactions between organizational innovation and knowledge-based HR practices. Examining the influence of organizational culture, leadership, and the integration of digital technologies in KBHRM processes could provide deeper insights into enhancing innovation across different organizational contexts.

INTRODUCTION

In the modern economy, innovation has become a vital driver of company performance particularly in the evolving telecom industry (Le & Le, 2022). To compete with other industries, it is facing stiff

challenge that in order to remain competitive, new techniques and strategies have to be used in Pakistan's telecom industry, for market dominance. Hence, innovation can only be done by depending

on the knowledge component of the innovation process through two strategic components namely knowledge-based human resource management (KBHRM) and knowledge sharing (KS). This may include recruitment and selection, compensation management, staff training and development, performance appraisal as some of the components of KBHRM practices. As well as knowledge management that can help firms transform their employee's knowledge pool. Thus, KS contributes to the enhancement of organizational learning by knowledge sharing, across the length and breadth of an organization towards the attainment of more rational solutions and output. That is why, they contribute to the experimental results and methodology and impacts on the organizational innovation (Abrar et al., 2021; Than et al., 2023).

Pursuant to the knowledge-based view (KBV) and the resource-based view (RBV) of the firm, this study is focusing its analysis that KBS has influenced Pakistan's telecom sector regarding the fostering of innovative processes within firms (Grant, 1996; Wernerfelt, 1984). Studies conducted recently have highlighted the importance of KBHRM and KS in propelling innovation across various sectors (Ahmad et al., 2017; Le & Do., 2023). The telecommunications industry in Pakistan has unique characteristics that make it different from other industries. These include rapid technological changes and intense competition which require innovative solutions to stay competitive (Magnier-Watanabe & Benton, 2017).

In the telecom sector KBHRM practices are considered essential since they help organization exploit employee knowledge and expertise with innovative solutions (Gui et al., 2022). For instance, by training and development programs employees can achieve more knowledge and skill that supports them to create new ideas (Abrar et al., 2021). Innovation can also be encouraged through performance management systems where employees will be recognized and rewarded according to their expertise as well as ability to think innovatively thereby sharing their knowledge as well as ideas among each other (Le, 2022).

Additionally, knowledge management systems could assist in spreading information throughout the organization that result in creative solutions and

better performance (Cao et al., 2022; Magnier-Watanabe & Benton, 2017). KS is also critical for the telecom industry as it facilitates the spread of knowledge within the organization thus leading to innovative solutions and improved performance. KS can be done via several means such as formal training programs, mentoring, and computer-based KM systems. The process of KS can be supported by a favorable organizational environment and management, as well as information and communication technology (Abrar et al., 2021; Cao et al., 2022; Le, 2023).

This study also seeks to contribute to current knowledge by considering the strategic impact of knowledge-based HRM work practices, knowledge sharing and organizational innovation to improve effectively using innovative perspective from the context of KS implementations, practices and KS strategies for telecommunication firms. This study shall also examine contingency perspectives that help in the understanding of organizational processes. The recommendations given here will be beneficial to the HR practitioners, the managers and the policy makers in the telecommunication industry. This understanding can however, be credited to those in the industry who would wish to harness KBHRM and KS to promote innovation that ensures to gain competitive advantage.

Background of the study

Pakistan telecom industry has been expanding from the last few years with a growing demand of Internet as well as mobile services. However, the competition is high among the operators in this industry who all want to dominate the market and hence has huge shares. In this highly competitive environment, telecom firm intends to be innovative and focus on gaining competitive over others. Some of the findings include the creative capacity of firms determines for their competence to sustain competition in their products. This competitive edge importantly relies on the companies' implementation of Knowledge Based Human Resource Management (KBHRM) techniques (Wernerfelt, 1984). Effective KBHRM practices enable organizations to employ human resources to generate new ideas and synthesize high-quality goods and services (Kianto et al., 2017).

Fundamentally, this research is grounded on the Knowledge-Based View (KBV) and the Resource-Based. RBV lays emphasis on the aspect of human capital and other resources of an organization. Resources play an important role in creating better and sustainable market competitive advantage (Wernerfelt, 1984). Similarly, KBV also states that knowledge is another strategic resource for the creation of organizational innovation and competitiveness (Grant, 1996). When these two fundamental concepts integrate, it helps to examine KBHRM which can measure and explain that how the identified factors impact innovation performance of Pakistan's telecom sector with the mediating impact of knowledge sharing. This study correlates two theoretical models including KBV and RBV elements which were developed and identified by different scholars with the passage of time. According to the KBV theory that ideas are established through knowledge and used as the source of competitive edge, whereas on the other hand, the RBV theory (Wernerfelt, 1984) focus on the organizational resource (Cao et al., 2022; Le, 2024; Yang et al., 2018).

