

**RESEARCH TITLE**

**Motivating Factors Influencing Knowledge Sharing Behavior  
among Academic Staff**

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**Abstract**

Effective knowledge sharing among academic staff has become a rising concern among researchers. To date, motivation has been recommended as a vital way to increase knowledge sharing behaviour among academic staff. However, limited empirical research has been conducted to uncover the motivational factors among academic staff. Therefore, the aim of this paper is to determine the intrinsic and extrinsic motivation factors that influence academic staff behaviour in terms of knowledge sharing. The result revealed that motivation has a direct influence on academic staff intention of knowledge sharing behaviour. Furthermore, intrinsic factors were found to have greater positive influence than extrinsic factors on academic staff intention of knowledge sharing behaviour. Achievement and quality of supervision were found to be dominating motivation factors. Therefore, universities should provide and implement the policies that recognize academic staff achievement and select the qualified leader to lead and direct the academic staff towards successful knowledge sharing.

## INTRODUCTION

The education sector is the backbone of any country to be counted as a developed and innovative country. With education, many changes occur in technology, labour market patterns, people's life style and global environment. Universities are one of the main components of the education sector, and it is a well-known fact that universities are the ideal place for knowledge creation (Cronin, 2001), and play an essential role in the field of knowledge development, to provide ideas, insights and disseminate new products and services that improve and develop the society (Rowley, 2000; Martin & Marion, 2005; Jing *et al.*, 2012 Goh & Sandhu, 2013). To leverage more from academic staff knowledge, universities implement different systems and strategies to increase the productivity of knowledge creation and dissemination, such as knowledge management system (Rowley, 2000; Zoubi, 2009; Muhammad *et al.*, 2011; Fidalgo Blanco *et al.*, 2014) and collaborative knowledge sharing strategy (Kumaraswamy & Chitale, 2012). Furthermore, Amin *et al.* (2011b) suggest an activity called special interest group research to improve the research activity among academic staff by grouping the academic staff based on their research interest and concern.

Universities as specialists and experts in managing and sharing knowledge are considered as knowledge-based organizations (Ye *et al.*, 2005). Previous studies found that universities have an embedded culture and environment of knowledge sharing (Jain *et al.*, 2007; Bin *et al.*, 2008; Fullwood *et al.*, 2013). Moreover, successful knowledge sharing among academic staff was found to have a positive effect on university performance (Muhammad *et al.*, 2011; Kumaraswamy & Chitale, 2012 Khalil and Shea, 2012). Academic staffs as knowledge workers are the most important resource for university and their main duties related to knowledge sharing and dissemination (Rowley, 2000; Jain *et al.*, 2007). In addition, there is a widespread recognition among the academic staff regarding the importance of knowledge sharing (Machado *et al.*, 2011; Fullwood *et al.*, 2013) and how it affects their role in university which includes teaching, supervision, research and publication (Masron *et al.*, 2012).

Results from previous studies demonstrate a strong and consistent association between knowledge sharing and motivation in various organizational types (Rowley, 1996; Sharratt & Usoro, 2003; Ye *et al.*, 2005; Tohidinia & Mosakhani, 2010; Wang & Noe, 2010; Javadi *et al.*, 2012; Welschen *et al.*, 2012; Hau *et al.*, 2013; Sajeve, 2014; Shanshan, 2014; Yeon *et al.*, 2015). Furthermore, there is a good volume of published studies describing the role and influence of intrinsic and extrinsic motivation towards successful knowledge sharing among employees (Ipe, 2003; Lin, 2007; Cho *et al.*, 2007; Amin *et al.*, 2011a; Hung *et al.*, 2011; Bakan *et al.*, 2011; Da Silva & França, 2012; Olatokun & Nwafor, 2012; Welschen *et al.*, 2012; Shanshan, 2014; Susanty *et al.*, 2014).

Compared to other organizations, universities tend to rely more on knowledge sharing. However, knowledge sharing best practices among academic staff has received relatively limited attention until now (Fullwood *et al.*, 2013; Chong *et al.*, 2014). Despite the growing body of literature that recognizes the importance of academic staff motivation in the development of the higher education institutions (Rowley, 1996; Machado *et al.*, 2011;

Mawoli & Babandako, 2011; Siddique *et al.*, 2011; Abdulsalam & Mawoli, 2012; Rahab

& Wahyuni, 2013), limited empirical research to determine the effective intrinsic and extrinsic motivation factors for knowledge sharing behaviour among academic staff has been conducted (Amin *et al.*, 2011a). More specifically, academic staff in Jordanian universities were found to be less motivated than administrative staff regarding knowledge sharing (Alhammad *et al.*, 2009) and their participation in knowledge management system and knowledge sharing is still at a moderate level (Al-Omari *et al.*, 2013). Therefore, this study tries to fill the lack of insufficient empirical research in the current literature by determining the motivation factors from intrinsic as well as the extrinsic perspective that influence the knowledge sharing behaviour of academic staff in Jordanian universities.

