

The Factors that Influence Knowledge Sharing in Educational Institutions: An Empirical Study Using PLS-SEM Approach

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Abstract—The objective of the study is to identify the elements which have impact on sharing of knowledge at Cihan University in Erbil. Although previous studies have identified a range of elements affecting knowledge sharing, further research is needed to understand the factors driving knowledge sharing, particularly among higher educational institutions in Iraq. Since there are few studies about the sharing of knowledge among Iraqi higher education institutions' staff and there is no current model that has all of the elements required to examine the sharing of knowledge, the researchers investigated the effects of organizational, individual, and technological variables on academics' knowledge sharing behavior. Cihan University staff in Iraq's Kurdistan Region completed a total of 78 validated questionnaires. The data were evaluated with the use of a structural equation model (PLS-SEM). According to the findings of the study, organizational and technological factors are important indicators of knowledge sharing in educational institutions.

Keywords—Educational Institutions, Knowledge Sharing, PLS-SEM.

I. INTRODUCTION

Nowadays, the concept of knowledge has been raised to be used for information enhancement. Thus, the evaluation method of knowledge has improved. However, Lin (2007) stated that knowledge is one of the strategic sources, so organizations that want to execute and achieve a high level of performance while remaining competitive must pay more attention to their strategic resources (Al-Delawi, 2019; Raewf and Thabit, 2015). Furthermore, knowledge has emerged as one of the primary capabilities of organizational performance (Elogie, 2010; Alam et al., 2009).

According to Zahari, information is a valuable asset that can be used to gain a competitive advantage (Zahari et al., 2014), and it is necessary for both public and private sectors semi-permanent entities (Thabit and Jasim, 2016). Understanding information means that it can be used to make a lot easier with precise results. In addition, people's observations, understandings, and valuable abilities

are essential tools that permit individuals to figure out intelligence (Omotayo, 2015). Moreover, the financial world has shifted from labor to supporting information (Ngah and Patriarch, 2010).

In the meantime, when information is distributed and embedded in persons, facilities, or procedures, if knowledge cannot be adequately communicated within the organization, it is not easy to control the activities which are related to knowledge. Without an active knowledge-sharing operation, the expertise accumulated and distributed by the organization's individuals will be less likely to be passed to an organization. Collected information in an institute, company, or organization has no use unless shared and exchanged with the staff who need to know about that information (Raewf and Mahmood, 2021) (Thabit and Jasim, 2017).

Consequently, researchers reviewed the literature to develop a framework, as well as to determine the factors affecting the procedure of sharing knowledge among the staff

of Cihan University. Cihan University is one of the leading private universities in the Kurdistan Region of Iraq, founded in 2007 and headquartered in Erbil.

II. LITERATURE REVIEW

A. Knowledge

Knowledge is defined as the perception of information based on comprehension (Ahmad et al., 2021). It generally focuses on comprehending, thinking, and answering a question appropriately. Documents and people's thoughts both contain knowledge, as do their attitudes and behaviors. In the human mind, knowledge is undetectable. Despite this, knowledge may be recorded. Overt knowledge and implicit knowledge have been defined in the literature. Implicit knowledge is subconsciously acquired knowledge that is transferable through observation and application and is based on behavioral patterns earned through preparation and work experience (Jain et al., 2007).

B. Knowledge Sharing

Due to the powerful presence of many different viewpoints, such as information interaction, knowledge market perspective, learning perspective, and communication perspective, there is no complete consensus among researchers on the meaning of the idea of knowledge sharing. It is described as transmitting or distributing personal knowledge within an organization. In addition, by engaging and sharing that knowledge, new knowledge will be created (Krok, 2013), (Al-Delawi and Ramo, 2020).

In this regard, it was stated by Grunfelder and Hartner (2013) that there are two distinct methods of moving knowledge through organizations; passing knowledge between entities; and transferring knowledge through written documents.

An analysis of the literature revealed that there is no clear conception of the principle of knowledge sharing. Based on the scholarly field of researchers, knowledge sharing has been described in a different way. According to Zahari et al. (2014), academics or scholars view knowledge sharing from various viewpoints, including knowledge sharing, education, the knowledge market, and networking.

Lin also described knowledge sharing as a social networking culture that includes exchanging ideas, experiences, and competencies through departments and organizations as a whole. Employees' willingness to successfully cooperate, share information, and actively engage peers to learn from it are all instances of knowledge sharing, according to Lin. At the individual and organizational levels, methods for sharing knowledge are also provided: It is addressed to peers with particular employees to help them do something different, more accessible, or more efficiently, while at the organizational level, the sharing of knowledge gathers, organizes, re-uses, and shares experience-based expertise that exists within the enterprise and renders the knowledge available to others in the company (Lin, 2007).