Regarding the theoretical assumption of this study, knowledge sharing is mediator between relationship of KBHRM practices and impact on innovation performance. Knowledge updating and dissemination is enabled by training and development, performance management, compensation and benefits policies that are aligned with the firm's KBHRM system. This in turn helps to develop the innovation performance. It provides a literature link between KBHRM practices and organizational innovation which is identified by various researchers (Abrar et al., 2021; Than et al.2023).

This study analyzes factors that influence Knowledge sharing and Organizational innovation including KBHRM practices (Cao et al., 2022). The conceptual model is developed highlighting that Knowledge Management is supported by the implementation of the structure of KBHRM practices which promotes Knowledge Sharing leading to innovation. Knezović & Neimarlija (2023) found that this relation is mediated by knowledge sharing between KBHRM practices and innovation performance. Future

research should focus more on the Non-Western settings focusing on telecom industry as research has been conducted in a limited way as compared to the developed countries. Managing human resources in organizations deals with knowledge of employees focusing on KB-HR practices. The notion of this study highlights functions of human resource management in knowledge-based organizations which focus on highly valued knowledge assets, therefore this research highlights the issues and prospects of managing and leveraging organizations' most important asset (Kianto et al., 2017; Yao et al., 2020).

This study seeks to discuss the impact of KBHRM practices and the level of innovation among telecom sector. The enhancement of innovation capabilities is linked with KBHRM practices in telecom sector. (Kianto et al. 2017; Le, 2023). A literature review is conducted in pointing out a significant knowledge gap which relates to Knowledge Based HRM Practices (KBHRM) and Organizational Innovation in the Pakistan's Telecom Sector. There is minimal research done in the banking, telecom and education sector on Organizational Innovation, nonetheless, these sectors are crucial in enhancing innovation and impacts on the economic growth (Yao et al., 2020). Also, there is dearth of knowledge regarding the role of KBHRM to elevate Organizational Innovation and competitiveness (Abrar et al., 2021; Yao et al., 2020). There is need of research establishing the impact of KBHRM in enhancing Organizational Innovation, by employing the RBV (Wernerfelt, 1984) and KBV (Grant, 1996) concepts Knezović & Neimarlija (2023). Thus, further research is needed on various relationships: Knowledge Sharing (KS) as a mediator between KBHRM and Organizational Innovation). Further, understanding the influence of KBHRM on the level of Organizational Innovation in various types of organizational structures and cultures is also required (Abrar et al., 2021; (Magnier-Watanabe & Benton, 2017; Soliman & Spooner, 2000; Yang et al., 2018).

The objective of this study is to determine some of the existing research gaps in understanding of the link between KBHRM, KS and Organizational Innovation in Pakistan telecom industry. On the other hand, there are still areas which could be developed by greater depths of research. For instance,

(Le & Do., 2023) proposed to investigate mediating role of KS on relationship between KBHRM and Organizational Innovation in the telecom sector of Pakistan.

The purpose of the present research is to analyze the relationship between KBHRM and organizational innovation within the context of Pakistan's telecom industry while focusing on the mediating impact of knowledge sharing. KBHRM variable is used in other service sectors, but not in the telecom service sector. The KBHRM, such as performance management, awards, recruitment and selection, compensation management, training, and development, may enhance the level of the staff's knowledge and skills, thus, creating innovation. In this interaction; the dissemination of information – the exchange of ideas and skills by the staff members is crucial because it fosters creativity, and helps innovation process. This research focus on to extend the literature on the practices of HRM that can contribute to innovation and competitiveness by exploring the relationship between KBHRM, knowledge sharing, and organizational innovation (Abrar et al., 2021) in Pakistan's telecom sector.

KBHRM positively affects organizational innovation through the mediation of Knowledge sharing (Gui et al., 2022). This study empirical evidence supports KS behaviors as the mediator of the link between implemented KBHRM practices and innovation performance. Organizational knowledge exchange is positively related to perceived firm innovation performance, and some practices of HRM are positively related to the firm's perceived innovation performance. Resource-Based View (RBV) which has stemmed from the work of (Wernerfelt, 1984) and Knowledge-Based View (KBV) proposed by (Grant, 1996) are theoretical foundationso of this research

The purpose of this research is to investigate how knowledge-based HRM practices influence Organizational innovation, with a focus on the telecom sector in Pakistan, by examining mediating effect of knowledge sharing.

This research uses Knowledge-Based View (KBV) and Resource-Based View (RBV) theories to understand how the management of human resources can promote innovation in the context of Pakistan's telecom industry. This study emphasizes the necessity of KBHRM practices in building such a culture that

would foster the sharing of knowledge, and thereby fosters the innovativeness of the organization and provides recommended approaches for change that will be useful for the telecom managers to improve the innovation as well as organizational performance by the right utilization of the strategic HRM approaches in the emerging markets through knowledge management (Abrar et al., 2021; Noopur & Dhar, 2020).