## RESEARCH MODEL AND HYPOTHESES

### Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA) by Fishbein & Ajzen (1975) stated that individual belief and attitude can clarify most human behaviour. The theory was found very suitable to predict a wide range of human behaviours, which explain the intention and real actual behaviour of individual (Chang, 1998; Slocombe, 1999). In addition, According to Sheppard *et al.* (1988), TRA is effective when used to predict the real behaviour. In general, TRA believes that human beings are logical, and people make decisions based on relational motivation. According to TRA, individual behaviour can be determined by three elements namely attitude, subjective norms and behavioural intention and the effective way to predict whether an individual will perform a specific behaviour is by simply asking if he/she intends to perform that behaviour (Fishbein & Ajzen, 1975). More precisely, the theory asserts that the most important determinants of behaviour are the behavioural intention. Behavioural intention is an indication of individual's readiness to engage in behaviour and its turn into as a function of individual's attitude toward behaviour.

In the context of Jordanian universities, academic staff attitude, expectations and practises of knowledge management were found at a moderate level; hence, it can be assumed that academic staffs have a moderate level of knowledge sharing intention (Al-Omari *et al.*, 2013). In addition, Alhammad *et al.* (2009) stated that academic staffs have very low motivation and intention and a lack of interest regarding sharing knowledge. However, the existing literature on Jordanian universities lacks clarity regarding academic staff intention towards their behaviour of knowledge sharing. Therefore, empirical research will clarify whether knowledge sharing intention results in the real behaviour of knowledge sharing among academic staff in Jordanian universities. Hence, it is suggested that:

H1) There is a relationship between knowledge sharing intention and knowledge sharing behaviour among academic staff in Jordanian universities.

According to Deci and Ryan (2000), motivation is a salient factor that influences individual behaviour and also knowledge sharing intention (Lin, 2007; Olatokun and Nwafor, 2012; Hau *et al.*, 2013). The term motivation refers to "the reasons underlying behaviour" (Guay *et al.*, 2010). Motivation is "the attribute that moves us to do or not to do something" (Broussard & Garrison, 2004). Deci and Ryan (2000) distinguish between the two different

types of motivation (intrinsic and extrinsic) based on the reasons or goals that provide rise to action. Intrinsic motivation refers to doing something because it is interesting or enjoyable rather than relying on external pressures or a desire for reward. Meanwhile, extrinsic motivation refers to doing something because it leads to a separable outcome. Extrinsic motivation comes from outside of the individual. Numerous researchers have revealed that the quality of experience and performance can be very different when an individual is behaving for intrinsic versus extrinsic reasons (Ryan & Deci, 2000).

According to Fishbein and Ajzen (1975), intention is assumed to capture the motivation factors that influence the individual's intention to behave. In general, motivation was found to be an important factor that influences employees' intention to share knowledge (Bock *et al.*, 2005; Vera-Munoz *et al.* 2006; Welschen *et al.*, 2012; Hau *et al.*, 2013; Shanshan, 2014). In addition, Cheng *et al.* (2009) stated that knowledge sharing intention provides a decision for individual to participate in knowledge sharing behaviour and it is affected by internal and external factors. However, effective knowledge sharing among individuals cannot occur without a strong personal motivation (Stenmark, 2000). Therefore, both intrinsic and extrinsic motivation factors are important motivation factors for individual intention toward knowledge sharing behaviour. Consequently, integrating the motivation factors (intrinsic and extrinsic) with the Theory of Reasoned Action (TRA) will provide a greater explanation regarding the motivation factors that influence academic staff intention toward their behaviour of knowledge sharing.

