

Mediating Role of Knowledge Sharing in the Nexus among Human Capital, IT Capability, Transactional Leadership and Innovation Performance: Empirical Evidence from Bangladeshi Telecommunication Sector

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Abstract

This research aims to investigate how Knowledge Sharing affects the relationship between Human Capital, IT Capability, Transactional Leadership, and Innovation Performance in the Bangladeshi telecommunication industry. In this quantitative study, a structured questionnaire was utilized to elicit data through a google form applying convenience sampling approach, which targeted 320 respondents working in six Bangladeshi telecommunication firms and yielded 300 useable responses with a response rate of 92 percent. SEM-PLS technique using Smart PLS 3.2.9 and cross-sectional design were used to evaluate the hypotheses in the suggested research model, as well as descriptive statistics was done by SPSS 26 to offer background on the participants. The findings show that human capital, IT capability, and transactional leadership all have a positive and statistically significant influence on Bangladesh's telecommunication sector's knowledge sharing and innovation performance. The findings further reveal that knowledge sharing acted as a mediating factor in the association between human capital, IT capability, transactional leadership, and innovation performance. The current study offers managers with empirical proof that having enough human capital, IT capability, and transactional leadership appears to assist the Bangladeshi telecommunication sector strengthening its potential to boost both radical and incremental innovation performance. To the best of the author's knowledge, this is the first integrated research to look at the interrelationships between Human Capital, IT Capability, Transactional Leadership, and Innovation Performance in the context of the Bangladeshi telecommunication sector using knowledge sharing as a mediator. Overall, the research findings have expanded understanding and introduced new proposals for Bangladesh's telecommunication sector to follow and enhance its innovative performance.

Keywords: *Human Capital, IT Capability, Transactional Leadership, Knowledge Sharing, Innovation Performance.*



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Introduction

According to several studies, innovation performance is the most important source of competitive advantage for businesses (Asbari et al., 2020; Asbari et al., 2020a; Asbari & Novitasari, 2020a, 2021; Asbari et al., 2020b; Fayzhall et al., 2020; Novitasari et al., 2020; Goestjahjanti et al., 2020; Suprapti et al., 2020). Previously, the primary focus of businesses was on sustaining steady productivity; however, today, every company aspires for innovative performance that can provide value in a dynamic and complicated environment (Basuki et al., 2020; Asbari et al., 2020; Cahyono et al., 2020; Novitasari & Asbari, 2020; Gazali et al., 2020; Purwanto et al., 2020; Zaman et al., 2020; Santoso et al., 2020). In contrast to major rivals, innovation performance is one of the most important factors that allows businesses to obtain a competitive edge and achieve long-term success (Nguyen et al., 2018; Le & Lei, 2019; Rujirawanich et al., 2011; Lei et al., 2021b). Innovation performance is not only a key determinant of product and process innovation and company success, but it is also a key source of competitive advantage for businesses (Kaya & Patton, 2011; Le & Tran, 2020; Son et al., 2019; Tajasom et al., 2015; Lei et al., 2021a). Aside from that, innovation has a role in generating new competitive ways of conducting business, coping with obstacles, and addressing market order and existing organizational issues (Goestjahjanti et al., 2020; Asbari & Novitasari, 2020; Asbari et al., 2020). Innovative employee behavior in the workplace is the foundation of every high-performing firm (Turnipseed & Turnipseed, 2013), since innovative ideas generated via innovative behavior serve as the foundation for developing competitiveness, whether for products or services (Purwanto et al., 2021a). Knowledge is the key to improving innovation, according to previous studies (for instance, Mangiarotti & Mention, 2015; Lin, 2007; Radaelli et al., 2014). Knowledge sharing, collaborative innovation capabilities, and corporate innovation performance all have strong positive correlations (Wang et al., 2020). Knowledge and technology, according to Rouse and Daellenbach (2002), are the most significant predictors of innovation performance. Lau et al. (2019) investigated how a firm's technological capabilities influences its innovation performance. The importance of addressing the technological level of the company as a contingency variable impacting the HC–innovation link was underlined by Buenechea-Elberdin et al., (2018). Ma et al. (2019) looked at how manufacturing companies in various nations and regions use human capital to innovate. Wendra et al. (2019) looked at how human capital affects a company's innovation performance. Digital leadership, according to Benitez et al., (2022), increases a firm's innovation performance through digitizing the platform. The expertise of an individual gives materials for the organization to produce knowledge and inventions (Hutagalung et al., 2020; Agistiawati et al., 2020). As a result, effective information sharing is inextricably linked to improved organizational innovation performance (Zhao et al., 2015). According to Felin and Hesterly (2007), innovation performance is connected to the knowledge and behaviors of those who manage that information. In an increasingly globalized market, the telecommunications business, like other industries, is under growing pressure to gain a competitive edge (Bang & Markeset, 2011; Sbordone, 2007; Subramanian, 2017). Knowledge sharing may provide firms a competitive advantage by allowing them to be more inventive and responsive to difficulties (Oyemomi et al., 2019). High-skilled human capital is a critical feature of innovation processes at the company level, according to Fonseca et al. (2019). Knowledge-sharing initiatives that might boost performance and keep firms profitable are often lacking in organizations (Dee, 2017; Obeso et al., 2020). This issue may be especially devastating to telecom companies, who operate in a highly competitive industry and consequently require competitive advantages in order to exist, much alone prosper (Subramanian, 2017). With organizations focusing more on efficiency in achieving organizational goals (Ganguly et al., 2018), research on information sharing implies that such knowledge sharing might give a competitive advantage in the market (Liu et al., 2019). In brief, transactional leaders can build more productive work cultures and

