

# Determinant Factors of Knowledge Sharing among Academic Staff in the Jordanian Universities

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## Abstract

The main objective of the study is to examine the determinant factors of knowledge sharing among academic staff in the Jordanian universities, respondents view were also analyzed to show the most agree on the determinant factors of knowledge sharing. The study revealed that there are variation of the determinant factors on knowledge sharing, it shows that “Enjoyment in helping others, Knowledge self-Efficacy and ICT Use” have more significant effect on knowledge sharing, in addition, the study shows that It’s observed that “Top Management Support” was the highest determinant factors of knowledge sharing, and “Knowledge Self Efficacy” was observed the lowest determinant factor of knowledge sharing.

**Keywords:** Knowledge Sharing, University, Academic Staff.

## 1. Introduction

Many businesses are highly aware of the importance of knowledge and knowledge sharing in particular, because Knowledge could increase its value when it is shared with and transferred to others.

Knowledge sharing practices and initiatives often forms a key component of knowledge management programs, in terms of organizational and individual learning (Riege, 2005)

Many researches emphasize on the importance of knowledge sharing as a medium for enhancing what individuals know and how that can affect the overall organizational performance, Other studies indicate that practicing knowledge sharing (KS) results in improved organizational effectiveness (e.g. Petrash, 1996; Gupta and Govindarajan, 2000; Olivera, 2000; to name a few).

and that’s what made Lew Platt, CEO of Hewlett-Packard say in his popular statement regarding the, “If HP knew what HP knows, we would be three times as profitable” (quoted in Caddy et al., 2001).

Despite the extensive efforts that business organizations are up to today on the encouragement of knowledge sharing are continually paving all the ways and tools and instruments that can better

enable the effective knowledge sharing between and among individuals, but evidences display that there is still some barriers are posing a problem for knowledge sharing . For instance Yao, Kam, and Chan (2007) found in their study that Knowledge management and knowledge sharing were welcome ideas in the Hong Kong government department.

Informal and tacit knowledge sharing took place but the Chinese culture remained as a barrier to knowledge sharing.

Universities are supposed to be the huge generator of knowledge, therefore, they must heavily invest on knowledge sharing which can increase the quality of research and education with respect to its relevance for society, which hence contributes to an increased economic growth. The research objective of this study is therefore to examine the factors that determine knowledge sharing among academic staff in the Jordanian private and public universities.

## **2. Knowledge Sharing**

To increase the ability to manage knowledge sharing within and across the organization thus is one of the major challenges facing contemporary organizations (Davenport and Prusak, 1998). Dyer and Nobeoka (2000) indicated that knowledge sharing could be defined as the activities of how to help communities of people work together, facilitating the exchange of their knowledge, enabling learning oriented, and increasing their ability to achieve individual and organizational goals.

KS refers to the exchange of knowledge between at least two parties in a reciprocal process allowing reshape and sense making of the knowledge in the new context (Willem, 2003).

According to VIKS (Lee, Foo, Chaudhry and al Hawamdeh, 2004), “KS occurs without proper planning and it normally occurs on one’s own will without any prior preparation.” VIKS view is an attempt to develop a KS theory and views KS more as a social interaction activity.

Knowledge sharing can be defined as a social interaction culture, involving the exchange of employee knowledge, experiences, and skills through the whole department or organization. Knowledge sharing comprises a set of shared understandings related to providing employees access to relevant information and building and using knowledge networks within organizations (Hogel et al., 2003).

Different aspects of organizational climate are critical drivers of knowledge sharing, such as top management support (Lin and Lee, 2004; Bock et al., 2005), employee involvement (Bock and Kim, 2002; Connelly and Kelloway, 2003), stimulus to develop new ideas (Taylor and Wright, 2004), and reward systems linked to knowledge sharing (Bartol and Srivastava, 2002). Creating a knowledge sharing culture with higher congruency with manager perceptions and organizational readiness may be considered a more beneficial and compatible means of promoting knowledge sharing. Meanwhile, encouraging and stimulating the development of social interaction culture, knowledge sharing should not be perceived as difficult.