Intending to build a culture of sharing knowledge, companies have to enable their workforce to do their duties

together more efficiently and work together and share more efficient organizational knowledge so that their tasks can be better achieved (Jain et al., 2007), (Al-Delawi, 2015). As per Gaal et al. (2015), better sharing of knowledge between individuals has turned out to be a strategic imperative for organizations. As a result, implementing knowledge sharing among employees will help the company achieve its business objectives. To modulate previous studies, only a handful of them have discussed the sharing of knowledge from the perspective of human contact within an organization, and further effort should be made to focus on this (Cheng et al., 2009). This study, on the other hand, answers to the demand for a more comprehensive understanding of knowledge sharing from the standpoint of engagement and makes itself helpful by evaluating the impact of some variables on the sharing of knowledge in organizations.

C. Sharing of Knowledge with Academics

Knowledge management systems were originally deployed in profit-driven companies, as Cheng et al. (2009) indicate, and therefore knowledge management and knowledge sharing analysis is mostly centered on business organizations. Knowledge management approaches have lately been applied to educational institutes and other information-based businesses, making knowledge sharing a common topic in academic institutions. Academics also teach, do research, and provide advice (Jolaei et al., 2014).

Academics must share knowledge to increase the quality and quantity of individual knowledge, produce more knowledge, and enhance the university's overall success. Sharing knowledge is vital in an academic setting, especially in universities, where all workers often engage with knowledge (Trehan and Kushwaha, 2012).

According to some scholars, there is a comparatively poor desire or ability to share knowledge in educational institutions compared to profit-oriented organizations to achieve shared goals (Kong, 1999). Cheng (2009) recognized that it is more common in academic institutions to share documented information, rather than intelligence sharing. Sharing of knowledge between academics is thought to be restricted to distinct fields or clustered among people from comparable specialties within academia (Harjan et al., 2016). For example, university biologists will share their expertise with their colleagues in the same department and share their experiences with researchers from other natural science departments, such as chemistry, physics, or the medical faculty.

D. Factors Influencing Knowledge Sharing

As noticed beforehand, a variety of social and behavioral theories are employed to characterize the elements that impact knowledge sharing in different organizational contexts. Two behavioral models used to investigate intelligence exchange are Fishbein and Ajzen's Theory of Reasoned Action (TRA) and the new version of the Behavior Theory of Planned Behavior (TPB) (Jolaei et al., 2014; Krok, 2013; Jameel and Ahmad, 2020). Specific views and behaviors, according to TRA, describe the bulk of human behavior (Lin, 2007).

According to TRA theory, individuals are moral and their actions are influenced by three factors (behavioral attitudes, societal expectations, and behavioral intents) (Jolaei et al., 2014). Action is accompanied by a deliberate intention to do something, which is influenced by a person's predisposition for that activity, cultural standards, and the desired behavioral consequence, according to the concept of purposeful actions (Mahmood and Raewf, 2019).

Nonetheless, TRA and TPB are both employed to describe, and expect human behavior rather than random acts induced by an unknown variable (Krok, 2013). Furthermore, Bousari and Hassanzadeh (2012) argued that the variables influencing knowledge sharing behavior could be tested using the theory of predicted behavior. However, these factors are insufficient to evaluate the standard of successful behavior; instead, several elements, and variables should be supplied and considered along with the factors of the theory. Besides that, people possibly will wish to share their knowledge but cannot do so due to a shortage of facilities and appropriate operational, cultural, and economic resources (Bousari and Hassanzadeh, 2012).

Such theories have made significant contributions to the study of information sharing behavior and inspiration in organizations. However, using all theories to describe the usefulness of knowledge sharing would certainly not be sufficient. Due to its factors variety, it is complicated to identify a paradigm that solves this issue from various viewpoints, including operational, business, sociological, psychological, and technical (Krok, 2013). Different experiments prefer to take different variables to match the hypothesis using the same theory (Liang et al., 2008).

Fig. 1 illustrates a computational model suggested for university academics based on variables specified and retrieved from literature and updated to match the research. The variables of the conceptual framework are as follows:

- Individual factors:

They are more fundamental and personal. They are aspects that stem from personal motivations. After all, it begins inside the individual (Cheng et al., 2009). Intelligence, self-efficacy, confidence, personal connections, personal desires, and the drive to communicate are all classed as individual characteristics. Hence, this leads to the following hypothesis:

H1: Individual factors effect on knowledge sharing significantly.