improve innovation performance through boosting information exchange (Zhu et al., 2020; Jing & Avery, 2016). This research will add to the body of information on human capital, IT competency, transactional leadership, knowledge sharing, and innovation success in businesses in general and telecommunication firms in particular. However, in the context of Bangladesh's telecommunication industry, integrated research on human capital, IT capability, transactional leadership, knowledge sharing, and innovation performance is urgently needed.

Despite the increased interest in knowledge sharing, human capital, IT capability, transactional leadership, and innovation performance, to the authors' knowledge, no study has provided an integrated empirical evidence linking human capital, IT capability, and transactional leadership with firm-level innovation via knowledge sharing as a mediator, particularly in the telecommunication industry from a Bangladeshi perspective. Based on these assumptions, the primary goal of this study is to fill up that gap by conducting an empirical analysis of the combined connection. The research is arranged as follows: first, a description of the relationship between variables is presented, followed by the study hypothesis. Following that, a discussion of the findings is offered, followed by conclusions, theoretical and managerial implications, study limitations, and recommendations for further research.

Theoretical Framework and Hypotheses Development

The most current human capital perspective emphasizes individual workers' talents and all other traits as assets for businesses that will boost productivity and innovation (Gennaioli et al., 2013; Nguye, 2020). In order to face the difficulties of innovation, transactional leadership has become a critical component in businesses (Sutardi et al., 2020; Novitasari et al., 2020; Zaman et al., 2020). According to Kharabsheh (2007), there is a definite link between technology and information exchange. According to Wang and Wang (2012), in the value creation process, workers' knowledge, ability, and experience are significantly reliant on innovation projects. Furthermore, knowledge sharing improves both organizational performance and innovation (Becerra-Fernandez et al., 2008). According to Wang and Han (2011), a company's innovation performance is determined by its potential capacity to transform information into action, as well as its ability to discover knowledge value and improve innovation performance. As a result, the purpose of the current study is to examine the relationship between human capital, IT capability, transactional leadership, and innovation performance in the context of Bangladeshi telecommunication industry using knowledge sharing as a mediator. The research model with hypothesized association in Figure 1 is proposed in this study to illustrate the link between the research variables. On this study, human capital, IT capability, and transactional leadership are employed as independent factors, with innovation performance as the dependent variable and knowledge sharing as the mediator variable.

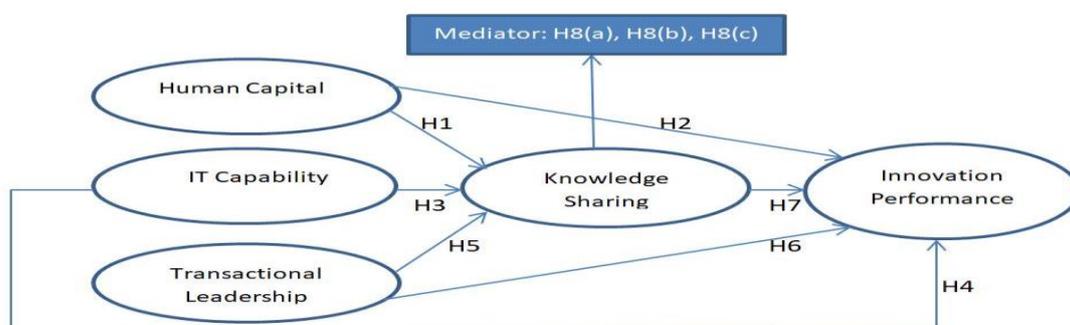


Figure 1: Conceptual framework of the research

Table 1: Definition of Constructs

Constructs	Definition
Human Capital	Human capital refers to the abilities, knowledge, skills, and experiences of an organization's employees and management that may be used to drive creative operations to some level (Kannan and Aulbur, 2004). Human capital is widely acknowledged as an organization's most significant intangible asset, the bedrock of all types of knowledge, and the fundamental source of intelligence, knowledge, creativity, and creation (Obeidat, 2017).
IT Capability	"A firm's capacity to mobilize and deploy IT-based resources in combination or co-present with other resources and competencies," according to Bharadwaj (2000). "The extent to which a corporation is aware of and successfully utilizes IT to handle information within the enterprise," said Tippins and Sohi (2003). "The capacity to manage IT-related expenditures, deploy systems as needed, and effect business objectives through IT efforts," according to Ross et al (1996).
Transactional Leadership	Transactional leadership is defined by Bass (1985) as a process in which leaders and subordinates share knowledge. By establishing a clear trading connection with subordinates, transactional leadership appeals to their self-interest and focuses more on extrinsic demands (Bass et al., 2003). Typical management tasks, such as establishing roles, duties, and job requirements, as well as rewarding task completion and rectifying task failure, are all part of this sort of leadership (Armandi et al., 2003).
Knowledge Sharing	According to Wang and Noe (2010) Knowledge sharing is the sharing of task information and know-how with others to help them solve problems, produce new ideas, or implement policies or processes. Jahani et al. (2011) describe knowledge sharing as the act of communicating or disseminating information from one person, group, or organization to another. Information, skills, and ideas are shared across organizational members through knowledge sharing, according to Kim and his colleagues (2013).
Innovation Performance	"Innovation performance relates to company results in terms of the number of innovations they actually bring to the market, such as the pace at which they introduce new commodities, process systems, or technologies," according to Tajasom et al (2015). According to Alshekaili and Boerhannoeddin (2011), innovation performance relates to a company's willingness to accept new and innovative ideas. According to Leavengood and Anderson (2011), innovation performance is a multi-dimensional process that includes product, process, and business system innovation.