## **3. Previous Studies**

Xiao & Jane (2015) in their study examine knowledge-sharing phenomena from the perspective of recipients’ characteristics. Specifically, this study examines the influence of knowledge recipients’ competence, learning attitude and personal relationship with knowledge sharer on knowledge sharers’ willingness to share. And the results revealed that recipients’ characteristics play different roles in different situations (responsive and proactive knowledge sharing) in triggering the knowledge sharers’ motivation to share. In responsive knowledge sharing, a recipient’s learning attitude and personal relationship with the knowledge sharer affected the sharer’s willingness to share. In proactive knowledge sharing, a recipient’s professional ability and personal relationship with the sharer significantly affected the sharer’s willingness to share

Kamala & Olfman (2017) in their research focus on Inter-organizational knowledge sharing systems (IOKSS) are crucial for scientific, social and economic development especially in knowledge-intensive sectors. Knowledge sharing processes and systems will not only be challenged by individual and organizational factors but also by social, technical and political inter-organizational factors. This paper aims to investigate the impact of knowledge worker, peer, IOKSS, organization and sector factors on knowledge workers' intention to share knowledge through IOKSS. Knowledge workers are the key stakeholders that enable the survival of IOKSS, and this study found that the human factors (related to knowledge workers and their peers) have significant direct impact on intention to share knowledge through IOKSS. Other factors, such as IOKSS system, organization and sector factors showed indirect impacts on knowledge workers' intention to share knowledge through IOKSS. Such investigation can be very valuable for developing countries as technological innovations such as IOKSS can be crucial for training and building human resources, and national knowledge management

A study by ali et al (2014) conducted to investigate the factors affecting knowledge sharing among academic staff in universities. Utilizing the theory of reasoned action (TRA) as the underlying research framework, the main objective of this study was threefold. First, was to examine the relationship between attitude, subjective norm, and trust with knowledge sharing intention. Second, was to examine the relationship among factors, i.e., self-efficacy, social networks and extrinsic rewards with attitude toward knowledge sharing intention and the third objective was to find out the relationship between organizational support and subjective norm, and The results indicated that of the two components of the TRA, only attitude was positively and significantly related to knowledge sharing intention. The findings also show that social network and self-efficacy significantly affect attitude and organizational support showed a strong influence on subjective norms toward knowledge sharing intention

Chin ; Yee & Geok (2014) in their study tried to investigate the knowledge-sharing barriers and strategies of academic staff in public and private universities in Malaysia which have received relatively little research attention to date, and The overall findings show that private universities are more effective and are more willing to share knowledge. Linking knowledge sharing with non-monetary rewards and fair performance appraisals are strongly recommended in private universities, while monetary rewards, recognitions, publication of knowledge on websites and newsletters and the use of appropriate technology tools and systems are strongly recommended in public universities.

Muhammad et al (2016) focused in developing and combining an understanding of the antecedents of knowledge sharing behavior among the non-academic staff of different higher learning institutions in Malaysia, and the results indicate that attitude and subjective norms both influence the staff knowledge sharing behavior significantly and positively. Additionally, this research also revealed that intention of knowledge sharing variable plays a substantial role as a mediating variable in those relationships.

Reger; Jennifer & Rachel (2013) showed in their study the limited previous research on knowledge sharing in universities, by profiling the attitudes of and intentions towards knowledge sharing of UK academics, and by profiling their views of some of the factors that might be expected to impact on knowledge sharing activities, Respondents had positive attitudes towards knowledge sharing and their intentions in this area were also good. This may be related to their belief that knowledge sharing will improve and extend their relationships with colleagues, and offer opportunities for internal promotion and external appointments. Respondents are relatively neutral regarding the way in which they are led, and the role of organizational structure and information technology in knowledge sharing. They have a relatively low level of affiliation to their university, perceptions of a high level of autonomy, coupled with a high level of affiliation to their discipline

Henry et al (2015) found in their research that the role of demographic variables in knowledge sharing among teachers in senior high schools. The relationship between demographic variables and knowledge sharing has not been clearly established in the existing literature, and the study found that

male teachers share more of their knowledge than female teachers. Additionally, first-degree holders were found to share their knowledge more than Higher National Diploma holders

Jayanthi 2(011) in his study found that there is an urgent need to share all the knowledge resources in business schools for effective delivery. Some important general observations are argued for, while studying the online knowledge-sharing tool. First, effective information technology infrastructure for sharing knowledge resources is a must, and second, all the resources need to be shared online. The paper finds that the purpose of knowledge sharing in business schools would create value in the form of academic and personal value.