Literature Review

The influence of knowledge-based HRM on organizational innovation has been studied extensively by researchers. Drawing on Knowledge-Based View (KBV) and Resource-Based View (RBV) theories, a number of studies have consistently found that recruitment and selection, training and development; performance management, compensation management are some dimensions of knowledge-based HRM practices which promote organizational innovation (Le, 2024). In addition, this connection is facilitated by knowledge sharing whereby personal knowledge is turned into corporate innovation (Abrar et al., 2021).

Knowledge-based HRM Practices

HR practices such as knowledge-based functioning provide a positive impact in the knowledge management process adopted in a firm, which boosts business process innovation (Abrar et al., 2021). These practices let organizations make their processes more efficient and help improve the existing practice of the firms by incorporating the effective organizational learning and knowledge. In the current information age, organizations are planning for training of their employees meeting market challenges (Le & Do, 2023; Miller & Karakowsky et al., 2005).

Compensation management, recruitment and selection, productivity appraisal, staffing, learning & growth are components of HRM practices that impact on a firm's knowledge process. This is in line with the RBV theory holds that resources and capabilities and a firm's distinctive competence are relevant and important for the creation and sustenance of competitive advantage (Wernerfelt, 1984). Moreover, the Knowledge-Based View (KBV) theory holds knowledge as an important

organizational asset in the current intellectual capital literature (Grant, 1996). The most effective policy that has been distinguished for enhancing innovation within the firms is expertise driven reward. Hence, the managers apply such policies with the intention of rewarding employees with visible and hidden incentives intended to encourage the employees to support the process innovation within the company.

This incentive enhances the value of employees' skills, the opportunities, and the innovations (Wernerfelt, 1984). Naturally, knowledge-based recruitment improves a firm's processes, with Absorptive Capacity (AC) being a strong drive to promote knowledge practices (Donate et al., 2016; Le, 2024a). Despite the fact that previous studies have analyzed the effects of the different HRM practices on organizational performance, further research is required for understanding the HBKRP including knowledge sharing, training & development, and performance management on the generation, transfer and application of knowledge on the ground of innovation and competitiveness (Le, 2023). Moreover, little is known about the transmission path by means of which KBHRP impact on organizational performance and the contingencies that organize these associations. Filling this gap in the literature can be useful for organizations that seek to take advantage of the application of KBHRMP in today's knowledge-based competitive environment.

Organizational Innovation

The concept, organizational innovation refers to the creation, implementation and utilization of new ideas that have the potential of 'gaining some kind of virtue such as lower cost or better efficiency and service delivery'. This process is with accordance to the Resource-Based View (RBV) theory that suggests that a firm's resources and capabilities are the antecedents of sustainable competitive advantage (Wernerfelt, 1984). Organizational innovation also relies on the Knowledge-Based View (KBV) theory According to which knowledge is one of the most valuable resources (Grant, 1996). Although creativity is usually defined as an individual attribute, process or outcome, innovation is defined as a collective, organizational process of implementing new

solutions to existing problems using the organizations' knowledge base (Le, 2023; De Winne et al., 2010).

When attempting to draw a relationship between creativity and innovation, there are several common aspects that could be used, namely process, approach, relations, and knowledge. The following ways are foundations by which an organization boosts a culture of innovation as encourage the sharing of and utilization of knowledge and skills of employees as a way of promoting innovation and attaining long term competitiveness.

Nevertheless, it is seen that organizational innovation is a critical aspect of the success of an organization nowadays and two areas that are intimately associated with innovation remain poorly understood: knowledge management and human resource management (Le, 2024, Wang & Noe et al., 2010).

Knowledge Sharing

Exchange of information are a relative factor that contributes to the success of an organization. This is because it allows the implementation of ideas, skills and experience sharing in employees in order to actualize common goals. This concept correlates with the Knowledge Based View (KBV) theory developed by (Grant, 1996) with an emphasis on knowledge being a key resource in the delivery of services to customers according to their needs in supporting the other theory, namely, Resource Based View (RBV) (Wernerfelt, 1984).

According to the above-discussed literature review, there are several research areas in knowledge sharing that require reconsideration. For instance, most studies did not differentiate between vertical and horizontal way of knowledge sharing and how they affect various knowledge sharing behaviors (Seeck & Diehl, 2017; Than et al., 2023). It is also worth noting that the behavior of knowledge sharing and collection could be different, and they are probably affected by various factors, including individual, organizational, and technological (Abrar et al., 2021). Previous research has focused on the relationship between creativity and innovation, and this study reveals the role of KS. Other areas that need further investigation include the quality of the communication process: personal characteristics,

such as attitude, and characteristics of the organization (Perez-Riverol et al., 2022), time, lack of trust, behavioral change, and understanding in relation to knowledge sharing (Ahmad et al., 2017).

H1: There is a highly positive impact of KBHRM on Organizational innovation.