Human Capital (HC) and Knowledge Sharing (KS)

Human capital also refers to how well a company utilizes its human resources, as evaluated by creativity and innovation (Budur et al., 2021; Rashid et al., 2020). The amount of knowledge held by individuals in a society is referred to as human capital (Schultz, 1961). Human capital, according to scholars, would increase the quality of knowledge exchanges' substance as well as sharers' 'cognitive-based trust,' or confidence that the shared knowledge would not be squandered or exploited by the recipients (Chowdhury, 2005). As a result, the notion of high human capital may lead to higher expectations of advantages derived from knowledge sharing, hence encouraging information sharing (Emerson, 1976). Expertise workers' attitudes and readiness to share their information determine whether their knowledge can be shared with other employees (Wang and Wang, 2017). To encourage information sharing, construction leaders, according to Egbu (2004), must include knowledge workers in dynamic knowledge management. Formal education and training for employees are two of the most essential aspects that contribute to knowledge exchange (Ma et al., 2019). Based on prior studies, the hypothesis is as follows:

H1: HC positively affects KS in the Bangladeshi telecommunication industry.

Human Capital and Innovation Performance (IP)

Creating business innovation is, above all, a human task (Kianto et al., 2017). In the value creation process, innovation activities much more depend on employees' skills, abilities, and experiences (Wang and Wang, 2017). Human capital is a valuable intangible asset that

businesses have, especially when it comes to innovation (Brooking, 1996). Employees have a significant role in attaining company innovation since they are the carriers of knowledge (Winne and Sels, 2010). Employees that are creative and knowledgeable are more likely to produce new ideas and boost a company's innovation performance. Knowledge, skills, and competences in human capital may be necessary for innovation (Subramaniam and Youndt, 2005). Knowledge, skills, talents, and experiences are all components of human capital that contribute to new ideas and a better understanding of the effects of innovation (Han and Li, 2015). In addition, human capital is one of the unique and distinguished assets that make the organization gain competitive distinction because of their specialized knowledge, which contributes to the development of new ideas, products and services, which are difficult to replicate and imitate by other organizations (Obeidat et al., 2016). Because the diversity of human capital expertise, skills, ideas, and experiences is a great source of innovation, the inability to hire experienced and skilled employees can deprive the organization of subsequent innovations, well-trained employees with distinct skills, talent, and experience in support of the development of new products and services (Obeidat et al., 2016). Good human capital is required for the development and implementation of new ideas and breakthroughs (Varadarajan, 2018). Any change in goods, services, or procedures necessitates innovation, which in turn lead to the dissemination of knowledge within the firm (Sivalogathan and Wu, 2015). Based on literatures, the hypothesis is as follows:

H2: HC positively affects the IP of Bangladeshi telecommunication industry.

Information Technology Capability (ITC) and Knowledge Sharing

IT capability refers to the unique assets, abilities, knowledge, procedures, and connections that enable businesses to buy, implement, and manage IT goods and services in order to shape innovations and business goals (Sambamurthy and Zmud, 1997; Feeny and Wilcocks, 1998). Ismail and Yusof (2010) looked at the impact of technical elements such information technology infrastructure, know-how, and tools on the quality of knowledge exchange among Malaysian government personnel. Aulawi et al., (2008) characterized IT as an important component that has a direct influence on the knowledge sharing behavior of employees. Within the company, employees use information technology to get access to expertise and relevant information (Gupta & Govindarajan, 2000; Lee & Choi, 2003). IT has the capability of acquiring, storing, processing, retrieving, and transmitting knowledge, allowing persons who are physically close or far apart to exchange their information at the same time or independently (Bousari & Hassanzadeh, 2012). In light of the above discussions, the following hypothesis is proposed:

H3: ITC positively affects the KS of Bangladeshi telecommunication industry.