### Intrinsic Motivation and Knowledge Sharing

In general, intrinsic motivation refers to the relationship between a person and the job. Researchers have defined intrinsic motivation in terms of the task while others defined it in terms of satisfaction (Deci, 1975). Ryan and Deci (2000) defined intrinsic motivation as a way of doing the activity for the inherent satisfaction rather than some separable consequence. Therefore, intrinsic motivation refers to engaging and to the inherent satisfaction derived from an activity, or it can be derived from the experience. Previous studies revealed that the crucial role of intrinsic motivators can explain human intention for real behaviour (Baumeister

&Leary, 1995) including knowledge sharing activities (Osterloh & Frey, 2000). Previous studies found there is a positive relationship between intrinsic motivation and knowledge sharing (Lin, 2007; Welschen *et al.*, 2012; Hau *et al.*, 2013; Olatokun & Nwafor, 2012; Sajeva, 2014; Shanshan, 2014) in various types of organizations. Among these empirical studies knowledge self-efficacy, enjoyment of helping others, recognition and achievement were found to have effective motivational influence on knowledge sharing. Therefore, this study will examine if these intrinsic motivation factors have a positive influence on academic staff intention for knowledge sharing behaviour. Therefore, it is suggested that:

H2) Intrinsic motivation factors positively influence academic staff's intention toward knowledge sharing behaviour.

### Knowledge Self-Efficacy and Knowledge Sharing

Self-efficacy has been defined as the decision of individuals to organize and take the action required to achieve certain levels of performance. In addition, individual behaviour to do any action is influenced by self-efficacy beliefs (Bandura, 1986). Through knowledge sharing activities, employees will be more satisfied to enhance their own self-efficacy and that will increase their level of confidence. Furthermore, employee's confidence will also help them to increase sharing their own knowledge both inside and outside organization boundaries when they have the opportunity (Wasko & Faraj, 2000). Previous researchers revealed that a confident employee has more ability to provide knowledge to others and they can accomplish their tasks (Constant *et al.*, 1994; Bock & Kim, 2001; Khalil and Shea, 2012). Thus, knowledge self-efficacy can provide positive intention toward knowledge sharing and it will be achieved when people believe that their knowledge can solve any problem in the workplace and that knowledge can increase the work efficiency (Constant *et al.*, 1994; Hargadon, 1998). Welschen *et al.* (2012) found that self-efficacy motivated employees to share their knowledge of each other and they have the ability to provide knowledge that can be useful for the organizations' success. Sajeve (2014) stated that when employees participate in knowledge sharing process they will learn from others and gain new knowledge and ideas, which will help them to understand more resulting in feeling greater self-efficacy and self-confidence. Consequently, knowledge self-efficacy can be considered as an intrinsic motivation factor that influences the intention of the academic staff toward knowledge sharing behaviour. Hence, it is suggested that:

H2a) knowledge self-efficacy positively influences knowledge sharing intention towards knowledge sharing behaviour among academic staff.

### Enjoyment and Knowledge Sharing

Another concept for intrinsic motivation is the enjoyment of helping others. Enjoyment helping others derives from the notion of altruism. Altruism exists when people enjoy helping others without any expectation in return. Organ (1988) defined altruism in work as employee behaviour toward helping others to solve organization problems or to accomplish tasks. In addition, Wasko and Faraj (2000) found that most employees are motivated to share knowledge when they consider their knowledge can solve the problem and doing so provides them with a feeling of enjoyment. Through knowledge sharing, individuals feel a sense of usefulness when they giving give advice to others and that makes them feel enjoyment, a sense of meaning due to their helping others and the usefulness of their expertise and knowledge (Sajeve, 2014). Consequently, enjoyment in helping others can be considered as an intrinsic motivation factor that influences the intention of the academic staff toward knowledge sharing behaviour. Hence, it is suggested that:

H2b) enjoyment in helping others positively influences knowledge sharing intention towards knowledge sharing behaviour among academic staff.

### Recognition and Knowledge Sharing

When knowledge has commercial and scientific value it is viewed as highly valued knowledge, thus, it could be difficult to share. Therefore, when individuals believe that the knowledge they possess is highly valuable, their process of knowledge sharing can be



