9-28-2021

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Liaquat Ali Rahoo
Ph.D Scholar, Department of Public Administration, University of Sindh, Jamshoro, Sindh Pakistan, liaquatalirahoo2003@gmail.com

Muhammad Memon
Institute of Business Administration, University of Sindh, Jamshoro, Pakistan, muhammad.memon@usindh.edu.pk

Sirajul Haq Kandhro
Department of Public Administration, University of Sindh, Jamshoro, Sindh Pakistan, sirajulhaq@usindh.edu.pk

Zareen Abbasi
Dean Faculty of Social Sciences, University of Sindh, Jamshoro, Pakistan, zareen.abbasi@usindh.edu.pk

Muhammad Ali Khan
Department of Industrial Engineering and Management, Mehran University of Engineering and Technology, Jamshoro, Pakistan, muhammad.nagar@faculty.muet.edu.pk

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Liaquat Ali Rahoo
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Muhammad Memon
muhammad.memon@usindh.edu.pk
Institute of Business Administration, University of Sindh, Jamshoro, Pakistan

Sirajul Haq Kandhro
sirajulhaq@usindh.edu.pk
Department of Public Administration, University of Sindh, Jamshoro, Sindh Pakistan

Zareen Abbasi
zareen.abbasi@usindh.edu.pk
Dean Faculty of Social Sciences, University of Sindh, Jamshoro, Pakistan

Muhammad Ali Khan
muhammad.nagar@faculty.muet.edu.pk
Department of Industrial Engineering and Management, Mehran University of Engineering and Technology, Jamshoro, Pakistan

Abstract
The aim of study is to examine the impact of knowledge sharing tools (i.e., technology and organization rewards) on knowledge transfer in the Higher Education Institutions (HEIS) of Sindh, Pakistan. The study utilized quantitative method. The population of the study was the employees who are working in HEIs of Sindh Province. The cluster random sampling technique was implemented to collect primary data from 750 respondents. The survey method was used in questionnaire to collect the data from employees of HEIs. The results of the research study indicate that knowledge sharing tools and organization rewards and technology have a significant impact on knowledge transfer. The results also confirm that motivation mediates the relationship among organization reward, technology, and knowledge transfer. Furthermore, the organization reward and technology along with motivation endorse the knowledge transfer to individuals and organizations. This study has sought the contribution in managerial and theoretical perspectives considering technology and organization reward as knowledge sharing tool effect on knowledge transfer with mediation analysis of motivation which improves the organization's effectiveness. The comparative study may be conducted in the future or in another region of the country.
Keywords: organization rewards, technology, knowledge sharing tool, knowledge transfer, motivation.

Introduction
Data and information are rife everywhere and their amount increases rapidly every year, and many companies are trying to build intelligent information systems for analysis and interpretation of the huge amount of data and information. In these times, knowledge and transfer of knowledge are key differentiators in terms of business competitiveness and all successful companies admit that their main objective is to focus on people, their knowledge and they strive to create, improve, transfer/ share, embed, and renew the knowledge. In other words, they focus on principles of knowledge management. Knowledge sharing is particularly

important because it is a necessary prerequisite for knowledge application. Nesheim and Gressgard (2014) tested in their research the hypothesis of significant relationship between knowledge sharing and knowledge application and they confirmed the positive relationship. Knowledge sharing supports knowledge application which means "use of knowledge to improve the quality of the work."

Knowledge sharing is the most essential and critical element of the knowledge management process. In the competitive era, knowledge must be shared because these organizations can be successful in the market that can update employee knowledge in the areas of their business (Asrar-ul-Haq & Anwar, 2016). The organization faces many problems due to globalization, digital revolution, and competition which force them for many challenges that initiate them to adopt an important strategy for creativity, innovation for performance continuity, and survival. (Aljawarneh, 2020). These strategies are based on the knowledge management system which works to discover the knowledge related environment of the organization. So different knowledge sharing tools are used for knowledge sharing with employees and organizations e.g. trust. Knowledge sharing is more likely to increase when they are focused and develop the trust to knowledge share with employees and organization to improve the organization effectiveness (Mian & Nasir, 2020). A prior research claims that it depends on the organization to place formal and informal knowledge sharing tools because it is difficult to distinguish the tools (Cho, zheng Li, & Su, 2007). Prior research empirical identifies that organization rewards have a significant influence on employees' behavior and organization (Ahmad, Danish, Ali, Ali, &Humayon, 2019; Javaid, Soroya, & Mahmood, 2020). So, application of knowledge management is also essential for universities for an academic point of view and for business aspect at knowledge-intensive organization. Technology is an important knowledge sharing tool for knowledge management which is helped in staff development, quality, and productivity of research, and creating a competitive edge of higher education ((Eftekharzade, Mohammadi, & 2011; Fernandes, 2018).According to the Delphi research group, universities at university level knowledge management is weaker, statistically proved that 42 % data saved in mind 25% in paper document 13% on the electronic system. When employees left the university, his knowledge was also lost along with his service. So, these conditions indicate that knowledge sharing is an important aspect of knowledge transfer for improvement at organizational effectiveness. This shows that knowledge sharing does not function properly. Therefore, this research tries to answer that tool which fosters employees to transfer the knowledge within the organization leading to improve the effectiveness. The originality of this paper identifies the impact of organization rewards and technology on motivation and its effect on knowledge transfer.