Information Technology Capability (ITC) and Innovation Performance

Information synergy and IT capabilities, according to Huang et al., (2009), can boost a company's innovation. In addition, according to Bartel et al., (2007), investing in new information technology in a manufacturing organization will result in increased efficiency and product innovation. Terziovski (2010) says that "organizations with the ability to rethink their work processes regularly by taking use of new technology and such continuous improvement strategies as total quality management and just-in-time have awarded praise for being innovative". Ghazali et al. (2014) proposed new studies that more accurately reflected the impact of technology on innovation. The combined research of IT infrastructure and innovation was proposed by Haque et al., (2016), Pérez-López and Alegre (2012), and Mauerhoefer et al., (2017) explored how IT infrastructure may help organizations innovate, concluding that the capacity to create innovation is dependent on the ability to acquire and use IT resources, and

that IT tools have an influence on the firm's innovation performance. Based on the above discussions, the following hypothesis is proposed:

H4: ITC positively affects the IP of Bangladeshi telecommunication industry.

Transactional Leadership(TL) and Knowledge Sharing (KS)

Transactional leadership has been shown in several studies to have a considerable beneficial impact on knowledge sharing (Analoui et al., 2013; Birasnav, 2014; Riaz and Khalili, 2014). According to a research by Analoui et al. (2013), transactional leadership has a strong link to knowledge sharing and dissemination. Transactional leadership and information sharing have a beneficial association, according to Masa'deh et al. (2016). The transactional leadership style, according to Bass (1985), may be separated into two dimensions: contingent reward and exception management. Previous research has backed up the idea that a transactional leader is a key component in speeding knowledge exchange in a company (Singh, 2008; Srivastava et al., 2006; Xue et al., 2010). Favorable authority granted to a transactional leader has a positive impact on information sharing (Srivastava et al., 2006; Xue et al., 2010). Such behaviors enable information sharing if a transactional leader fosters a trusting environment, inspires employees, or listens to employee grievances (Rawung et al., 2015). Transactional leadership approaches have been shown to have a positive influence on knowledge sharing in the workplace (Bock and Kim, 2002; Bryant, 2003; Crawford, 2005; Rawung et al., 2015). In light of above studies, the following hypothesis is postulated.

H5: TL positively affects the KS of Bangladeshi telecommunication industry.

Transactional Leadership (TL) and innovation Performance (IP)

Transactional leadership has a big influence on innovation and creativity (Vargas, 2015). According to Nemanich et al. (2007), transactional leadership is associated with incremental or increased product innovation. Transactional leaders use contingent rewards to set explicit goals, expectations, and rewards for organizational innovation (Avolio et al., 1999). This type of leadership encourages organizational members to commit to completing specified tasks connected to pursuing creative activities (Avolio et al., 1999). The transactional leadership style, both theoretically and empirically, promotes organizational innovation performance and competitiveness (Makri and Scandura, 2010). A manager's leadership style is a critical component of any organization's success. As a result, the manager's deployment of appropriate leadership styles can boost staff productivity and innovation (Li et al., 2018b). Leaders seek to establish conditions inside the company that promote the invention and execution of organizational innovations (Makri and Scandura, 2010). Even if the leader isn't directly involved in the development of organizational innovations, he or she may contribute to the creation of an atmosphere that supports experimentation and the introduction of new ideas, processes, procedures, or structures (Trung et al., 2014). As a result, leadership is crucial in promoting organizational innovation inside the corporation (Hambrick and Mason, 1984). In light of above literatures, following hypothesis is developed.

H6: TL positively affects the IP of Bangladeshi telecommunication industry.

Knowledge Sharing (KS) and Innovation Performance (IP)

Knowledge sharing allows previously unrelated ideas, points of view, facts, and information to be combined, forming the foundation for the production of new knowledge and creativity (Nahapiet and Ghoshal 1998; Brachos et al. 2007; Cohen and Levinthal 1990; Kogut and Zander 1992). Cohen and Levinthal (1990) believe that contact between people with diverse types of knowledge boosts an organization's potential to innovate. According to Boland and Tensaki (1995), an organization's innovation performance is the outcome of interactions among employees with various types of knowledge. Knowledge sharing among employees is such an

important element in the process of organizational knowledge production that if it is not done well, it may be a severe roadblock to the growth of this process and, as a result, to the success of innovation (Ipe 2003; Chang et al. 2007). Organizations that foster information sharing practices, according to Seidler-de Alwis and Hartmann (2008), are more effective in terms of innovation. Swan et al., (2007) found a favourable association between information sharing and innovation initiatives in their investigation of the factors that impact innovation in the biomedical industry. According to Brachos et al. (2007), creativity improves when the required variables for inspiring individuals to share and transfer knowledge are available. Many previous studies (Yang et al., 2018; Wang & Wang, 2012; Zheng et al., 2017; Sáenz et al., 2009; Le & Lei, 2018b) have demonstrated the relevance of KS for innovation performance. According to Le and Lei (2018b), a firm's knowledge and learning capabilities is positively related to its innovation rate and quality. Employee KS behaviour, according to Jantunen (2018), may lead to better corporate innovation performance. Because innovation initiatives are primarily dependent on employees' knowledge and skill in the process of creating value, as well as their ability to transform and apply knowledge in the production of goods and services, Wang and Wang (2012) asserted that the KS process contributes to innovations in teams, units, and the entire organization. According to Zheng et al. (2017), KS activities are favourably connected with a firm's innovation performance. Based on the foregoing reasoning, we suggested the following hypothesis to have a better understanding of how KS effects innovation performance:

H7: KS positively affects the IP of Bangladeshi Telecommunication Industry.