effected by a few decisions such as what knowledge to share (tacit or explicit), who to share the knowledge with and when is the right time to share it (Andrews & Delahaye, 2000). In addition, when individuals share valuable knowledge they tend to claim the emotional ownership of this knowledge (Jones & Jordan, 1998). This sense of ownership knowledge comes from the fact that individual knowledge can be linked to their status, reputation and career development (Andrews & Delahaye, 2000). Moreover, the individual looks forward to being recognized by the organization and also from individuals (Brown & Woodland, 1999; Jarvenpaa & Staples, 2001 Wah *et al.*, 2007). Therefore, recognition is an important incentive for knowledge sharing, because employees want their organizations to be appreciative of their good work (Sutton, 2006). In organizations such as universities in which the individual's knowledge becomes the primary source of value, sharing this knowledge might potentially result in the feeling of losing their valuable knowledge which can create an unwillingness to engage in knowledge sharing activities. Therefore, universities should recognize the academic who shares his valuable knowledge with other staff. Consequently, recognition can be considered as intrinsic motivation factor that influences the intention of the academic staff toward knowledge sharing behaviour. Therefore, it is expected that:

H2c) recognition positively influences knowledge sharing intention towards knowledge sharing behaviour among academic staff.

#### Achievement and Knowledge Sharing

When individuals share their ideas and expertise in problem solving, they feel that their contribution to achievement and success of the organization should be rewarded (Sajeva, 2014). Other workers might feel achievement motivation or realize doing valuable things derived from their job or challenging task or high responsibility (Sudirman 2014). Therefore, workers feel that their achievements can provide a good opportunity for the improvement and development in their career path, and the top management should satisfy this need of employees in order to keep workers sharing their knowledge. In universities, when academic staff share knowledge that leads to university success, they expect that the university will reward them for sharing this knowledge. Consequently, achievement can be considered as an intrinsic motivation factor that influences the intention of the academic staff toward knowledge sharing behaviour. It is suggested that:

H2d) achievement positively influences knowledge sharing intention towards knowledge sharing behaviour among academic staff.

#### Extrinsic Motivation and Knowledge Sharing

In general, extrinsic motivation can be defined as when a person is engaged in a task for a reward, to achieve a meaningful goal, or to increase his self-worth (Galia, 2007). Extrinsic motivation focuses more on the goal driven reason or on the benefit that can be earned and it comes from outside the individual (Ryan & Deci, 2000). Previous studies found there is a relationship between extrinsic motivation and knowledge sharing (Lin, 2007; Sohail & Daud, 2009; Bakan *et al.*, 2011; Siddique *et al.*, 2011; Olatokun & Nwafor, 2012; Hau *et al.*, 2013; Shanshan, 2014) in various types of organizations. Among these empirical studies, expected organizational rewards, reciprocal benefit, organizational policy and administration

and quality of supervision were found to have effective motivation influence on knowledge sharing. Therefore, this study will examine if these extrinsic motivation factors have a positive influence on academic staff intention for knowledge sharing behaviour. Hence, it is suggested that:

H3) Extrinsic motivation factors positively influence academic staff's intention toward knowledge sharing behaviour.

#### Expected Organizational Rewards and Knowledge Sharing

Employee's extrinsic motivation to share their knowledge is concerned with their perception of knowledge exchange (Kankanhalli *et al.*, 2005). Thus, employees will engage in knowledge exchange based on the relationship between cost and benefit, which means comparing the effort (costs) with the rewards (benefits). If the effort is equal to or less than rewards they will continue with the exchange process, otherwise they will try to stop or ignore it (Kelley & Thibaut, 1978). Through knowledge sharing, if the costs such as time will be taken and the potential organizational reward is equal or less, they will participate. From extrinsic motivation view, individual behaviour is driven by the benefits of the action. Therefore, the main goals of extrinsic motivation behaviour are the reward or benefit that can be gained from the organization (Kowal & Fortier, 1999). Therefore, the organizational reward can be a useful tool for motivating employees to achieve the best performance. In universities context, academic staff share knowledge in their daily work, however, when this knowledge provides innovation and higher reputation for the university, they expect to be rewarded. Thus, expected organizational rewards can be considered as extrinsic motivation factor that influences the intention of the academic staff toward knowledge sharing behaviour. Therefore, it is suggested that:

H3a) expected organizational rewards positively influence knowledge sharing intention towards knowledge sharing behaviour among academic staff

