

IMPACT OF INFORMATION TECHNOLOGY ON KNOWLEDGE SHARING AMONG FACULTY MEMBERS OF PUBLIC SECTORS HIGHER EDUCATION INSTITUTIONS OF SINDH, PAKISTAN

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ABSTRACT

In this information and knowledge age, academics must come out from the back of the screen to the center stage of the organization. Institutional success depends on knowledge sharing (KS). Institutional success depends on knowledge sharing (KS). However, knowledge exchange within businesses would significantly impact their effectiveness as it encourages individuals to address internal issues. There have been few types of research done in the Pakistani environment to determine the impact of information technology on KS among academic professionals. Purpose--The purpose of this study is to explore the impact of information technology on knowledge sharing among faculty members of public sector higher education intuitions in Sindh province of Pakistan. Methodology: This is a quantitative study in which the authors employed a survey questionnaire to collect cross-sectional data from the faculty members of public sector higher education institutes (HEIs) of Sindh. Structural Equation Modeling (AMOS) was used to examine 335 valid questionnaires. The questions were composed of four key factors, including KS, management support, information technology infrastructure, and information technology skills as independent variables. Findings: The structural equation model (SEM) analysis shows there is a positive and significant impact of information technology infrastructure, management support, and information technology skills on knowledge sharing. Originality/value: This research's findings offer the original contribution of information technology and knowledge sharing among faculty members of higher education institutes in developing countries.

Keywords: information technology, infrastructure, management support, skills, knowledge sharing, faculty members.

INTRODUCTION

Sharing of knowledge (KS) is crucial for businesses to succeed. KS within organizations would have a significant impact on their performance since it encourages people to confront problems and concerns within the organization (AlShamsi, et al 2018). Information sharing among employees of a company is a sign of effective knowledge management. Understanding the factors that influence staff to engage in KS activities in an organization is a crucial component of knowledge management. (Alaaraj, S et al, 2018). The education institution, like other institutions, should be the ideal place for information sharing. In an academic setting, where academics serve as staff, information sharing is expected to take place through teaching and learning. When academic staff members are prepared and willing to share what they know, KS can rely on them.

The study will also examine three variables that affect knowledge sharing (KS) among academic staff, including attitude (ATT), subjective norm (SN), and information and communication technology (ICT) (ICT). Numerous researchers have defined attitude as the "cognitive views" of the

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employee regarding the consequences of engaging in the behavior, whereas the subjective norm is formed by "normative views" regarding the likelihood that the strength of the referents will encourage or discourage the particular behavior. In Pakistan, higher education institutions are facing several challenges in emerging technologies because it is becoming increasingly global. This study aims to examine the impact of information technology on knowledge sharing among faculty members of higher education institutes in the Sindh province of Pakistan.

REVIEW OF LITERATURE

The process of distributing knowledge among all those involved in development endeavors can be referred to as knowledge sharing (Lin & Lee, 2005). Tsai (2002) defines knowledge sharing (KS) as the transfer of knowledge, technology, and expertise among an organization's departments, divisions, and subdivisions.

Information managed by people, including individual, team, and organizational results thoughts, facts, and decisions are referred to as knowledge (Wang, 2010). Sharing of knowledge occurs among people who are part of a group. As long as the participants are connected to formal organizations or partners, the group might be formal or informal. These organizations primarily seek to apply knowledge to improve the effectiveness and service of organizations (Javadpour, 2017). However, KS can be characterized as a social interactional culture that encourages the sharing of information, emotions, and skills between people in different parts of the division or organization (Abd-Muttalib, & Zuriana, 2017). In the meanwhile, the goal of KS is to exchange expertise in certain subjects, ranging from fundamental understanding to specialist understanding (Zhu, 2012). KS sees this as crucial since it can demonstrate the organization's positive public image. Therefore, it is anticipated that there may be insufficient voluntary sharing. The adoption of KM techniques by an organization's workforce has a significant impact on its success (Alaarj, 2012). Exchange among staff members is important for knowledge sharing, and action learning and information preservation promote private mastery (Mafabi, 2017). However, KS refers to human operations where individuals are prepared to KS with others in an organization to resolve problems, generate new ideas, or put plans or processes into place (Wang, 2017).