Mediating role of knowledge sharing (KS)

It has been postulated that HC, IT capability, and TL are all positively related to KS and IP. It's been suggested that KS is associated to IP in a beneficial way. Kaewchur, et al. (2013) conducted a study with 224 respondents from herbal manufacturing enterprises on the association between ITC and IP using KS as a mediator. Furthermore, a study conducted by Li et al (2019) on the Chinese construction industry revealed that HC had an impact on IP via KS. Baskoro et al., (2021) looked at the role of KS in the link between TL and IP in the Jakarta construction sector. As a result, the following hypothesis may be proposed:

H8(a). The link between HC and the IP in Bangladeshi telecommunication sector will be mediated via KS.

H8(b). The interaction between ITC and IP in the Bangladeshi telecommunication sector will be mediated via KS.

H8(c). The interaction between TL and IP in the Bangladeshi telecommunication sector will be mediated via KS.

Research methodology

Research Design

The quantitative technique is suitable for this study since the goal is to evaluate the connection between the variables. Quantitative research methods may be used to examine ideas and hypotheses using a set of statistical tools (Creswell & Creswell, 2017). The reflective measurement model is appropriate for this investigation since it involves a dependent effect between latent components and manifest variables (Hair et al., 2017).

Sample and Data Collection

As data collection tool, the study applied an online survey questionnaire in google form via convenience sampling technique. To pick respondents, the researcher looked at six telecommunication companies in Bangladesh. To meet research needs, participants in this study must be key employees in various managerial positions under department of HR, IT,

product development, customer service, operations, marketing, and sales etc. to ensure that they have a thorough understanding of their company and that strategic information is frequently exchanged within the organization. The author communicated with 320 representatives from above mentioned departments via phone, mail, and/or personal visits to explain the importance of the project and solicit their help in collecting questionnaires. There are 315 participants of them who are eager to cooperate. 320 questionnaires were distributed via online to participants as part of the data collection, and 315 responses were collected. Only 300 of the responses were valid, resulting in a 92 percent validity rate.

Table 2: Construct, Measurement items and Source table

Constructs	Items	Sources
Human Capital	HC1: Our company's personnel are quite knowledgeable.	(Bontis, 1998; Abualoush et al., 2018a)
	HC2: Our company's personnel are bright and innovative.	
	HC3: Our company's staff have the potential to generate fresh ideas and expertise.	
	HC4: The company's staff have a lot of work experience.	
IT Capability	ITC1: Our company has a lot of computer-based technological knowledge.	(Tippins and Sohi, 2003)
	ITC2: Using computer-based technologies, our organization is adept at gathering and evaluating market data about our clients.	
	ITC3: When the requirement arises, our organization produces bespoke software applications.	
Transactional Leadership	TL1: My position of leadership motivates me to consider challenges in fresh ways.	(Dai et al., 2013; Masa'deh et al., 2016)
	TL2: My superiors are aware of my predicament and are willing to provide me support and aid.	
	TL3: In exchange for my hard labor, my authority grants me everything I desire.	
	TL4: My superiors inform me that if I do well at work, I will receive special prizes.	
Knowledge Sharing	KS1: When discussing work-related issues with my coworkers, I usually try my best and provide solutions.	(Yang et al. 2018).
	KS2: If anything is difficult to explain, I will gladly demonstrate it to my colleagues.	
	KS3: When my coworkers are in need, I try my best to provide them with the information and documentation they require.	
	KS4: When I educate my colleagues, I make sure that they understand all I'm saying.	
Innovation Performance	IP1: Our company has a track record of introducing innovative items to markets ahead of the competition.	(Kaya and Patton, 2011)
	IP2: Our company has a lot of emerging innovations in terms of work, procedure, and approach.	
	IP3: Our company has a lot of product and service development ideas and initiatives.	

Variable Measurement

The questionnaire is divided into two sections: part one contains items that measure the respondents' demographics, such as gender, job title, departments, and years of experience; part two contains multiple items that measure the variables, such as human capital, which has four items adopted from (Bontis, 1998; Abualoush et al., 2018a), IT capability, which has three items adopted from (Tippins and Sohi, 2003), transactional leadership, which has four items adopted from (Dai et al., 2013; Masa'deh et al., 2016), innovation performance consisted of 3 items adopted from (Kaya and Patton, 2011), and knowledge sharing with 4 items adopted on the ideas of each (Yang et al. 2018) etc. highlighted in this study via five-point Likert-type scales

ranging from “1” (strongly disagree) to “5” (strongly agree) to ensure the validity and reliability of the research.

Data Analysis Methods

A PLS-SEM analysis was performed using Smart PLS (version 3.2.9) to examine the study model (Ringle et al, 2021). PLS-SEM is a multivariate statistical method for examining all interactions between variables in a conceptual model, including measurement and structural components, at the same time (Sarstedt et al., 2011; Hensler et al., 2016; Sarstedt et al., 2011; Hair et al., 2014; Henseler et al., 2016). This study assessed the measurement model, specifically the reliability and validity of reflective constructs, as well as the structural model, specifically the R2, path coefficients, and values of standardized root mean square residual (SRMR) as an approximate model fit for PLS-SEM in the context of the Bangladeshi telecommunication industry (Henseler et al., 2016). SPSS version 26 was used to determine the demographic profile of the respondents, as well as to provide counts and percentages, due to its ease of use.