#### Reciprocal Benefits and Knowledge Sharing

Another concept for extrinsic motivation is reciprocity. Reciprocity acts as a benefit because it results in feelings of personal obligation and trust. Lin (2007) said that the reciprocity behaviour is based on the exchange relationship which involves economic resources (money, goods, and services) and socio-emotional resources (status, devotion, and trust). Meanwhile, Bock *et al.* (2005) stated that reciprocal benefits can provide an effective motivation for knowledge sharing. For example, individuals engage in knowledge sharing with the expectation that their requests will be met by others in future. In addition, if individuals believe they will receive more reciprocity benefits, they will be likely to have a high intention to share knowledge. Thus, employees believe that they can gain reciprocal benefit when they share common areas of interest, specifically sharing problems with each other. Furthermore, Kankanhalli *et al.* (2005) indicated that reciprocity is the salient motivator for individual's knowledge sharing. Consequently, the reciprocal benefits are considered as extrinsic motivation factor that influences the intention of the academic staff toward knowledge sharing behaviour. Hence, it is suggested that:

H3b) reciprocal benefits positively influence knowledge sharing intention towards knowledge sharing behaviour among academic staff

#### University Policies & Administration and Knowledge Sharing

University policies and administration were found to be a key important factor that motivates the academic staff for successful knowledge sharing (Jain *et al.*, 2007; Amin *et al.*, 2011b; Siddique *et al.*, 2011). Universities need to implement the right policies and activities that strengthen the emotional bond among the academic staff such as teamwork spirit, teaching and researching skills training. Through such activities, the academic staff skills will be improved and also their level of confidence, which will lead to facilitate effective knowledge sharing (Goh & Sandhu, 2013). Furthermore, management should encourage academic staff to form groups based on their knowledge and research interests to increase the knowledge sharing activity (Amin *et al.*, 2011b). Therefore, Jain *et al.* (2007) proposed some policies that universities should implement to enhance the knowledge sharing activity among the academic staff such as implementing policies that recognize and reward individuals as well as teams who share more knowledge with others, and implement the rotation policies among staff for the academic position. Consequently, university policies and administration can be considered as the third factor of extrinsic motivation that can influence the intention of the academic staff toward knowledge sharing behaviour. Hence, it is suggested that:

H3c) University policies and administration positively influence knowledge sharing intention towards knowledge sharing behaviour among academic staff.

#### Quality of Supervision and Knowledge Sharing

Academic leaders have more challenges than leaders in business organizations as academic leaders deal with students, faculty members and top management at the same time. In addition, the academic leader should group faculty members together and direct them in order to perform the work and empower them to do the required task. In addition, Siddique *et al.* (2011) stated that academic leader has great role in motivating and satisfying the faculty members by providing different kinds of rewards and as academic institutions are much different from other organizations, different motivational policies should be used by the academic leader in order to motivate the academic staff. Consequently, leaders in higher education have different challenges compared to other organizations. One of the main duties of the academic leader is supervision. The supervisor has many duties such as managing academic staff and team performance, providing orientation, adequate training, evaluating, training and motivating the academic staff. Therefore, the quality of supervision plays an effective role to enhance the knowledge sharing behaviour of the academic staff. Consequently, quality of supervision is considered an extrinsic motivation factor that influences the intention of the academic staff toward knowledge sharing behaviour. Therefore, it is expected that:

H3d) quality of supervision positively influences knowledge sharing intention towards knowledge sharing behaviour among academic staff.



## METHODOLOGY

Only private universities in Jordan were selected as the target population. Probability sampling using stratified random method was applied; the academic staff ranking was used as the sampling strata (Lecturer, Assistant professor, Associate professor and Professor). The questionnaire was the main instrument for data collection in this study. The questionnaire was given to three academic staff expert in the field of knowledge sharing from different Jordanian universities to validate the content of research instrument. On the whole, the experts believed that the research instrument is valid and acceptable for the study purpose. In addition, a pilot study was conducted to detect possible problems in research instrument or design and the relevance of the instrument. A random sample of 30 academic staff in private Jordanian universities was used for the pilot study. The Cronbach's alpha values ranged from 0.802 to 0.900, as indicated in Table 2, which are above the acceptable value of 0.70 (Nunnally, 1978), which indicated good instrument reliability. The researcher handled the printed questionnaire with cover letters that contain an introduction about the research, purpose and aim of the study along with an instruction paper that describes to whom the academic staff should return the filled questionnaire. The researcher selected a contact person in each private university to collect the filled questionnaire in order to ease the collection. Follow up calls were made by the researchers to the contact person in each private university. The response rate was 83.5% which indicates very good interaction from the

academic staff. On the basis of university name the respondents of Al-Zaytoonah University were the highest sample representing 11.2 % of the sample size (N = 35) followed by Zarqa private University at 11.0% (N = 34), and the lowest sample was from Ajloun national private university at 3.2% (N = 10). Most of the academic staff were ranked as Assistant Professor 50.8% (N = 157), and professor with the lowest present 11.0 % with sample size (N = 34). When respondents were asked about their years of experience, 25.9 % (N =80) indicated 5-9 years experiences and the lowest with 13.7 % (N = 42) had 20 years of experiences or more. Majority of the respondents were male 77.6% (N = 240), while 22.3% (N = 69) were female. Based on the age of the academic staff the highest age was 45 – 54 years with 35.3 % (N = 109) and the lowest age was 25 years or less representing 0.6 % (N = 2). Table 1 shows the demographic profile for the academic staff.