Knowledge-based HRM impact on organizational innovation

Knowledge based HR practices refers to the processes which focuses on acquiring, creating and transfer of knowledge and skills in the organization, based on Knowledge based view theory by Grant (1996). Such practices promote the sharing of knowledge that fosters learning and improvement of the employees' proficiency (Le, 2024a). Pursuant to the RBV theory formulated by Wernerfelt in 1984, resources and capabilities, as well as knowledge and skills, are deemed the primary sources of sustainable competitive advantage.

Innovation and growth in the present require a corporate culture that encourages creativity, risk, learning and development respectively (Donate et al., 2016; Le & Do., 2023). This culture is supported by Knowledge-Based HR Policies and Knowledge Exchange. The process of sharing information, experience, and ideas within organizations whereby various employees, teams, and departments share knowledge and experiences is considered as strengthening of knowledge-based HRM and the achievement of organizational innovations (Eslami, 2011; Le, 2020). It helps in sharing knowledge and information which, in turn, may help in finding solutions to problems, supporting the KBV concept along with the RBV concept.

Focusing on the Pakistan telecommunication Sector, Knowledge Based HRM Practices as well as Knowledge Sharing can encourage innovation and sustain the competitiveness of the companies in the market, confirming the KBV and RBV theory of the firm (Le, 2023; Soliman & Spooner, 2000; Wang & Noe et al., 2010).

H2: There is a highly positive impact of KBHRM on knowledge sharing.

Knowledge based HRM impact on knowledge sharing

Research conducted by (Ali & Fields., 2020) have proved that there is a positive relationship of Knowledge Based Human Resource Management KBHRM, which is based on Knowledge Based View. KBV theory supports organizational innovation through the process of knowledge by considering knowledge and skills are important resources. Therefore, this study (Javed et al., 2017) concluded that KBHRM is facilitated by knowledge sharing which acts as a mediating factor between KBHRM practices and organizational innovation. This aligns with the KBV (Grant, 1996) and Resource-Based View (RBV) theories (Wernerfelt, 1984). It is therefore highlighted that companies which support knowledge sharing through the implementation of KBHRM will experience enhanced levels of innovation. This also supports idea that knowledge and skills help to sustain competitive advantage in business (Wernerfelt, 1984).

Effective KBHRM practices can promote knowledge sharing in Pakistan's telecom sector resulting into high level innovation and competitiveness (Javed et al., 2017). Knowledge sharing allows for free exchange of information leading to innovative ideas (Ko et al., 2018). Additionally, it helps in promoting organizational innovation through enhancing interchanges of ideas and expertise from different employees thus supporting both RBV theory and KBV.

Therefore, grasping the relationship between KBHRM, knowledge sharing and organizational innovation, organizations intend to enhance their innovative capabilities. It emphasizes to maintain sustainable competitive advantage, knowledge and skills and must be considered as crucial resources.

Though knowledge management is increasingly relevant in organizations, there is a significant research gap with respect to Knowledge-Based HRM (KBHRM) practices and the act of sharing knowledge (KS). This current study has examined the single effects of KBHRM and KS on organizational innovation but then there is a need for extensive studies about how these two dimensions relate and interplay (Javed et al., 2017; Le, 2024a)

H3: There is a highly positive impact of knowledge sharing on organizational innovation.

Knowledge sharing impact on organizational innovation

Knowledge-based HRM practices rooted in the Knowledge-Based View (KBV) theory (Grant, 1996), underline gathering, building up and implementing knowledge and expertise inside an organization. These practices create room for culture of sharing information that promote learning as well as improve employees' expertise level. This is consistent with Resource-Based View (RBV) theory (Wernerfelt, 1984), which argues that firm's resources especially its capabilities including both knowledge and skills are the main sources of sustainable competitive advantage.

To unlock innovation and foster the growth of organizational innovation, a culture that cherishes entrepreneurial freedom, where no experiment is regarded as risky, and one can always learn new ideas should be established. The latter is promoted by knowledge-based human resource (HR) practices. Knowledge sharing is an essential aspect of knowledge-linked HRM and organizationally oriented innovation (Yang et al., 2018). It permits the distribution of expertise for creative solutions in line with KBV and RBV theories. In Pakistan's telecom industry, effective HR practices based on knowledge-sharing contribute to innovation fostering businesses to remain competitive in their respective markets as well (Kremer et al., 2019), also supporting KBV and RBV theories.

There are several gaps in research that need further investigation on Knowledge Based HRM (KBHRM) & Organizational Innovation. For example, there has been limited empirical research on the link between KBHRM and organizational innovation within the Pakistani telecom sector. The implications of KBHRM toward organizational innovation are not well understood; thus, they require more examination (Le & Do et al., 2023). Study factors like organizational culture, leadership, and technology to understand their connection to KBHRM and innovation (Eslami, 2011). Studies that look at how KBHRM affects organizational innovation over a long time are yet to be examined (Than et al. 2023). Studies that compare KBHRM practices and organizational innovation in telecom companies in Pakistan and Other countries having dearth of knowledge (Eslami, 2011). Also, we need

more studies to examine how KBHRM connects with certain improvements in innovation (like product, process service) (AlQershi et al., 2023).