Data analysis and results

Demographic Characteristics

This research comprises of important management level professionals with expertise in different areas such as business operations, customer service, HR, IT, marketing, product development, sales and service, and so on of Bangladeshi telecommunication sector.

Table 3: Demographic Profile

Demographic Variables		Frequency	Percentage
Gender	Male	210	70.00
	Female	90	30.00
	Total	300	100.00
Job Title	Assistant Manager (AM)	74	24.67
	Deputy Manager (DM)	66	22.00
	Manager	60	20.00
	Deputy General Manager (DGM)	65	21.67
	General Manager(GM)	35	11.66
	Total	300	100.00
	Department	Business Operation (BO)	48
Customer Service (CS)		53	17.67
HR		45	15.00
IT		42	14.00
Marketing		37	12.33
Product Development (PD)		42	14.00
Sales and Service (SS)		33	11.00
Total		300	100.00
Job Experiences	Below 5 years	70	23.33
	5-10 years	70	23.33
	11-15 years	65	21.67
	Above 15 years	95	31.67
	Total	300	100.00

Source: SPSS data analysis

Table 3 shows that there were 210 males (70%) and 90 females in the sample (30%). There are 74 (24.67 percent) AMs, 66 (22 percent) DMs, 60 (20 percent) Managers, 65 (21.67 percent) DGMs, and 35 (11.67 percent) GMs among these responders. In terms of department, 48 (16%) of respondents work in the BO department, 53 (17.67%) in the CS department, 45 (15%) in the HR department, 42 (14%) in the IT department, 37 (12.33%) in the marketing department, 42 (14%) in the PD department, and 33 (11%) in the SS department. In terms of employment experience, 70 (23.33 percent) have worked in the telecom business for less than

five years. Whereas 70 (23.33 percent), 65 (21.67 percent), and 95 (31.67 percent) of them have worked for 5-10 years, 11-15 years, and over 15 years at their present firms, respectively.

Evaluation of Measurement model

The researcher established a measurement model consisting of five constructs, namely HC, ITC, TL, KS, and IP, and used CFA to analyze the measurement model in order to validate the various scales used in this study. The reliability of the construct' measures in this study was assessed using Cronbach's alpha, which was higher than the indicated limit of 0.7. (Nunnally and Bernstein, 1994). The convergent and discriminant validity of the entire measurement model were investigated. The model met Hair et al (2017) convergent's validity requirements since all factor loadings were larger than 0.6, CR values were higher than the proposed 0.7, and AVE values were greater than 0.5.

Table 4: CFA Analysis for Measurement Model

Constructs	Items	Factor Loading	Cronbach's Alpha	CR	AVE
Human Capital	HC1	0.863	0.895	0.927	0.761
	HC2	0.900			
	HC3	0.881			
	HC4	0.844			
IT Capability	ITC1	0.901	0.892	0.933	0.822
	ITC2	0.912			
	ITC3	0.906			
Transactional Leadership	TL1	0.740	0.778	0.857	0.600
	TL2	0.823			
	TL3	0.776			
	TL4	0.759			
Knowledge Sharing	KS1	0.838	0.859	0.904	0.702
	KS2	0.814			
	KS3	0.861			
	KS4	0.838			
Innovation Performance	IP1	0.898	0.835	0.901	0.753
	IP2	0.899			
	IP3	0.804			

Source: PLS data analysis

Table 5: Fornel Larcker Criterion

	HC	ITC	IP	KS	TL
HC	0.872				
ITC	0.116	0.907			
IP	0.252	0.346	0.868		
KS	0.336	0.293	0.449	0.838	
TL	0.076	0.125	0.392	0.217	0.775

Source: PLS data analysis

The Fornell and Larcker criteria proves discriminant validity since "the square root of AVE" (bolded diagonal items) is bigger than "correlation coefficients" (non-bolded elements) for all constructs, as shown in Table 5. (Fornell and Larcker, 1981). The HTMT criteria, on the other hand, performs considerably better than the Fornell-Larcker criterion for determining discriminant validity, according to Henseler et al. (2015). This study used HTMT analysis, and it was discovered in table 6 that all of the HTMT values are less than the 0.850 cut-off threshold established by Henseler et al. (2015), indicating satisfactory discriminant validity. Furthermore, in this paper, SRMR and NFI produce values of 0.053 and 0.86, respectively, reaffirming the PLS path model's overall fit (Hair et al., 2014 and Henseler et al., 2014), because the closer the NFI to 1, the better the fit, and SRMR less than threshold value 0.08 indicates

good fit (Hair et al., 2014; Ringle et al., 2017). After confirming the model's reliability and validity, the measurement model is evaluated as appropriate and valid.