- Organizational factors:

Organizational considerations are those that exist outside of the employee. They are causes that do not originate from people; they possibly will be environmental or induced by somebody else to encourage the knowledge-exchange attitude (Cheng et al., 2009). Organizational considerations are classified as organizational philosophy, incentive schemes, management support, policies, and strategies (Massoudi and Hamdi, 2017). Hence, this leads to the following hypothesis:

H2: Organizational factors effect on knowledge sharing significantly.

- Technological factors:

Those influences are essential in sharing of knowledge, and knowledge must be communicated across means and networks. The readiness of IT facilities and the use of social media are two technological considerations (Massoudi and Hamdi, 2019; Bousari and Hassanzadeh, 2012). Hence, this leads to the following hypothesis:

H3: Technological factors effect on knowledge sharing significantly.

III. METHODOLOGY

A. Data Collection

Academics were the study's target group. Using a purposive sampling approach, Cihan University was picked as a sample. Surveys were handed out to academics at the chosen university. The SMART PLS3 was used to do the analysis.

B. Instrument Development

To collect data, the researchers used a questionnaire consisting of two parts. Part one, collected demographic information from participants, while part two is consisting of 16 items on a five-point Likert scale about four factors (Table I). The majority of the items were adapted from past studies (Han and Anantatmula, 2007; Chen et al., 2007; Ling et al., 2008; Ahmad et al., 2021; Thabit and Harjan, 2015).

IV. DISCUSSION OF FINDINGS

A. Assessment of Measurement Model

The measuring model describes the connection between the variables and their associated indicators (outer model). Reliability, convergent, and discriminant validity should all be validated before evaluating the measurement model. Internal consistency reliability was assessed using Cronbach's Alpha and composite reliability (CR) (Hair et al., 2017). Table I shows that the reliability is validated because both Cronbach's Alpha and CR values were higher than 0.7.

Factor loadings and Average Variance Extracted (AVE) are proposed tests for determining convergent validity (Hair et al., 2017). The findings showed that both measures were ascertained, as the factor loadings were all over the required value of 0.7, as shown in Table I, and the AVE values

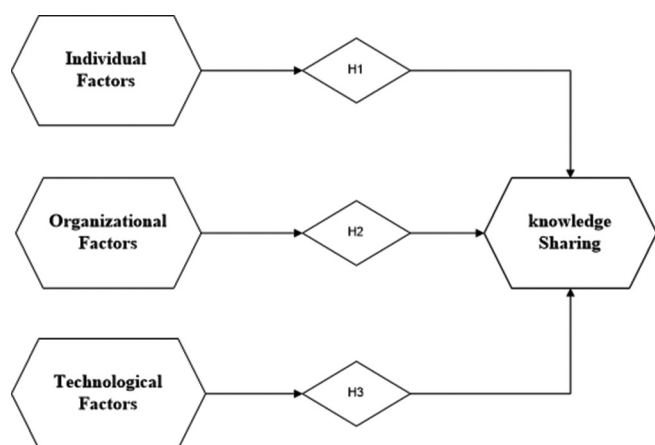


Fig. 1: Research model.