Management support is very effective for knowledge sharing reported in previous studies. Within corporate units, there is innovation and sharing (Van de Ven, 1986; Pan Vera, & Crossan 2004; Scarbrough, 1998). Therefore, managers could continually encourage employee knowledge-sharing while simultaneously providing the required assistance. In this regard, Hambrick, and Mason (1984), Strategic leadership theorists have underlined the importance of making the impact of top management decisions on the performance of the organization. Eventually, the decisions that are made will affect what happens to the business units and organization (Hambrick, 1989; Han et al., 2019; Hambrick, 1989; Han et al., 2019). Therefore built on the past based on the research's findings.

ICT abilities are referred to differently in various texts. This factor is referred to as ICT skills by Quadri (2012) and as IT competency by Susana et al., (2009). Similar to Noor and Salim, Zawiyah and Mohd (2009) refer to it as ICT know-how (2011). Although ICT skills are employed in this study, ICT know-how and ICT competency are implied and will be used interchangeably. According to Susana et al., (2009), the IT revolution has made it easier to search for information and share it with others, but it has also contributed significantly to the growth of information. According to Quadri (2012), ICT proficiency is a requirement for knowledge sharing, and adequate ICT proficiency is necessary for the successful application of knowledge in state corporations.

Research Framework

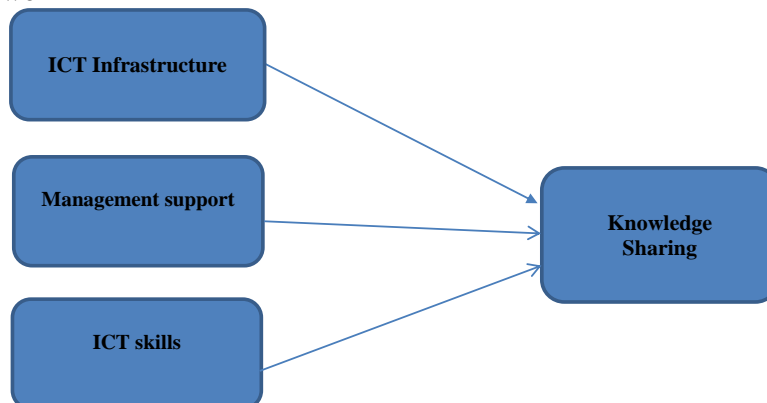


Figure 1: Research Framework

Hypothesis Development

1. Information Technology Infrastructure has a significant impact on KS among faculty members in the public sector
2. Management Support has a significant impact on KS among faculty members in the public sector
3. Information Technology Skills have a significant impact on KS among faculty members in the public sector

RESEARCH METHODOLOGY

This study was conducted to observe the impact of information technology on knowledge sharing among faculty members of public sectors. In this study quantitative survey method was used to collect the data from the respondents through the questionnaire instrument. The questionnaire was divided into two main parts, part demographic information and second part questions with a Likert scale of Five point1 = strongly agree and 5 = strongly disagree. The population of the study was public sector higher education institutes of Sindh province. Sample size 550 questionnaires were distributed, 370 questionnaires were received back from the respondents and 335 were used for final assessment. Data analysis was done through Statistical Package for Social Sciences (SPSS) version 23 to find descriptive statistics and AMOS version 23 was used to measure the model, model validates model fit, and hypothesis testing was done.

RESULTS AND DISCUSSION

a. Demographic Descriptive

The findings in this section begin with the demographic details shown in Table 1. Male respondents made up 64.8% of the sample, while female respondents made up 35%. The age range of 25 to 35 years made up 49.9%, 36 to 45 years made up 39.7%, 46 to 55 years made up 8.7%, and 56 & above years 1.8% are a participant. According to the qualifications section, the majority of responders (49%) have a master's degree in 18 years, while (32.2%) have doctoral degrees. 14% percent of the respondents have a bachelor's degree, and only 3.6% of responders have a post-doctorate degree in the qualification. According to the designation majority of respondents (43%) are lecturers, while (23.2%) are assistant professors, 21.2% are demonstrators, while (5.1%) are professors, 4.2% are teaching assistants, a very low ratio of 3.3% of associate professor were participate in this study.