Nicolae; Beate & Monika (2012) found in their study that the online programs rely on the use of educational technology for knowledge sharing in academic virtual communities of practice (vCoPs). This poses the question as to which factors influence technology acceptance. Previous research has investigated the inter-relationship between educational technology acceptance (ETA) and the vCoP context insufficiently. Therefore, the paper at hand aims to propose a conceptual model of ETA in the YCoP frame, and A regression analysis confirms the expected correlation between technology use intention and corresponding behavior. Further, participation in a vCoP influences technology use intention, and, in turn, is influenced by participants' experience with technology.

Yang (2007), indicate in his research that knowledge sharing would facilitate the transformation of collective individual knowledge to organizational knowledge without the existence of orphaned knowledge and knowledge depreciation. Furthermore, this would result in the advancement of organizational learning and eventually, the enrichment of organizational effectiveness.

Results of a study conducted by Lin and Lee (2006) showed that organizational climate significantly influences perceived relative advantage, compatibility, and complexity, which in turn positively affected the intention to encourage knowledge sharing. Contrary to previous studies, this study found that IT support did not

Significantly affect the three innovation characteristics of knowledge sharing.

Alhawary and Alnajjar (2008) found in their study that information systems technology has a significant impact on knowledge creation and conversion through applying the SECI model (Socialization, Externalization, Combination, Internalization) by the academic staff of the Jordanian universities.

Another interesting study by Mcdermott and O'dell (2001) found that overcoming "cultural barriers" to sharing knowledge has more to do with how you design and implement your knowledge management effort than with changing your culture. It involves balancing the visible and invisible dimensions of culture; visibly demonstrating the importance of sharing knowledge and building on the invisible core values. The companies they studied felt they are still learning how to do this effectively.

Al-Alawi, etl. (2007) found in their research that trust, communication, information systems, rewards and organization structure are positively related to knowledge sharing in organizations.

Lin (2007) found in his study that two individual factors (enjoyment in helping others and knowledge self-efficacy) and one of the organizational factors (top management support) significantly influence knowledge-sharing processes. The results also indicate that employee willingness to both donate and collect knowledge enable the firm to improve innovation capability.

A study conducted by Parirokh; Daneshgar and Fattahi(2008) revealed that the majority of university libraries investigated are quite friendly towards knowledge sharing, and the majority of librarians value the importance of knowledge sharing. And the knowledge that they mostly use is mainly intangible knowledge.

Benefits emerging from the early stage of KM at Bangkok University are encouraging. The educational community has improved not only through the communication and cooperation between students and staff, but also through creating an environment that supports efficiently the cross-organizational learning and knowledge-sharing processes.

Ma; Qi, and Wang (2008) in their research show that within the Chinese context, explicit knowledge promotes knowledge sharing while tacit knowledge creates barriers to knowledge sharing

in project teams. Moreover, trust is positively related to knowledge sharing but justice, leadership style, and empowerment do not influence whether employees will share knowledge among themselves in project teams.

## **4. Research Methodology**

### **4.1. Population and Sample**

The study population comprised of academic staff in the department of economic and administrative sciences at Jordan University and Applied Science private University in the Hashemite kingdom of Jordan. From each university/department a sample of 90 out of 110 academic staffs were selected based on a simple random sampling technique.

90 questionnaires were sent to respondents ;( 88) questionnaire were returned from the targeted population, (2) questionnaire were excluded from the analysis leaving (86) questionnaires that were included in the analysis (Hair; William; Babin; Anderson and Tatham, 2006) suggested that minimum sample sizes between 100 and 150 are required to achieve stable MLE results.

### **4.2. Data collection**

Primary data collection and secondary data collection methods were engaged. The primary data collection was carried out using a self-designed questionnaire. Secondary data was collected based on the findings of prior studies, published papers, articles, books and the World Wide Web (Internet) related to human resource information systems and knowledge management processes.