H4: There is a significant positive influence of knowledge sharing acting as mediator between KBHRM and Organizational innovation.

Mediating effect of knowledge sharing between KBHRM and Organizational innovation

In Pakistan's fast-changing telecom sector, Knowledge-Based HRM (KBHRM) and knowledge sharing play key roles in boosting organizational innovation. Knowledge sharing helps spread ideas and expertise, which can result in new solutions and better organizational performance. This aligns with the Knowledge-Based View (KBV) theory by (Grant, 1996) showing how vital knowledge is for competitive advantage.

This research of RBV by (Wernerfelt, 1984) in which it highlights positive change by KBHRM practices which play an important role to enhance the abilities and capabilities by sharing innovation (Chen et al., 2017; Khan et al., 2023; Rawashdeh et al., 2022)

Theoretical framework

It's specified that knowledge plays an important role in increasing the innovation and enterprising of any organization (Grant, 1996). Accordingly, in the telecommunications sector of Pakistan, there is KBV's evidence of the practices for knowledge-based human resource management (KBHRM), which encompasses recruitment and selection, training and development, performance management, and compensation that help employees to acquire and share knowledge that led a positive impact on innovation performance (Abrar et al., 2021; Cao et al., 2022).

This is because KBHRM practices promote the generation, capture, dissemination and review of knowledge that is vital for creation of innovations. The Resource-Based View (RBV) emphasizes human capital and other resources to gain competitive advantages (Wernerfelt, 1984).

Regarding the antecedents of the telecommunications sector in Pakistan, RBV postulates that KBHRM practices are valuable assets within an organization through which human capital

can be managed to deliver innovation (Abrar et al., 2021; Wernerfelt, 1984).

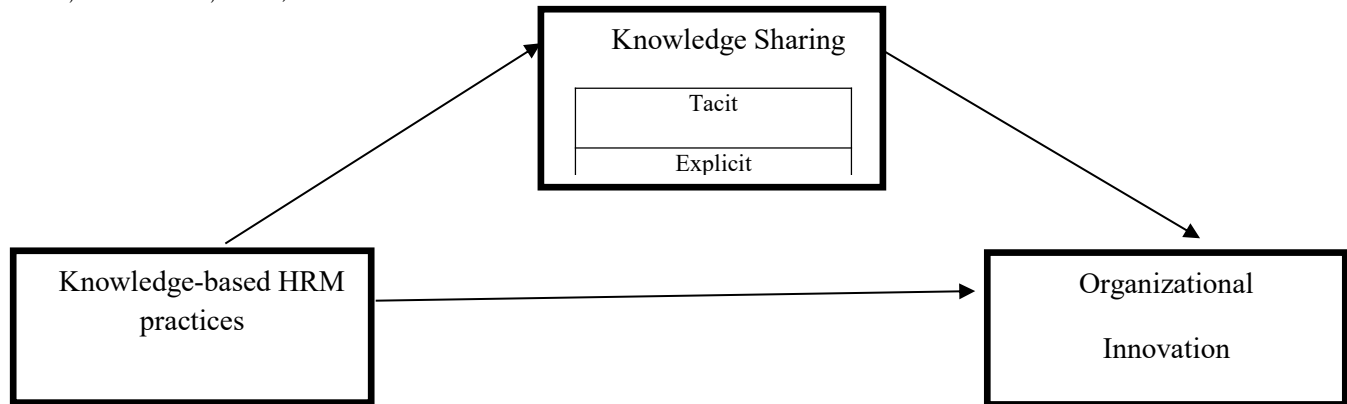


Figure 1 Conceptual Framework

Research Methodology

The Quantitative methodology that has been used in this study on the relationship between Knowledge-Based HR Practices, Knowledge Sharing (KS), and Organizational Innovation in Pakistan telecom sector includes Surveys and questionnaires filled through Google Forms and use a convenient sampling technique. The method of data collection encompasses the distribution of survey links through emails and social media pages to 166 employee participants affiliated with the telecom industry of Pakistan. The population framework is used to establish all the employees in Telecom organizations within Pakistan, as embedded with knowledge-based HR practices.

In this research, this study focuses only on the telecom firms working in Pakistan thus limiting the geographical scope of this research. In data analysis, the statistical approach of descriptive statistics, correlation and regression analysis will be employed to determine a relationship between knowledge-based HR practices, KS, and organization innovation. Such analysis tools give solid methodological approach to looking into the gathered data and identify tendencies, correlations, and possible causes. Moreover, the questionnaire also covers demographic data of the respondents, key HRM practices for knowledge-based organizations, knowledge sharing, and perceived organizational innovation, so that all the factors of interest can be investigated (Le, 2023).