Literature Review

Rewards systems play an important role and provide assistance and encouragement to share their knowledge with individuals and organization (Bartol & Srivastava, 2002; Durmusoglu et al., 2014; Nguyen, Malik, & Management., 2020).Meanwhile, reward system consists of compensation, benefits, leanings, development, and the work environment(Supriyanto, 2018). Furthermore, workplace stimuli comprise of monetary and non – monetary incentives and rewards give motivation to employees to voluntarily transfer their knowledge (S. A. Raza et al., 2018).Therefore, the rewards system is a tool for making a baseline commitment towards the organization because employees must satisfy their financial needs for a good quality of life. They will be more productive and ready to transfer their knowledge to others (Bibi & Ali, 2017; Cruz, Pérez, & Cantero, 2009).

Information technology is playing an important role in inter-organizational knowledge transfer. It is necessary to spread the knowledge and make a learning environment to share

their knowledge (Durmusoglu et al., 2014; Goh, 2002). During the last era, technological change rapidly occurred and increasing extreme competition carried out by globalization which imposed the radical changes on the organization and their work system as well as on the approach of the entrepreneur that manage their business. All these changes have been determined the information communication technology that changed the technique of their market to identify new methods focusing how to deal with customers and streamline strategic approaches to maintain the competitiveness (Yiu & Law, 2016). Basically, knowledge transfer is the process to exchange the knowledge between knowledge recipients and knowledge provider. It is a different way of knowledge to boost the knowledge transfer (He & Wei, 2009; Yuan et al., 2017). Similarly, technology can promote the exposure to derive resources of knowledge and accelerate the knowledge transfer process (Sun, Wang, & Jeyaraj, 2020).

Knowledge is considered a strategic resource which is needed to be protected and to sustain competitive advantage (Islam, Jasimuddin, & Hasan, 2015). So, creating such an environment in which knowledge is accumulated can be shared with others at a low cost. Therefore, technology is a tool of knowledge sharing process and provides facilitation between individuals with various kinds of knowledge to enhance the organization ability to make innovate elsewhere what any single employee can accomplish (Cohen & Levinthal, 1990; Rafique, Hameed, & Agha, 2018). Moreover, knowledge management can be improved through knowledge sharing and transferring among individuals by using technology (Liao, Chen, Hu, Chung, & Yang, 2017). The use of technology allowed individuals or organizations to carry out various kinds of information accurately, timely, and in quality. It also helps the organization to empower the employees and make data, information, and data into knowledge available in the organization (Fernandes, 2018). Henceforth, the common motivation to acquaint with these technologies is that they may enable the individual employee by providing the tools to support and foster knowledge-sharing skills (I. Raza & Awang, 2020).

Knowledge sharing is the most crucial activity of the knowledge management and rewards system considered is one of another tools of knowledge sharing to encourage workers to best of their interest in their firms (Javaid et al., 2020). The rewards system encourages to get motivated to transfer knowledge within the organization. Different kinds of rewards motivate the employee and make them enable to generate and transfer knowledge. Moreover, it depends on the nature of the organization which shows what kind of rewards motive the employees. For competitive advantage and sustainability of firm, it is necessary to generate and transfer the knowledge (Hua, Cheng, Hou, Luo, 2020; Osterloh & Frey, 2000). Similarly, rewards, team work, and compensation system with human resources (HR) practices encourage the employees to focus on the organizational goal (Collins Smith, 2006; Shao & Ariss, 2020). Moreover, the achievement of knowledge transfer in any organization is relied upon employee**'**s motivation (Feet & Næss, 2015). Employee motivation improves the personal attitude and willingness to share acceptance and courage to apply the transferred knowledge in the working environment (Wang & Hou, 2015; Zhang, De Pablos, & Xu, 2014). Meanwhile, knowledge transfer related to two theories which is namely social exchange theory and economic exchange theory (Alhalhouli, Hassan, & Der, 2014; Feet & Næss, 2015). So, it is necessary to address and apply the motivational factors to motivate the knowledge sources and involve the recipients in knowledge transfer which mainly improves the organization effectiveness (Moronfolu & Adewunmi, 2017). After literature review following hypothesis has been developed.