Table 1: Sampling profile

	Demographical (N=309)	Frequency	Percent
University Name	Al-Ahliyya Amman University	28	9.1
	Applied Science Private University	29	9.4
	Philadelphia University	25	8.1
	Isra University	28	9.1
	Petra University	25	8.1
	Al-Zaytoonah University	35	11.2
	Jerash Private University	17	5.5
	Irbid National University	11	3.6
	Zarqa Private University	34	11.0
	Princess Sumaya For Technology	13	4.2
	Amman Arab University	11	3.6

	Middle East University	17	5.5
	Jadara University	14	4.5
	American University Of Madaba	12	3.9
	Ajloun National Private University	10	3.2
Academic Rank	Lecturer	62	20.0
	Assistant Professor	157	50.8
	Associate Professor	56	18.2
	Professor	34	11.0
	Below 5 Years	46	14.9
Experience Years	5 - 9 Years	80	25.9
	10-14 Years	70	22.6
	15 - 19 Years	71	22.9
	20 Years Or More	42	13.7
Gender	Male	240	77.6
	Female	69	22.3
Age	Less Than 25	2	0.6
	25-34	56	18.2
	35-44	76	24.6
	45-54	109	35.3
	55 Years And More	66	21.3

### Measures

Items used to operationalize the construct of intrinsic and extrinsic motivation factors, knowledge sharing intention and knowledge sharing behaviour are based on prior empirical studies and mainly adapted from previous studies that have been previously tested for reliability and validity. All constructs were measured by using the means of the multiple items based on a five-point Likert-type scale (ranging from 1 = strongly disagree to 5 = strongly agree). Table 2 lists all the items used to measure each construct. In this study, knowledge self-efficacy was measured by four items to assess the academic staff expertise and confidence in their own knowledge, and they were adapted from Lin (2007) study. In addition, enjoyment in helping others was measured by four items to assess the academic staff feeling when they shared knowledge that helps other colleagues, and they were adapted from Lin (2007) study. Meanwhile, recognition was measured by four items to assess the recognition that the university provides to the academic staff when to share this knowledge and they were adapted from Smerek and Peterson (2007) study. Also, achievement was measured by four items to assess how university recognizes the academic staff achievement that occurred through knowledge sharing activity, and they were adapted from Tan and Waheed (2011) study. Furthermore, expected organizational rewards were measured by four items to assess the academic staff agreement about salary, bonus, promotion and job security, and they were adapted from Lin (2007) study. Meanwhile, reciprocal benefits were measured by four items to assess the academic staff agreement on how knowledge sharing can increase their relationship with each other either inside the same university or outside, and they were adapted from Lin (2007) study. In addition, University policy and administration were measured by four items to assess the degree of the effective communication that occurred between the academic staff and the management and how the benefits package that academic

staff receive satisfied their decision to stay at the same university, and they were adapted from Al-Mekhlafie (1994) study. Moreover, the quality of supervision was measured by five items to assess how the academic supervision of the university deals with the academic staff in terms of communication, respect and new ideas, and they were adapted from Smerek and Peterson (2007) study. Knowledge sharing intention was measured by five items to assess the academic staff intention for sharing their own experience and any official documents between each other, and they were adapted from Lin (2007) study. Finally, knowledge sharing behaviour was measured by five items to assess the degree of the academic staff participation and their real behaviour for sharing their experience, official documents that contain any new knowledge which can help and increase their own knowledge and they were adapted from Chennamaneni (2006) study.