Consequently, this research adopted positivism philosophy, where the Knowledge-Based HRM Practices and knowledge sharing lead to perceived Organizational Innovation through employee empowerment and development. It examines the actual relationships between the Knowledge-Based HRM practices, knowledge sharing and organizational innovation (Noopur & Dhar, 2020).

This study applied the primary research. This research uses a quantitative research methodology to assess the research hypothesis that Knowledge-based HRM practices have a direct impact on KS and indirect impact on organizational innovation in Pakistan’s telecom firms. The convenient sampling approach is used and the respondents completed self-generated questionnaires and survey forms for 166 employees of Pakistan Telecom sector, out of 200 distributed. Data collection includes a Google form and the link to the surveys is sent through emails and the different social media tools. This study is carried out for the population of employees in the Pakistan’s telecoms sector. The target population concerning this study is the human resource working in telecom organizations at the present. This study agenda focuses on the following research questions: To what extent does knowledge-based HR practice affect the organizational innovation in the telecom sector in Pakistan?

The number of respondents is 166 employees. This study convenient sampling technique is employed to

examine the causal association of knowledge transfer HR practices, knowledge sharing behavior, and organizational innovativeness in Pakistan’s telecom industries. In order to gather data from the employees of Pakistan’s telecom firms this study employs cross-sectional research design.

Here, measurement scales of KBHRM, Organizational Innovation and Knowledge Sharing are obtained from empirical research done in previous studies. Thus, Cronbach’s Alpha was used to determine the construct reliability, and the results came up to or above the expectations regarding KBHRM, OI and KS.

Table 1| Research Instrument:

Research Instrument	Number of Items	Empirical Evidence	Reliability
Knowledge-Based HRM Practices (KBHR)	13	(P. B. Le, 2024)	a = 0.84
Knowledge Sharing (KS)	13	(Lei et al., 2020)	a =0.81
Organizational Innovation (OI)	21	(Ruvio et al., 2014)	a =0.79

Data Analysis and Results

This study collected data from 166 participants and analysed their gender, age, degree of education and work experience. The majority of the population 60.8% is male from overall respondents, with a standard deviation of 0.485, while females have 39.2% from 65 respondents. On a scale the average age of participants, where 1 represents 20-30 years old and 4 represents 50-60 years old, with a standard deviation of 0.833, reflecting a somewhat diverse age range. The largest age group is 20-30 which representing 80 individuals, the 30-40-year-old group fellows nearly with 46 individuals. The 40-50-year-old group has 30 individuals, and the smallest group is 50-60-year-olds with only 10 individuals.

In Educational level the most individuals like 64 hold a Bachelor's degree, and the Master degree which is followed by 70. M. Phill have the smallest number which is 25 or Doctoral that’s 7 degrees.

In Experience Range, the majority overall 72 number of frequencies have 1-10 years of experience followed by 65 with 10-20 years of experience. 20 number of frequencies have 20-30 years’ experience which indicates smaller groups or 9 number of frequencies have 30-40 years’ experience.

4.2 Descriptive Statistic (Variables)

In this study focused on three main factors: KBHR, KS, and OI. The first variable KBHR has total number of sample size is 166. The minimum value is 1.38 out of 5. The second variable KS has total

number of sample size is 166. The minimum value is 1.69 out of 5. The last variable OI has total number of sample size is 166. The minimum value of observation is 1.62 out of 5. The first variable KBHR Cronbach’s Alpha worth is 0.885 from the total number of items is 13, which shows that the assessment tools for Knowledge-Based HR Practices are reliable.

Knowledge Sharing (KS) also shows high reliability, proved by a Cronbach's Alpha worth is 0.876 from the total number of items is 13, which shows that the tools used for measuring Knowledge Sharing are reliable.

Organizational Innovation (OI) achieves an even higher reliability score with Cronbach’s Alpha worth is 0.921 over 21 items which shows that the measures for Organizational Innovation are highly reliable.

Correlation Analysis

On a scale of 1 to 5, knowledge-based HRM practices (KBHR) receive an average rating of 3.8258, with significant variation across respondents the standard deviation is 0.69477. The reliability of the KBHR scale is strong Alpha is 0.885, indicating that the items used to assess this concept are constant. The regression analysis tells a strong positive relationship between knowledge-based HR practices (KBHR) and knowledge sharing (KS), with a coefficient of 0.745 and a significance level of $p < 0.01$ also indicating that higher levels of KBHR practices are related with higher levels of knowledge sharing. The average

rating for knowledge sharing (KS) is 3.8031, with considerable variability between responds standard deviation is 0.64472. The KS scale has an excellent reliability score Alpha is 0.876, suggesting that the measuring items are reliable.