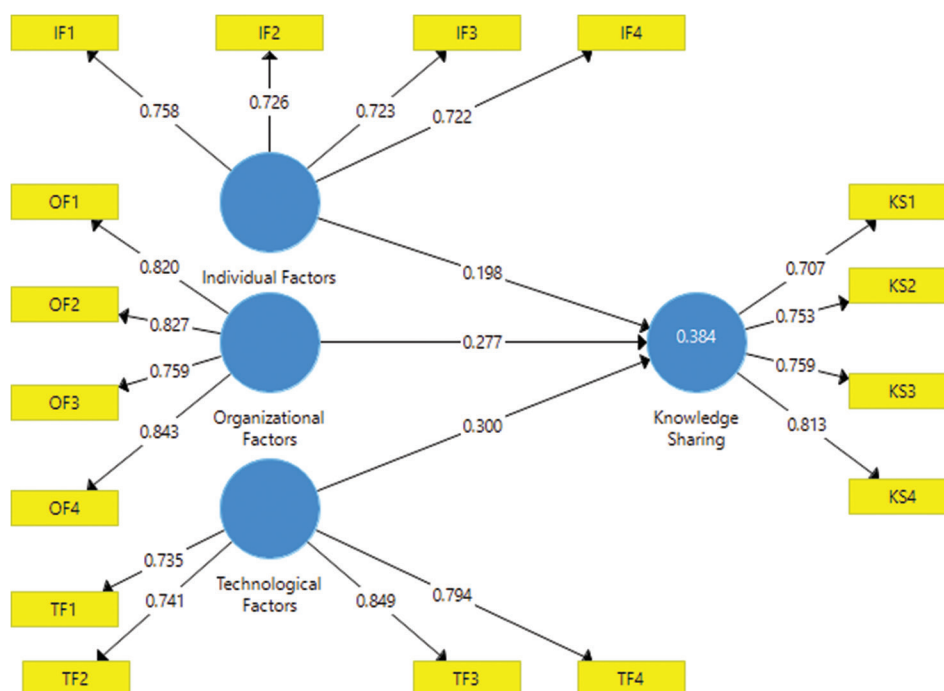


Fig. 2: Path coefficient results.

TABLE I
MEASUREMENT MODEL RESULTS

Constructs	Items	Factor loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Individual factors	IF1	0.758	0.713	0.822	0.536
	IF2	0.726			
	IF3	0.723			
	IF4	0.722			
Knowledge sharing	KS1	0.707	0.754	0.844	0.576
	KS2	0.753			
	KS3	0.759			
	KS4	0.813			
Organizational factors	OF1	0.82	0.829	0.886	0.661
	OF2	0.827			
	OF3	0.759			
	OF4	0.843			
Technological factors	TF1	0.735	0.79	0.862	0.61
	TF2	0.741			
	TF3	0.849			
	TF4	0.794			

were all more than 0.5. It has recently been suggested that the “Heterotrait-Monotrait ratio (HTMT)” is recognized as an important measure for assessing discriminant validity (Henseler et al., 2015). The HTMT ratio has also been validated, since all of the results were less than the indicated value of 0.85, as shown in Table II; As a consequence, the discriminant validity of the test has been confirmed. As a result, the measurement model has been verified, enabling us to continue with the structural model evaluation.

B. Assessment of Structural Model

The structural model explains how the latent variables relate with one another. Two important methods, hypothesis testing and coefficient of determination (R^2), are proposed to

TABLE II
HETEROTRAIT-MONOTRAIT RATIO (HTMT)

	Individual factors	Knowledge sharing	Organizational factors	Technological factors
Individual factors				
Knowledge sharing	0.62			
Organizational factors	0.551	0.607		
Technological factors	0.683	0.643	0.513	

TABLE III
HYPOTHESES TESTING RESULTS

	β	Sample mean	Standard deviation	T statistics	P values	Decision
Individual factors \rightarrow knowledge sharing	0.198	0.202	0.111	1.776	0.076	R
Organizational factors \rightarrow knowledge sharing	0.277	0.294	0.105	2.646	0.008	A
Technological factors \rightarrow knowledge sharing	0.3	0.294	0.117	2.563	0.011	a

be examined to measure the structural model. The findings are shown in Table III and Fig. 2, and data analysis revealed that hypotheses H2 and H3 were supported by empirical evidence, whereas hypothesis H1 was rejected.

The results showed that organizational factors significantly influenced knowledge sharing ($\beta = 0.277$, $t = 2.646$, $P = 0.008$) and technological factors ($\beta = 0.3$, $t = 2.563$, $P = 0.011$); supporting hypothesis H2 and H3, respectively.

The results also revealed that individual factors do not influenced knowledge sharing ($\beta = 0.198$, $t = 1.776$, $P = 0.076$); therefore, hypotheses H1 was rejected.

The R2 value is a typical approach for assessing the structural model's predictive ability. Fig. 2 shows that the model has predictive ability, explaining 0.384 of the variation in the desire to share knowledge.

V. CONCLUSION AND FUTURE WORK

The study objective was to explore the factors that may influence sharing of knowledge. The research offered empirical data on academics' knowledge sharing behavior at Cihan University in Erbil. The PLS-SEM method was used to validate the suggested model.

The empirical findings revealed that organizational and technical variables have a major effect on sharing of knowledge. The significance of organizational and technological factors in implementing a knowledge sharing environment in educational institutions was highlighted by these findings. As a result, decision-makers must concentrate on the major variables influencing knowledge sharing in educational institutions, which might boost staff performance.

As a limitation, the data were only gathered from one private university in Iraq's Kurdistan Region. Consequently, the findings may not be applicable to other Iraqi higher education institutions. More study has to be done at other public institutions to identify the matches and differences between public and private universities in terms of the suggested model.

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