Table No. 1 Distribution of socio-demographic data of the respondents.

	Variables	Frequency	Percentage
Gender	Male	217	64.8
	Female	118	35.2
Age	25 to 35 years	167	49.9
	36 to 45 years	133	39.7
	46 to 55 years	29	8.7
	56 & above	6	1.8
Qualification	Master (16 years)	50	14.9
	MS/M.Phil.	165	49.3
	PhD	108	32.2
	Post Doctorate	12	3.6
Academic Position	Teaching Assistant	14	4.2
	Demonstrator	71	21.2
	Lecturer	144	43
	Assistant Professor	78	23.2
	Associate Professor	11	3.3
	Professor	17	5.1

b. Construct Reliability

The dependability of internal consistency was assessed to confirm unidimensionality using Cronbach's alpha and item-total correlations. The resultant alpha ranged from 0.826 to 0.906, exceeding (Nunnally, 1994) the proper limit (0.70). Table 2 shows all reliability findings, however, all item-total correlations are higher than the 0.4 thresholds set by (Spector, 1992).

c. Construct validity

Confirmatory factor analysis (CFA) was employed with the AMOS program to check the convergent validity of each variable. Convergent validity was evaluated using several metrics to evaluate the same

concept, including factor loading of each variable, composite reliability (CR), and average variance extracted (AVE) (Hair, J. F, 2009).

The results showed factor loadings that were higher than the advised 0.5 (Bryne, B, 2010). and ranged between.612 (KS1) to.878 (ICT2).

However, the composite dependability of all variables exceeds the minimum level of 0.7 suggested by (Hair, J. F., and Black, 2009). AVE higher than the 0.5 minimum allowed the limit (Hair, J. F., Black, 2009). Convergent construct validity results are described in Table 2.

Table No. 2 Cronbach's Alpha, Item-total correlation, Factor loading Composite reliability, and AVE

Construct	Items	Cronbach's Alpha	Item-total Correlation	Factor Loading	Composite reliability	AVE
KS	KS1	.835	.545	.613	.831	0.536
	KS2		.626	.791		
	KS3		.750	.866		
	KS4		.498	.677		
	KS5		.734	.821		
	KS6		.712	.847		
	KS7		.697	.811		
	KS8		.735	.789		
	KS9		.687	.834		
ITF	ITF1	.889	.695	.834	0.52	0.642
	ITF2		.715	.845		
	ITF3		.694	.831		
	ITF4		.462	.677		
	ITF5		.688	.824		
	ITF6		.721	.842		
	ITF7		.762	.857		
MS	MS1	.821	.653	.807	0.833	0.627
	MS2		.770	.878		
	MS3		.455	.674		
	MS4		.674	.811		
ITS	ITS1	.904	.769	.876	0.864	0.710
	ITS2		.654	.809		
	ITS3		.721	.851		
	ITS4		.692	.832		

d. Model fit

According to absolute fit measurements, all of the model fit requirements were found to be acceptable in this investigation, with RAMSE =.057, CFI =.968, and NNFI = 962 indicating a good model fit (Hu, L. T., 1999). The fit model satisfies the acceptability criterion if the GFI rate is greater than 0.90 and the RMSEA value is less than 0.06. Table 3 shows that various goodness-of-fit requirements have been met to the necessary levels.

Table No. 3 Goodness of fit result

Fit Index	Recommended Criteria	Authors	Results
X ² /df	≤5	[31]	1.547
RMSEA	< .08	[17]	.057
NNFI (TLI)	≥.90	[31]	.962
AGFI	≥.80	[31]	.871
CFI	≥.90	[22]	.968
GFI	≥.90	[34]	.906
NFI	≥.90	[22]	.903

e. Path analysis

To test the three study hypotheses, we created an (SEM). The specified cutoff values for a fit model are met by each of the fit indicators (see Figure 1 and table 3) according to (Hair, et al., 2009). The regression weights from the model testing the hypotheses are displayed in Table 4 below. The hypothesis from the literature review that the research factors had an impact was tested using the regression weights.