Table 2 Results for the Research Instrument

<i>Research Construct /Measured Items</i>	<i>Items loading</i>	<i>AVE</i>	<i>CR</i>	<i><math>\alpha</math></i>
Knowledge Self- Efficacy (KS)		0.652	0.882	.878
I am confident in my ability to provide knowledge that others in my university consider valuable	0.75			
I have the expertise required to provide valuable knowledge for my university.	0.88			
It does not really make any difference whether I share my knowledge with colleagues.	0.81			
Most other academic staff can provide more valuable knowledge than I can	0.79			
Enjoyment In Helping Others (EH)		0.569	0.841	.840
I enjoy sharing my knowledge with my colleagues	0.78			
I enjoy helping my colleagues through sharing my knowledge	0.76			
It feels good to help my colleagues by sharing my knowledge	0.78			
Sharing my knowledge with my colleagues is pleasurable	0.70			
Recognition (RE)		0.551	0.830	.825
My university recognizes my knowledge	0.69			
My knowledge contributions	0.83			

<i>Research Construct /Measured Items</i>	<i>Items loading</i>	<i>AVE</i>	<i>CR</i>	<i><math>\alpha</math></i>
are valued by the members of the university, community and outside university				
I get appropriate recognition when I have done something extraordinary with the knowledge I have	0.78			
Expressions of thanks and appreciation are common in my department/ university regarding the knowledge that I share	0.66			
Achievement (AC)		0.621	0.867	.861
I am proud to work in this university because it recognizes my knowledge achievements	0.72			
recognizes my knowledge achievements				
I feel satisfied with my knowledge because it gives me feeling of accomplishment	0.88			
I feel that my knowledge contributed towards my university in a positive manner	0.84			
I am able to evaluate my knowledge accomplishment objectively	0.70			
Expected Organizational Rewards (EOR)		0.514	0.808	.806
I will receive a higher salary in return for my knowledge sharing	0.64			
I will receive a higher bonus in return for my knowledge sharing	0.80			
I will receive increased promotion opportunities in return for my knowledge sharing	0.72			
I will receive increased job security in return for my knowledge sharing	0.70			
Reciprocal Benefits (RB)		0.604	0.859	.856
By sharing my knowledge with my colleagues, I strengthen ties between existing members of the university and myself	0.76			
By sharing my knowledge with my colleagues, I expand the scope of my association with other university members	0.88			
I expect to receive knowledge in return when I share my knowledge with my colleagues	0.74			

<i>Research Construct /Measured Items</i>	<i>Items loading</i>	<i>AVE</i>	<i>CR</i>	<i><math>\alpha</math></i>
I believe that my future requests for knowledge will be answered if I share my knowledge with my colleagues	0.72			
University Policies And Administration (UPA)		0.517	0.801	.802
Senior management in my university keeps academic staff informed with the new knowledge	0.68			
My university policies meet my knowledge needs.	0.75			
The administrative procedures and policies used to carry out the knowledge sharing program are made available to all faculty members.	0.75			
The benefits package is a significant factor in my decision to share my knowledge at the University	0.70			
Quality Of Supervision (QS)		0.644	0.901	.900
My superior creates an environment that fosters trust in order to share knowledge	0.80			
My superior treats me with respect because of my knowledge	0.77			
My superior considers my ideas and knowledge	0.81			
My superior trust my knowledge	0.83			
My superior deals effectively with poor knowledge performance	0.80			
Knowledge Sharing Intention (KSI)		0.599	0.882	0.881
I intend to share knowledge with my colleagues more frequently in the future	0.79			
I plan to share knowledge with my colleagues	0.83			
I would share internal reports and other official documents with my colleagues.	0.76			
I will always make an effort to share knowledge with my colleagues	0.74			
I intend to share knowledge with colleagues who ask me	0.74			
Knowledge Sharing Behaviour (KSB)		0.593	0.879	0.887



<i>Research Construct /Measured Items</i>	<i>Items loading</i>	<i>AVE</i>	<i>CR</i>	<i><math>\alpha</math></i>
I shared factual knowledge from work with my colleagues	0.75			
I shared internal reports and other official documents with my colleagues	0.74			
I shared my work experiences with my colleagues	0.82			
I shared my education expertise with my colleagues	0.79			
I shared my knowledge from work with my colleagues	0.74			