The average rating for organizational innovation (OI) is 3.7870, with substantial variability across replies standard deviation is 0.63815. The OI scale has a very worthy consistency coefficient Alpha is 0.921, showing that the test items are consistent. Moreover, the analysis reveals a strong positive correlation between knowledge-based HR practices (KBHR) and organizational innovation (OI), with a correlation

coefficient of 0.710 and a significance level of $p < 0.01$ that indicating that higher levels of KBHR practices main to higher levels of organizational innovation. This study identified a strong positive correlation between knowledge sharing (KS) and organizational innovation (OI) ($r = 0.759, p < 0.01$). This suggests that higher levels of knowledge sharing correlate with higher levels of organizational innovation. These results suggest that by facilitating knowledge sharing, organizations can activate employee expertise and ideas to develop new products, services, and processes, thereby enhancing innovation and boosting competitiveness.

Regression/ Mediation Analysis

Table 2 Bootstrapping results for direct and indirect effects.

	Direct effects	Effects	SE	t	P
H1	Knowledge-based HRM Practices →Organizational Innovation	.3011	.0662	4.5503	.0000
H2	Knowledge-based HRM Practices →Knowledge Sharing	.680	.0488	14.0700	.0000
H3	Knowledge Sharing →Organizational Innovation	.5166	.0714	7.2300	.0000

(95% bias corrected confidence interval method)

	Indirect effect	Effects	SE	LLC	ULC	P
H4	Knowledge-based HRM Practices →Knowledge Sharing →Organizational Innovation	.3836	.0556	.2758	.4958	.0000

LL, Lower Limit, UL, Upper Limit, SE, Standard Error N=166, ** $p < 0.01$.

The effect of knowledge-based HRM Practices on Organizational Innovation have a positive direct impact ($\beta = 0.3011, p < 0.001$), and also on Knowledge Sharing ($B = 0.6860, p < 0.001$). In order Knowledge Sharing has a direct positive impact on Organizational Innovation ($B = 0.5166, p < 0.001$). Knowledge-based HRM Practices have a positive indirect effect on Organizational Innovation over Knowledge Sharing as an mediating effect ($\beta = 0.3836, p < 0.001$); representing that Knowledge Sharing shows a mediating role in the relationship between Knowledge-based HRM Practices and Organizational Innovation. The mediation effect is significant because it doesn't include zero. The ranges from 0.2758 to 0.4958 show 95% confidence interval for this indirect effect. Hayes process is used in this study to examine the mediating effect of Knowledge sharing on the relationship between KBHRM and organizational innovation.

The lower limit value for the indirect effect of KBHRM practices on organizational innovation through knowledge sharing is 0.2758 and the effect is positive and above zero. The upper limit value for the indirect effect is 0.4985. This is the upper boundary of the confidence interval, indicating the strongest effect observes in this analysis. KBHRM practices have both positive a direct and indirect positive impact on Organizational Innovation, indicating partial mediation, as the effect value is 0.3836.

This study aims to identify the link between the Knowledge-Based Human Resource Management (KBHRM) and Knowledge Sharing (KS) and the Organizational Innovation (OI) in the telecom sector of Pakistan which is considered important by the recent studies (Ahmed et al., 2020). In light of these findings, this study was able to emphasize the centrality of innovation towards the realization of organizational objectives especially within the context of the telecommunication industry. One of the practices, performed intensively to support the concept of innovation is the dissemination of

knowledge across the organization since it is found to effectively encourage the creation of new ideas and increase organizational performance (Le et al., 2024a). As indicated by the literature covering Knowledge-Based Human Resource Management (KBHRM) relationship to organizational innovation, the results of this study confirm to the studies done. The findings reveal that training and development which is a constitutive of the KBHRM positively influence the sharing of knowledge among the employees, boosting innovation in the organization.

The positive correlation between the KBHRM practices and the knowledge sharing also affirms the study (Abrar et al., 2021) where the knowledge-based training played a significant role in enhancing innovative behavior among personnel. Relatedly, (Le & Nguyen., 2022) found that KB-HRM supports both the hoop and bridge knowledge conversion model to promote knowledge sharing, thus strengthening an organization's innovation capability. The mediation of knowledge sharing between KBHRM practices and organizational innovation is supported by (Chen & Huang., 2009) study, which indicated that KBHRM practices enhance the innovation performance through increased knowledge management capability. In addition, (Ahmad et al., 2017) likewise established that knowledge management practices correlate with enhanced organizational performance, evidencing once again the importance of knowledge sharing. Such findings support the Resource-Based view on the firm (RBV) and the Knowledge-Based view on the firm (KBV). In the viewpoint of RBV conceptualized by (Wernerfelt, 1982), it is assumed that the internal resources like skilled human capital are crucial to generate competitive advantage and to pursue innovation. According to the different scholars, the KBV entails that the management of knowledge resources into the organization is essential to success and innovation.