Table No. 4 Regression weights of the structural model

H	DV	IV	Estimate	S.E	C.R	P	Label
H1	KS ←	ITF	.51	.089	5.72	.02	Significant
H2	KS ←	MS	.17	.072	2.07	.03	Significant
H3	KS ←	ITS	.17	.76	1.99	.04	Significant

The initial predictions projected that the infrastructure of information technology would have a big impact. Knowledge sharing is significantly impacted by the information technology infrastructure, as expected ($= 0.51, P=0.02$). H1 is therefore approved. The same outcome has been reported (Teng, J. T, 2012 and Fauzi, M. A, 2019). The significance of managerial support is the second supposition. The effect is substantial ($= 0.17, P=0.03$) as anticipated. H2 is therefore approved. The same outcome was reported by Fauzi (M. A.), 2019, who found that management support had a substantial impact on knowledge sharing. Research also anticipated that information technology skills would have a considerable impact on academic staff members' ability to share knowledge. The conclusion was supported by the data ($= 0.17, P=0.04$). H3 is therefore approved. Similar findings were obtained in Siddiqui and Hafeez's 2019 study, which found that information technology skills had a substantial impact on knowledge sharing.

DISCUSSION

Information Technology Infrastructure

In the academic world, information technology infrastructure significantly affects knowledge sharing. Academics would feel humbled if they didn't impart their expertise, whereas others anticipate it. These people include university administrators, faculty members, students, society, and other interested parties. Expectations are high since professors are doing a good job unless there is another issue that prevents academics from exchanging ideas. Other studies have demonstrated the significance of the academic community's information technology infrastructure toward knowledge sharing (M. Jawad Iqbal, 2011). Social support from peers, agencies and the organization's management plays a crucial role in encouraging staff members' interest in or readiness for knowledge sharing. A person who accepts a referent group's understanding of knowledge sharing seems to want to spread knowledge.

Management Support

Every stage of the knowledge-sharing strategy's implementation calls for managerial support. If management support is lacking, employees get demotivated and lack the zeal to share information openly. The favorable view of knowledge sharing among academics will be advantageous to many. The way they feel about knowledge sharing will strongly influence how they communicate what they know and the academic experience they have gained. A belief in how people should or should not act in particular situations is known as an attitude, which takes the form of personal cognitive convictions (Sana Arz, 2019).

Information Technology Skills

In this research Information technology skills significantly and favorably have an impact on knowledge sharing among faculty members. Similar results were found by this author (Siddiqui, Hafeez, 2019). Information technology skills can improve academic staff members' access to knowledge and remove geographical and temporal constraints. Information technology skills ability to disseminate knowledge throughout many university systems can aid in greater comprehension of the complex university landscape (Wu, Y, 2009). The approach used, such as a customizing strategy or a codification strategy. However, the development of networked computers has made it easier and less expensive than ever before to codify, save, and share specific knowledge.

CONCLUSION

University researchers need to be of the highest caliber. High-performing academics must also be able to communicate and impart their knowledge to others to function in the higher education society. Academics that feel comfortable imparting their knowledge without concealing any from self-interest are essential to higher education as a whole. The findings of this study demonstrate that all of the research's hypotheses including those regarding information technology infrastructure, management support, and information technology skills toward academics are significant. Theoretically, this study has various implications. In-depth factors for faculty members' knowledge sharing are included in the research, which is categorized into information technology, management support, and information technology skills. All of these elements aid in understanding the causes of and challenges facing knowledge sharing in the Sindh province of Pakistan higher education. The entire variable considered

in this study has a considerable impact on knowledge sharing among academic professionals. Interdisciplinary research has only recently begun in the Sindh province of Pakistan, and academics have not fully applied it to other subjects. The theoretical contribution of this study also has implications for how important it is for the university to understand the knowledge-sharing model with information technology applications. To facilitate the information technology infrastructure at the universities for a better way to share knowledge among faculty members and encourage them to share their knowledge, universities should promote academics and create new climates and norms. The current study has several limitations that should be acknowledged. The results of this study cannot be applied to other types of universities because only samples from public sector universities were used. Data collection was restricted to public sector universities in the Sindh province of Pakistan. As a result, the findings of this study cannot be verified if we wanted to examine the same industry in other countries with different national cultures.

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