### **4.3. Instrument for primary data collection**

A questionnaire survey was adopted to collect the primary data in this study, the questionnaire comprises two sections, the first section covers the demographic information (Gender, Age, Designation, Year of current faculty appointment began, Nationality, Marital Status, Type of University). The second section represents the instrument, we selected (22) items of determinant factors of knowledge sharing and (4) items of the knowledge sharing which were developed by the researcher based on the theoretical background and literature review, as follow: (1-4) measures Individual factors (Enjoyment in helping others) derived from Wasko and Faraj,(5-9) measures Individual factors (Knowledge self-efficacy) was adapted from a measure developed by Spreitzer (1995). (2000), (10-13) measures Organizational factors (Top management support) adapted from studies by Tan and Zhao (2003)., (15-18) measures Organizational factors (Organizational rewards) derived from Hargadon (1998) and Davenport and Prusak (1998), (19-22) measures Technology factors (ICT use) taken from Lee and Choi (2003), (23-26) measures Knowledge Sharing adapted from Alhawary and Al-Zegaier . All items were measured using a five-point Likert-type scale (ranging from 1 strongly disagree to 5 strongly agree).

### **4.4. Reliability of data collected**

The reliability of data collected was measured using Cronbach alpha coefficient; the reliability test was conducted to check for inter-item correlation of each of the variables in the questionnaire. The test results were as follows: Cronbach alpha for Independent Variable (Determinant Factors of Knowledge Sharing) = 0.821, Cronbach alpha for dependent Variable (Knowledge Sharing) = 0.798, Cronbach alpha for over all instrument = 0.897, which exceeded the acceptable limit. Zikmund, (2002)

### **4.5. Data analysis**

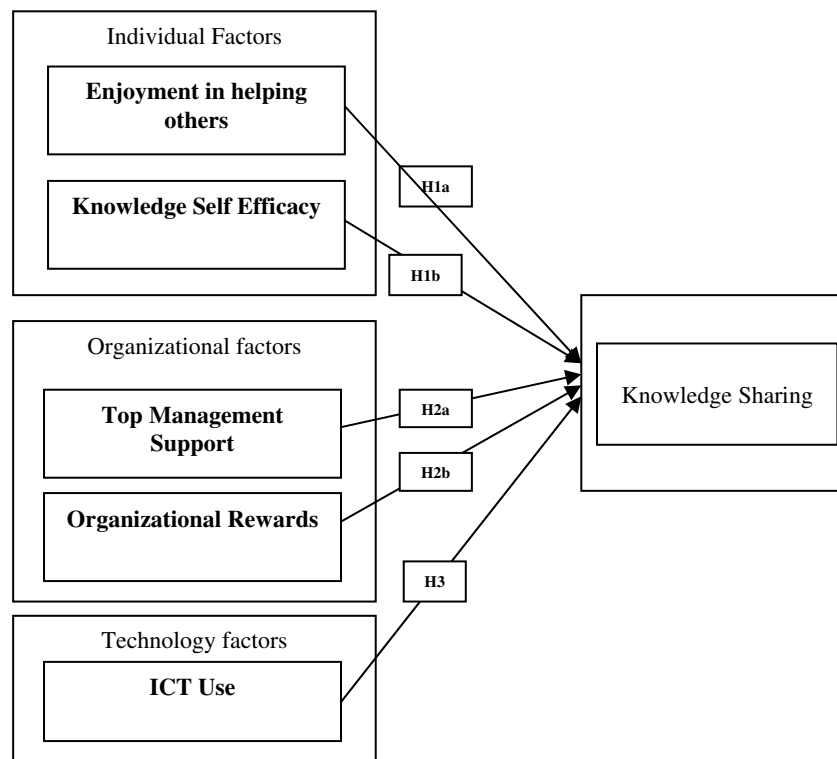
In order to test the hypothesis, the following tools were used: descriptive analysis frequencies, means and standard deviation were calculated, while to test the hypothesis one way ANOVA was used to

measure the differences between groups, and finally Multiple regression analysis was calculated to assess the impact of Determinant Factors of Knowledge Sharing on Knowledge Sharing among academic staff.

## 5. Research Model and Hypothesis

The conceptual model proposed in this study comprises Independent variables that included the three factors: Individual factors, Organizational factors, and technology factors, they are treated as enablers and facilitators, which is believed that they have a positive effect on knowledge sharing as a dependent variable. Figure 1 illustrates the research model.

Figure 1. Research Conceptual model



## 6. Determinant factors of knowledge sharing

### 6.1. Individual Factors

Individual factors are looked at as the facilitators and promoters of knowledge sharing activities, Building on recent studies, this study focuses on two variables of individual factors such as: enjoyment in helping others and knowledge self-efficacy. Enjoyment in helping others is derived from the concept of altruism (Lin, 2007). Previous research shows that employees are intrinsically motivated to contribute knowledge because engaging in intellectual pursuits and solving problems is challenging or pleasurable, and because they enjoy helping others (Wasko and Faraj, 2000; Wasko and Faraj, 2005). Most authors agree that knowledge sharing depends on individual characteristics, including experience, values, motivation, and beliefs. Wasko and Faraj (2005) suggested that individual motivators may enable employee willingness to share knowledge. We therefore hypothesize that:

*H1:* Enjoyment in helping others has a significant positive effect on knowledge sharing.