Research Hypothesis

- H1: Organizational reward is positively related to knowledge transfer.
- H2: Technology is positively related to knowledge transfer.
- H3: Motivation is playing mediating role between technology and knowledge transfer.

Research Methodology

The study was conducted through quantitative method. The population of the study was employees who are working at HEIs of Sindh province. The cluster random sampling technique was used to collect primary data from 750 respondents. The survey method was used through a questionnaire to collect the data from employees. The questionnaire was adopted from a prior research work to ensure the internal validity and consistency of the instrument. This research used (Ridder & Aukeme, 2004) 5 point Likert scale which ranges from 1 to 5; strongly disagree to strongly agree. Gender, age, and experience of the teachers are used as control variables in this research. This study adopted 4 items of technology (Issa & Haddad, 2008). Two items of motivation were adapted from (Gould-Williams & Davies, 2005). Five items of knowledge transfer adopted from Victor (Martin-Perez & Martin-Cruz, 2015).

Result and Discussion

Table 1: Reliability and validity

Construct	Items	Loading Items	Cronbach Alpha	Average Variance Extracted
Organizational Reward	OR1	0.927	0.961	0.946
	OR2	0.95		
	OR3	0.95		
	OR4	0.957		
Technology	TEC1	0.881	0.946	0.927
	Tec2	0.94		
	Tec3	0.949		
	Tec4	0.94		
Motivation	M1	0.925	0.83	0.925
	M2	0.925		
Knowledge transfer	Kt1	0.702	.87.8	0.819
	Kt2	0.882		
	Kt3	0.894		
	KT4	0.875		
	Kt5	0.746		

Table 1 represents the results of reliability and validity of item which is used in empirical model. Moreover, Cronbach Alpha test is used to check the internal consistency of the data which is meeting the minimum criteria valued at 0.70. Table 1 used the loading value which should be significant and not more than 0.60. So, loading value is used to assess the value of average variance extraction (AVE). Therefore, table 1 shows the value of Cronbach Alpha and loading item which represents the measurement of model establishment and validity and reliability of the construct.

Table 2: Structural Equation Model

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi 2$/df	4.71	**$\leq 2^a$; $\leq 5^b$**
GFI	0.836	**$\geq 0.90^a$; $\geq 0.80^b$**
RMSEA	0.079	$< 0.08^a$; $< 0.10^b$
Incremental Fit Measures		
NFI normed fit indexed	0.867	**$\geq 0.90^a$**
AGFI adjusted good fit	0.891	**$\geq 0.90^a$; $\geq 0.80^b$**
CFI	0.873	**$\geq 0.90^a$**
Parsimonious Fit Measures		
PGFI	0.546	The higher value is the better value of PGFI
PNFI	0.645	The higher value is the better value of PNFI

The results of structural equation model (SEM) indicate in table 02. The standardized path coefficient of structural coefficient represents the relationship among hypothesized variables.

The results highlight the direct relation of organizational rewards and knowledge transfer is **positive β, and statistical significant p< thus support hypothesis** 1. Secondly results in support **hypothesis H2, technology is positive β, and statistically significantly p<0.001 related to the** knowledge transfer.

Similarly, the results of hypothesis 3 and 4 have a positive relationship among construct.

Table 3: Inter-Correlation among construct

Variables	Beta estimates	SE	CR	p	Result
Knwtra….orewrd	0.444	0.38	11.602	0	significant
Knwtra…..tec	0.307	0.042	7.248	0	significant

Table 4: Direct effect of Reward and Technology on knowledge Transfer

Variables	Organizational Rewards	Technology	Motivation	Knowledge Transfer
Organizational rewards	0.972			
Technology	0.812	0.962		
Motivation	0.714	0.638	0.961	
Knowledge transfer	0.81	0.729	0.825	0.904

Table 3 represents the inter-correlation among construction, Table 4 represents the direct significant effect of organizational rewards and technology on knowledge transfer that means if organization establishes rewards system and used updated technology that may help the employee to perform well at organization level and easily share their knowledge with others.