Table 6: HTMT Ratio

	HC	ITC	IP	KS	TL
HC					
ITC	0.127				
IP	0.293	0.397			
KS	0.377	0.329	0.527		
TL	0.103	0.152	0.481	0.265	

Source: PLS data analysis

Common Method Bias

If the VIF values for each latent variable are substantially greater than one, CMB may be present (Henseler et al., 2016). VIF values less than five indicate that the problem of multicollinearity does not exist (Hair et al., 2011). The VIF values for each component in this study are not considerably greater than 1 and less than 3.3, showing that the model was not contaminated by CMB (Kock, 2015).

Assessment of Structural Model

The structural model was utilized to evaluate the hypothesized links between the research variables. The authors performed the VIF, R^2 , Q^2 , F^2 , the relevance of structural routes, and the size of path coefficients when assessing the structural model. The authors used VIF to test for multicollinearity and found that all of the pathways had VIF values less than 3.3, indicating that there were no worries about multicollinearity. R^2 values for endogenous dimensions like Innovation Performance and Knowledge Sharing were 0.345 and 0.205, respectively, indicating that social science research has a reasonable level of in-sample explanatory power (Rasoolimanesh et al. 2019). In addition, the authors used an omission distance of $D=8$ in the blindfolding method to assess the route model's predictive relevance. Hence, the Q^2 values of each endogenous constructs (IP and KS) were calculated. Table 7 shows that Q^2 values for endogenous constructs, such as IP (0.251) and KS (0.136), are greater than zero, demonstrating predictive relevance for outcome variables (Hair et al., 2016).

Table 7: Structural Path Analysis (Direct Effect)

Hypotheses	Relations	Std. Beta	Std. Error	T Value	P Value	Decision	R^2	Q^2	F^2	LLCI	ULCI	VIF
H1	HC -> KS	0.296	0.058	5.132	0.000	S	0.205	0.136	0.108	0.181	0.406	1.018
H2	HC -> IP	0.109	0.042	2.594	0.010	S			0.016	0.027	0.192	1.128
H3	ITC -> KS	0.238	0.055	4.286	0.000	S			0.069	0.127	0.344	1.028
H4	ITC -> IP	0.212	0.046	4.594	0.000	S			0.063	0.122	0.307	1.099
H5	TL -> KS	0.165	0.063	2.612	0.009	S			0.034	0.044	0.291	1.020
H6	TL -> IP	0.296	0.061	4.841	0.000	S			0.127	0.179	0.414	1.054
H7	KS -> IP	0.286	0.053	5.377	0.000	S	0.345	0.251	0.099	0.180	0.387	1.258

Note: S=Supported

Source: PLS data analysis

Furthermore, to determine the statistical significance of the route coefficients, the researchers conducted bootstrapping using 5000 subsamples. Table 7 and Figure 2 show that the paths from HC to KS ($\beta = 0.296$, $p < 0.05$), HC to IP ($\beta = 0.109$, $p < 0.05$), ITC to KS ($\beta = 0.238$, $p < 0.05$), ITC to IP ($\beta = 0.212$, $p < 0.05$), TL to KS ($\beta = 0.165$, $p < 0.05$), TL to IP ($\beta = 0.296$, $p < 0.05$) and KS to IP ($\beta = 0.286$, $p < 0.05$) are statistically significant and in the hypotheses' predicted directions.

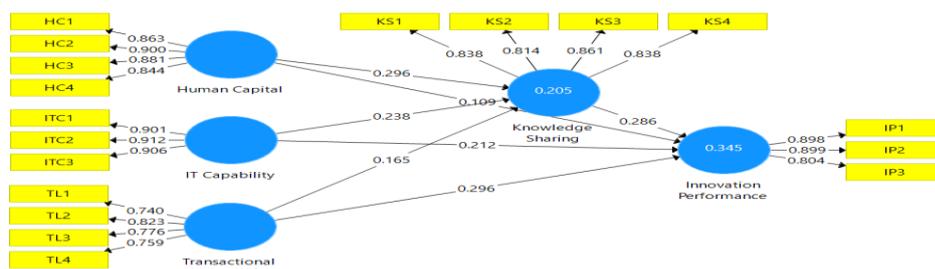


Figure 2: Structural Path Model

As a result, H1, H2, H3, H4, H5, H6, and H7 were exhibited to be supported in this investigation. Furthermore, as shown in Table 7, the relative magnitude of the route coefficients reveals that in the Bangladeshi telecommunication industry, HC and TL contribute the most to KS and IP, respectively. Furthermore, the mediating effect of KS in the interaction between HC, ITC, and TL and IP was investigated in this study. Table 8 demonstrates that all of the pathways have statistically significant indirect effects ($p < 0.05$), indicating that mediation is a viable option (Preacher and Hayes, 2004; Zhao et al., 2010). Furthermore, the path from independent variable to dependent variable through mediator should be regarded significant if zero (0) does not occur in the lower limit (LL) or upper limit (UL) of the indirect effect's confidence interval (Preacher and Hayes, 2008; Hayes, 2013). Table 8 shows that the mediator "KS" met this criterion since no zero appeared between the LL and UL confidence intervals, indicating a statistically significant mediation effect. As a result, antecedents such as HC, ITC, and TL may indirectly influence IP via KS. Hence, H8(a), H8(b), and H8(c) have been supported significantly in this study .