Self-efficacy is defined as the judgments of individuals regarding their capabilities to

Organize and execute courses of action required to achieve specific levels of performance (Bandura, 1986). Self-efficacy can help motivate employees to share knowledge with colleagues (Wasko and Faraj, 2005). Researchers have also found that employees with high confidence in their ability to provide valuable knowledge are more likely to accomplish specific tasks (Constant et al., 1994). Knowledge self-efficacy typically manifests in people believing that their knowledge can help to solve job-related problems and improve work efficacy (Luthans, 2003). Employees who believe that they can contribute organizational performance by sharing knowledge will develop greater positive willingness to both contribute and receive knowledge. Hence, the following hypothesis is proposed:

H2: Knowledge self-efficacy has a significant positive effect on knowledge sharing.

## **6.2. Organizational Factors**

Top management support is considered one of the important potential influences on organizational knowledge (Connelly and Kelloway, 2003). Numerous studies have found top management support essential to creating a supportive climate and providing sufficient resources (Lin, 2006). MacNeil (2004) emphasized the importance of the visible top management's support to organizational knowledge sharing climate.

Moreover, Lin and Lee (2004) proposed that the perception of top management encouragement of knowledge sharing intentions is necessary for creating and maintaining a positive knowledge sharing culture in an organization. Consequently, this study expects that top management support positively influences employee willingness to share knowledge with colleagues – both in terms of donating and collecting. The following hypothesis is therefore formulated:

H3. Top management support has a significant positive effect on knowledge sharing.

Organizational rewards indicate what the organization values shape employee behaviors (Cabrera and Bonache, 1999). Organizational rewards can range from monetary incentives such as increased salary and bonuses to non-monetary awards such as promotions and job security (Davenport and Prusak, 1998; Hargadon, 1998).

Several organizations have introduced reward systems to encourage employees to share their knowledge. For example, Buckman Laboratories recognizes its 100 top knowledge contributors through an annual conference at a resort. Moreover, Lotus Development, a division of IBM, bases 25 per cent of the total performance evaluation of its customer support workers on the extent of their knowledge sharing activities (Bartol and Srivastava, 2002). This study thus expects that if employees believe they can receive organizational rewards by offering their knowledge, they would develop greater positive willingness to both donate and receive knowledge. The following hypothesis is proposed:

H4. Organizational rewards have a significant positive effect on knowledge sharing.

## **6.3. Technology factors**

Information technology is often cited in the literature as an important KM infrastructural capability, enabling or supporting core knowledge activities such as knowledge creation, knowledge distribution and knowledge application (Gold et al., 2001). Holsapple and Whinston (1996), for example, studied the effect of IT on knowledge acquisition and representation. Purvis et al. (2001), on the other hand, investigated the general impact of IT on KM. IT facilitates organizational innovation by enhancing the initial base of knowledge that can be drawn from when employees are engaged in problem solving and decision making (Dewett and Jones, 2001). Moreover, knowledge sharing is frequently linked to supporting knowledge exchange via IT ability. For example, employees use computer-mediated communication (CMC) (e.g. e-mail, intranet, and community of practices) to improve their ability to keep up with changes in techniques and new knowledge (Huysman and de Wit, 2004; van den Hooff and de Ridder, 2004). We therefore hypothesize that:

H5: ICT use has a significant positive effect on knowledge sharing.

## 7. Hypotheses Testing and Results

### 7.1. Descriptive Analysis:

Table (1) shows descriptive statistics (including means, standard deviations) which gives of respondents view of the determinant factors of knowledge sharing, it shows agree on the determinant factors of knowledge sharing, the overall mean of determinant factors is, 3.9 with the standard deviation of 0.9885, responses of the sample for the determinant factors were arranged in ascending order as shown in Table (1). It's observed that "Top Management Support" was the highest determinant factors of knowledge sharing with the mean of 4.2, and 0.5611 of standard deviation, and "Knowledge Self Efficacy" was observed the lowest determinant factor of knowledge sharing. It also shows in Table (1) the strong view of respondents for knowledge sharing, as it appear in the mean value 3.6, with 0.8288 of standard deviation. This means that Jordanian universities encourage knowledge sharing among academic staff.