Table 5: Mediation Effect of Motivation

Variables	Beta Estimates	SE	CR	P
Moti <-- tech	0.286	0.055	5.209	***
moti<-- orewrd	0.44	0.046	9.537	***
Knwtra<-- orewrd	0.159	0.03	5.29	***
Knwtra<-- techno	0.094	0.032	2.9	0.004
Knwtra<-- Moti	0.606	0.046	13.225	***

Table 5 unfolds the motivation as the mediator between organization rewards and knowledge transfer, technology, and knowledge transfer. The results of this table represent that motivation fully mediates with technology and partially mediates with organization rewards. However, organization rewards provide motivation to the employee to share their knowledge with an organization which may enhance the productivity of the organization. This study has similar result with (Fernandes, 2018).

Implication and Delimitation

This empirical study represents the implication of research for both the theoretical and managerial level to develop the literature of the effect of organizational rewards and technology on knowledge transfer and mediating analysis of the motivation. Meanwhile, managerial implication derives from empirical results of the study which confirm that organizational rewards and technology which is knowledge sharing tools enhance the motivation level of employees to share the knowledge within the organization. Therefore, future research may be conducted by using the comparative study in another region of Pakistan. Moreover, future research may also be focusing the use of knowledge sharing tool to measure the factors of an organization's effectiveness**.**

Conclusion

This study work examined the effect of knowledge sharing tools on knowledge transfer with mediating role of motivation among employees of HEIs. The study notes out that organization reward and technology have a positive and significant role in creating impact on knowledge transfer. This research study's contribution in literature is that tools of knowledge sharing motivate the employees to share and invest in the knowledge with their employees and organization for organization effectiveness. Meanwhile, organization rewards encourage the employees to share their knowledge for the improvement of the organization. The study reveals that technology is a source that helps organizations to exchange their information outside the organization and empowers the human resource to carry different activities. Furthermore, the organization reward system is a strategic tool that enhances the performance of the employees at grouped-base and/or individual-base. Henceforth, this research represents that technology and organization reward as knowledge sharing tool which motivate the

employees to share their knowledge with their colleagues and within their esteemed organization.

References

Ahmad, I., Danish, R. Q., Ali, S. A., Ali, H. F., & Humayon, A. A. (2019). A comparative study of banking industry based on appraisal system, rewards and employee performance. *SEISENSE Journal of Management, 2*(1), 1-11.

Alhalhouli, Z. T., Hassan, Z., & Der, C. S. (2014). Factors affecting knowledge sharing behavior among stakeholders in Jordanian hospitals using social networks. *International Journal of Computer and Information Technology, 3*(5), 919-928.

Asrar-ul-Haq, M., & Anwar, S. (2016). A systematic review of knowledge management and knowledge sharing: Trends, issues, and challenges. *Cogent Business & Management, 3*(1), 1127744.

Bartol, K. M., & Srivastava, A. (2002). Encouraging knowledge sharing: The role of organizational reward systems. *Journal of leadership & organizational studies, 9*(1), 64-76.

Bibi, S., & Ali, A. (2017). Knowledge sharing behavior of academics in higher education. *Journal of Applied Research in Higher Education*.

Cho, N., zheng Li, G., & Su, C.-J. (2007). An empirical study on the effect of individual factors on knowledge sharing by knowledge type. *Journal of Global Business & Technology, 3*(2).

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, 128-152.

Collins, C. J., & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of management journal, 49*(3), 544-560.

Cruz, N. M., Pérez, V. M., & Cantero, C. T. (2009). The influence of employee motivat ion on knowledge transfer. *Journal of Knowledge Management.*

Durmusoglu, S., Jacobs, M., Nayir, D. Z., Khilji, S., Wang, X., & gained., T. q.-m. r. o. o. c. i. t. r. b. r. a. k. s. a. (2014). The quasi-moderating role of organizational culture in the relationship between rewards and knowledge shared and gained. *Journal of Knowledge Management.*

Eftekharzade, S. F., Mohammadi, B., & (2011). The presentation of a suitable model for creating knowledge management in educational institutes (higher education). *Procedia-Social and Behavioral Sciences, 29*(12), 1001-1011.

Feet, V., & Næss, A. F. (2015). *A Qualitative Study of Improvement and Knowledge Transfer in Norwegian Public Hospitals.* NTNU,

Fernandes, A. A. R. (2018). The effect of organization culture and technology on motivation, knowledge asset and knowledge management. *International journal of Law and Management*.

Goh, S. C. (2002). Managing effective knowledge transfer: an integrative framework and some practice implications. *Journal of knowledge management.*

Gould-Williams, J., & Davies, F. (2005). Using social exchange theory to predict the effects of HRM practice on employee outcomes: An analysis of public sector workers. *Public management review, 7*(1), 1-24.