Consequently, it is apparent from this study that there is a need to implement and enhance the KBHRM practices, triangular mediated by knowledge sharing to boost organizational innovation. The findings are consistent with previous research stressing the critical need for the tactical application of HRM initiatives to improve knowledge transfer and innovation. They should be studied in different

sectors and regions to extend the generalizability of the findings and examine other possible mediators and moderators (Cao et al., 2022).

Conclusion

The studies show that KBHRM practices have a direct positive relationship with the extent of organizational innovation through sharing a significant correlation between KBHRM and KS and between KS and innovation. In line with this, mediation analysis also reveals that while promoting KS in the multi-group context, its enhanced impact on innovation boosts the facilitating role of KBHRM in the umbrella manner at a significantly higher level (Abrar et al., 2021). It has corroborated the findings from the extant literature which reveals that enhancing knowledge sharing culture through properly aligned and coordinated HRM practices has a positive impact on innovation performance and could be a source of competitive advantage especially in the challenging telecommunication industry.

Therefore, for the telecom sector in Pakistan that have a desire to maintain and enhance their market standings, promoting and establishing the implementation of broad KBHRM programs that supports evident sharing of knowledge is essential. This research fills that empirical arena of how KBHRM, KS, and innovation are associated in the telecom sector and provide helpful vision to any manager and lawmaker who is eager to move an innovative and competitive organizational panorama. By developing a model on how knowledge-based HRM practices influence innovation performance, this research contributes greatly in the development of innovation theory. Namely, the model presents knowledge sharing as the process that occurs through the integration of two types of knowledge that act as mediators. Thus, utilizing this new perspective, this study provides insights into the multiple factors that could help the telecom organizations enhance their innovation performance. Organizational members appear to adopt a different perception of the subject by directing attention to the need to include the survey on successful HRM practice, knowledge sharing and support for innovation.

Limitations of study:

This study makes use of cross-sectional data a type of data that is collection over a limited time period only without considering time changes. This does not help explain the more dynamic aspect of organizational innovation, and information sharing. This is a limitation because concentrating on Pakistan's telecom sector, may limit the generalization of results to other sector or countries. In this study, a Quantitative research methodology is adopted. However, due to accessing a relatively small number of employees and the total number of the employees in the investigated companies are 166, the obtained results probably do not reflect the true population. Data collection method used includes online surveys and these might have brought in biases.

Such organizational factor profiles as knowledge sharing, organizational innovation, and knowledge-based human resource practices are among the features that are examined in this study. This cannot give an approximation of the total number of factors that might influence the outcomes of innovation. The state where organizations are able to engage in both exploration, which is the extent to which organizations try out new things, and exploitation, where organizations are fixed on using the familiar knowledge, at the same time is labeled as ambidexterity, and is not a factor included in this study. This can be a significant challenge on the way to grasping how innovation and knowledge sharing are related.

Despite the contributions of this study to fill the existing literature gap by examining the relationship between KBHRM practices and innovation performance (Le, 2023) this study exclusively suggests on ambidexterity's static dimension. This research urges the need for greater research studies and projects, methodologically as well as, geographically, when it comes to the applicability of mixed techniques, and designs that administer longitudinal examinations to capture the intricate relationship between organizational innovation and knowledge-based HR practices (Le & Do., 2023).

Future Research Directions

To expand on the contextual factors influencing these interactions, future research should determine the level of impact that knowledge-based HRM has

on organizational innovation in various sectors like, IT, manufacturing, finance, and other South Asian countries and so on. Further research should incorporate longitudinal designs when examining the evolutionary progress of organizational innovation and information sharing. It should also take a look at how these aspects impact the various industries and regions and also involve a greater pool of participants to have a more generalizable result. To overcome limitations that are specific to each data collection technique and also study other variables that might influence innovation, the researchers have to consider employing more than one data collection technique.

They should also factor how the organizations manage exploration (experimentation activities) and exploitation (activities within the organization's comfort zone). The factors are intricate and have interactional relationships and so both minimum variable (numbers) and maximum variable (stories and experiences) research designs must be used to analyze the relationships between organizational innovation and knowledge-based HR practices. More studies should be conducted to understand the moderating role of the organizational culture, leadership, and technological systems on the links between the HR practices and innovation.

The mixed-methods approach should be used to gather more comprehensive data concerning the influence of knowledge-based HRM on innovation (Abrar et al., 2021). It is also necessary for the researchers to look at how the new technologies such as artificial intelligence and big data can enhance the knowledge-based HRM practices and enhance the knowledge sharing for innovation. Nevertheless, researcher should continue exploring employee point of view, comparing the results of different demographic characteristics (age, gender, years of service, etc.) on the efficiency of knowledge based HRM policies and employees' readiness to share their knowledge.

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