Table 8: Indirect Paths Analysis

Hypotheses	Indirect Relationships	Std. Beta	Std. Error	T Values	P Values	LLCI	ULCI	Decision
H8 (a)	HC-> KS-> IP	0.085	0.024	3.492	0.000	0.043	0.137	Supported
H8 (b)	ITC-> KS -> IP	0.068	0.021	3.278	0.001	0.031	0.113	Supported
H8 (c)	TL -> KS -> IP	0.047	0.021	2.270	0.023	0.011	0.093	Supported

Source: PLS data analysis

Discussion and conclusion

By constructing and experimentally validating the conceptual model proposed in this study, this research contributes to the literature on Human Capital, IT Capability, Transactional Leadership, Knowledge Sharing, and Innovation Performance. It's reassuring to see that the current findings are consistent with previous research. Human capital, for example, is positively related with knowledge sharing, according to this study. This outcome is consistent with the findings of (Budur et al., 2021; Rashid et al., 2020; Schultz, 1961; Chowdhury 2005, Emerson, 1976; Wang & Wang, 2017; Egbu;2004). HC is also favorably related with IP, which supports the findings of prior research in this area (Wang and Wang, 2017; Kianto et al., 2017; Brooking, 1996; Winne & Sels, 2010; Subramaniam and Youndt, 2005; Han and Li, 2015; Varadarajan, 2018). Furthermore, the findings of this study show that IT capability has an impact on KS. This relationship is in line with the prior studies conducted by Yusof (2010), Aulawi et al., (2008), Gupta & Govindarajan, (2000), Lee & Choi (2003) and Bousari and Hassanzadeh (2012). This study indicated ITC positively affects IP which is supported by Huang et al., (2009), Bartel et al., (2007), Terziovski (2010), Ghazali et al., (2014), Haque et al. (2016). Furthermore, the current study found a positive relationship between TL and KS, which is similar with (Analoui et al., 2013; Birasnav, 2014; Riaz and Khalili, 2014; Analoui et al., 2013; Masa'deh et al. 2016; Singh, 2008; Srivastava et al., 2006; Xue et al., 2010; Bock and Kim, 2002;

Bryant, 2003; Crawford, 2005; Rawung et al., 2015). The research also revealed that transactional leadership has a beneficial impact on innovation performance, as evidenced by (Vargas, 2015; Nemanich et al., 2007; Makri and Scandura, 2010; Trung et al., 2014; Hambrick and Mason, 1984). Moreover, the research finding support that KS positively associated with IP in Bangladeshi Telecommunication sectors which is consistent with studies conducted by (Wang and Wang, 2012; Zheng et al., 2017; Le and Lei, 2018b; Brachos et al., 2007). Finally, the findings of this paper have confirmed and expanded our understanding that knowledge sharing is a broad intervening mechanism through which HC, ITC, and TL can positively influence the innovation performance of Bangladesh's telecommunication sector, which is consistent with studies conducted by Kaewchur, et al. (2013); Li et al., (2019); and Baskoro et al (2017).

6. Limitations and Future Research Directions

Despite the fact that this work contributes to the body of knowledge, some possible limitations must be considered. To begin with, the study's limited sample of important employees, such as managers, working in a Bangladeshi telecom firm may be a drawback because the findings may be difficult to apply to other firms in different industries. Secondly, the limitation might be related to the types of leadership chosen to reflect the concept of leadership, as there are many more types of leadership beyond transactional leadership in the literature. Thirdly, the study focused on the impact of transactional leadership on a specific knowledge management process while overlooking other processes that may be important to firms. Fourthly, in addition to HC, ITC, and TL, there may be other variables that influence knowledge sharing and, as a result, innovation performance. Other factors may be important in understanding this association and should thus be considered. Fifth, the primary data gathering approach was a quantitative methodology, which may be viewed as a research constraint. In order to meet the study's objectives, more qualitative techniques should be used to obtain more accurate data and findings. Questionnaires and other self-reporting data collection procedures may cause response bias; as a result, more qualitative techniques should be used to obtain more accurate data and findings. Finally, because this research was carried out in Bangladesh, the results may be confined to that country's culture and working environment. Researchers can enhance the validity, reliability, and generalizability of future research findings by understanding the constraints of the current study. Future research should replicate our findings across a sample of diverse organizations in order to accurately reflect varied industries. It would also be informative if researchers measured the various constructs proposed in this study using other dimensions to see if the results were similar or different, as some of the relationships revealed in this study, or if they used multiple measurements of a single construct at the same time and compared the results. In addition to HC, ITC, and TL, future study on this link may evaluate other antecedents to have a better understanding. Other mediating elements can be uncovered to augment the explanation provided by the literature. To get data that correctly depicts the study's variables, researchers should use both quantitative and qualitative data collecting approaches. Future researchers should employ SEM as an analytical approach since it is thought to be the best at simplifying the construction of the study framework (Tseng and Lee, 2014). Researchers are urged to replicate and compare their findings across cultures and regions.

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