He, W., & Wei, K. K. (2009). What drives continued knowledge sharing? An investigation of knowledge-contribution and-seeking beliefs. *Decision support systems, 46*(4), 826-838.

Hua, Y., Cheng, X., Hou, T., & Luo, R. (2020). Monetary rewards, intrinsic motivators, and work engagement in the IT-enabled sharing economy: A mixed-methods investigation of Internet taxi drivers. *Decision Sciences, 51*(3), 755-785.

Islam, M. Z., Jasimuddin, S. M., & Hasan, I. (2015). Organizational culture, structure, technology infrastructure and knowledge sharing. *Vine*.

Issa, R. R., & Haddad, J. (2008). Perceptions of the impacts of organizational culture and information technology on knowledge sharing in construction. *Construction Innovation*.

Javaid, J., Soroya, S., & Mahmood, K. (2020). Impact of personal and organizational factors on knowledge sharing attitude of university teachers in Pakistan. *The Electronic Library*.

Liao, S.-H., Chen, C.-C., Hu, D.-C., Chung, Y.-c., & Yang, M.-J. (2017). Developing a sustainable competitive advantage: absorptive capacity, knowledge transfer and organizational learning. *The Journal of Technology Transfer, 42*(6), 1431-1450.

Lin, H. F. (2007). Knowledge sharing and firm innovation capability: an empirical study. *International Journal of manpower*.

Martin-Perez, V., & Martin-Cruz, N. (2015). The mediating role of affective commitment in the rewards–knowledge transfer relation. *Journal of Knowledge Management* .

Mian, R., & Nasir, N. (2020). KNOWLEDGE SHARING TOOLS IN HIGHER EDUCATION SECTOR OF PAKISTAN: THE ROLE OF JOB SATISFACTION AND ORGANIZATIONAL COMMITMENT AS MEDIATOR. *International Journal of Management Research and Emerging Sciences*.

Moronfolu, R., & Adewunmi, C. (2017). Influence of leadership and rewards system on team performance in Nigeria premier league (NPL). *European Journal of Physical Education and Sport Science*.

Nguyen, T. M., Malik, A., & Management., J. o. K. (2020). Cognitive processes, rewards and online knowledge sharing behaviour: the moderating effect of organisational innovation. *Journal of Knowledge Management*.

Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transfer, and organizational forms. *Organization science, 11*(5), 538-550.

Rafique, M., Hameed, S., & Agha, M. H. (2018). Impact of knowledge sharing, learning adaptability and organizational commitment on absorptive capacity in pharmaceutical firms based in Pakistan. *Journal of Knowledge Management* .

Raza, I., & Awang, Z. (2020). Knowledge-sharing practices in higher educational institutes of Islamabad, Pakistan: an empirical study based on theory of planned behavior. *Journal of Applied Research in Higher Education*.

Raza, S. A., Abidi, M., Arsalan, G. M., Shairf, A., Qureshi, M. A., & (2018). The impact of student attitude, trust, subjective norms, motivation and rewards on knowledge sharing attitudes among university students. International Journal of Knowledge and Learning. *12*(4), 287-304.

Ridder, H. B., & Aukeme, E. (2004). Exploring the eagerness to share knowledge: the role of social capital and ICT in knowledge sharing in social capital and information technology, edited by M. *Huysman and V. Wulf*.

Shao, J. J., & Ariss, A. A. (2020). Knowledge transfer between self-initiated expatriates and their organizations: Research propositions for managing SIEs. *International Business Review, 29*(1), 101634.

Sun, Y., Wang, C., & Jeyaraj, A. (2020). Enterprise social media affordances as enablers of knowledge transfer and creative performance: An empirical study. *Telematics and Informatics, 51*.

Supriyanto, S. (2018). Compensation effects on job satisfaction and performance. *Human Systems Management, 37*(3), 281-285.

Wang, W.-T., & Hou, Y.-P. (2015). Motivations of employees' knowledge sharing behaviors: A self-determination perspective. *Information and Organization, 25*(1), 1-26.

Yiu, M., & Law, R. (2016). Technological impacts on knowledge sharing: a case study of three travel agencies in Hong Kong. *ourism Recreation Research, 411*(1), 2-15.

Yuan, Y. H., Tsai, S. B., Dai, C. Y., Chen, H. M., Chen, W. F., Wu, C. H., & Wang, J. (2017). An empirical research on relationships between subjective judgement, technology acceptance tendency and knowledge transfer. *PloS one, 12*(9).

Zhang, X., De Pablos, P. O., & Xu, Q. (2014). Culture effects on the knowledge sharing in multi-national virtual classes: A mixed method. *Computers in Human behavior, 31*, 491-498.