**Table (1)** Means and Standard deviation for the determinant factors of knowledge sharing

Dimensions	Mean	Standard Deviation	Level of Importance
Top Management Support	4.2	.5611	0.84
Enjoyment in helping others	3.9	.4523	0.78
Organizational Rewards	3.9	.6417	0.78
ICT Use	3.8	.8443	0.76
Knowledge Self Efficacy	3.7	.8048	0.74
Over all Determinant Factors	3.9	.9885	0.78
<i>Knowledge Sharing</i>	3.6	.8288	0.72

### 7.2. Hypotheses Testing

- H1: Enjoyment in helping others has a significant positive effect on knowledge sharing.
- H2: Knowledge self-efficacy has a significant positive effect on knowledge sharing.
- H3: Top management support has a significant positive effect on knowledge sharing.
- H4: Organizational rewards have a significant positive effect on knowledge sharing.
- H5: ICT use has a significant positive effect on knowledge sharing.

A simple regression was carried out to examine whether certain of determinant factors (Enjoyment in helping others, Knowledge self-Efficacy, Top Management Support, Organizational Rewards, and ICT Use) have a significant effect on knowledge sharing among academic Staff in the Jordanian Universities.

Table (2) depict the results. It shows that the value of  $R^2 = (0.715)$ , this means that overall determinant factors explained .715 percent of the variance in the knowledge sharing among academic staff in the Jordanian universities, it also shows the F value is ( $f=10.854$ ) significant at ( $P \leq 0.05$ ), in addition the value of Beta is ( $\beta=0.519$ ,  $P \leq 0.05$ ).

In addition a step wise method was conducted to examine whether each determinant factors has a significant effect on knowledge sharing among academic Staff in the Jordanian Universities. It shows that Enjoyment in helping others, Knowledge self-Efficacy and ICT Use have a significant effect on knowledge sharing, Based on the result we reject the 3<sup>rd</sup> and 4<sup>th</sup> hypotheses and accept the 1<sup>st</sup>, 2<sup>nd</sup>, and 5<sup>th</sup> hypotheses which indicate the positive effect of the three factors (Enjoyment in helping others, Knowledge self-Efficacy and ICT) on knowledge sharing among academic Staff at the Jordanian Universities. at level ( $P \leq 0.05$ ).

The hypothesis was tested using regression analysis, the result are exhibited in table (2) below.



**Table (2)** Regression results: Determinant Factors of Knowledge Sharing on Knowledge Sharing

VARIABLES	BETA	T	SIG.*
Enjoyment in helping others	.332	2.073	.004*
Knowledge self-Efficacy	.223	1.397	.003*
Top Management Support	.091	.165	.061
Organizational Rewards	.075	3.248	.080
ICT Use	.301	1.345	.020*

(R<sup>2</sup> = .715; F=10.854) \*Significant level at p≤ 0.05

**Table (3)** Analysis of variance between universities

Knowledge Sharing	Between Groups	57.423	2	28.711	48.74	.011
	Within Groups	49.514	84	0.589		
		106.937	86			

## 8. Summary and Concluding Remarks

Universities are looked at as the huge repository of knowledge; Universities like any organization are paying much attention to knowledge and are increasing the efforts in enhancing their quality of education performance. Doing so requires the availability of adequate knowledge which academic staff can play a major role in helping university acquiring the adequate knowledge.

Despite the increasing ability of managing knowledge sharing by universities within and between academic staff, there are, though some factors that pose a challenge in increasing those efforts: including, Individual factors, Organizational factors, and technology factors. Based on the above mentioned.

The study aimed at examining the possible effect of determinant factors on knowledge sharing among academic staff in the Jordanian universities, The study concluded that at knowledge sharing among academic staff at the Jordanian universities are determined by certain factors, those factors are classified to be individual, organizational and technological factors.

The study revealed that the most positive effect including, enjoyment in helping others, knowledge self-efficacy and ICT on knowledge sharing among academic Staff at the Jordanian Universities.

To facilitate and encourage knowledge sharing among academic staff, universities are required to provide all necessary means and work environment pertaining those factors to leverage the level of knowledge sharing.

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