### Confirmatory Factor Analysis and Measurement Model

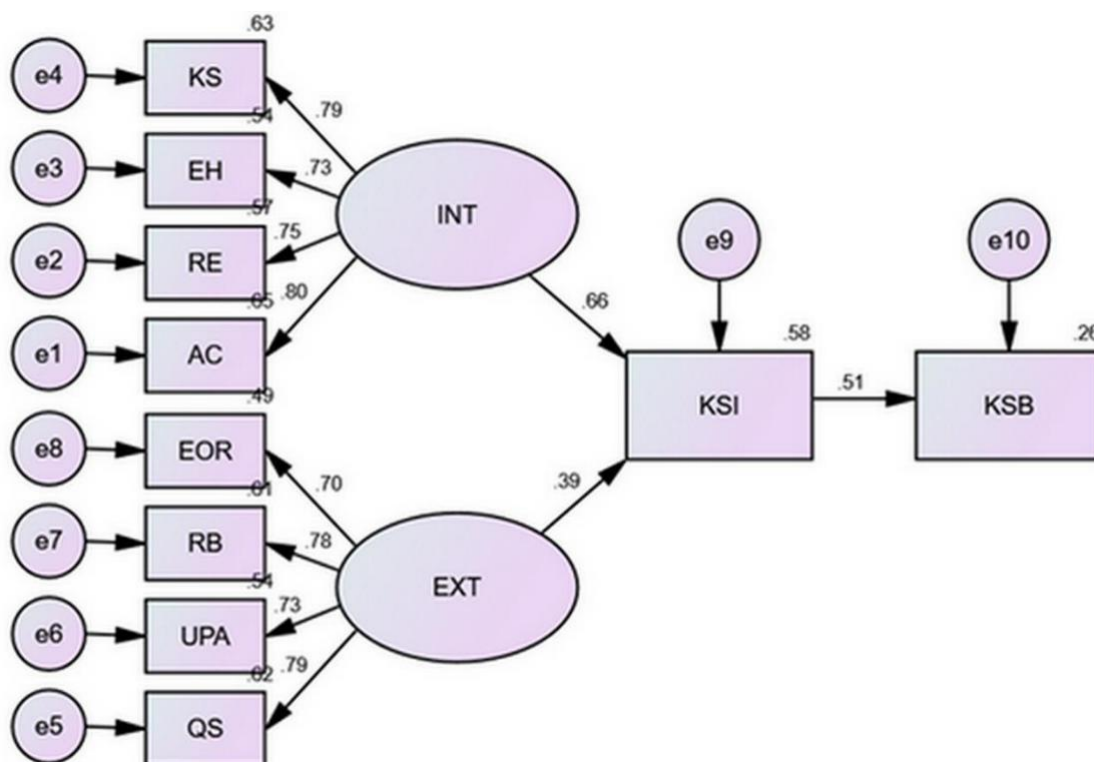
A preliminary confirmatory factor analysis (CFA) suggested that all items loaded reasonably well on their latent factors. According to Hair *et al.* (2012), a value of 0.50 is considered as acceptable value for factor loading in CFA test. The result revealed as indicated in Table 2 that the standard loading for the items ranged from 0.64 to 0.88. Moreover, the composite reliability (CR) was examined to have good construct reliability. According to Bagozzi and Yi (1998), a CR value of 0.6 is the acceptable value to meet the requirement of construct reliability in SEM analysis. The result revealed as indicated in Table 2 shows that the composite reliability ranged from 0.801 to 0.901. In addition, the measurement model was tested for the construct validity. The convergent validity was checked by the average variance extracted (AVE). An AVE value of 0.5 or more is used to indicate an adequate convergent validity (Hair *et al.*, 2006). The average variance extracted values for the study constructs as indicated in Table 2 ranged from 0.514 to 0.652 which indicated adequate convergent validity. In addition, discriminant validity was assessed by comparing the squared correlation between each pair of constructs against the average of the AVEs for these two constructs. Table 3 indicates the measure has adequate discriminant validity, as the square root of the average variance extracted for each construct is greater than the levels of correlations involving the construct. Moreover, the common method variance was tested to determine to what degree any such biases exist. Harman single factor technique was used in this study to determine to what degree any such biases exist (Harman, 1967). Specifically, an exploratory factor analysis was used to all variables to load onto a single factor and constrained so that there is no rotation (Podsakoff *et al.*, 2003). The results revealed that all factors accounted for 33.17 percent of the total variance, which indicated that the common method bias was not a significant issue in the study (Podsakoff & Organ, 1986).

Table 3 Discriminant validity for The Research Constructs

	CR	AVE	EOR	KS	EH	RE	AC	KSB	KSI	QS	RB	UPA
EOR	0.808	0.514	0.717									
KS	0.882	0.652	0.450	0.807								
EH	0.841	0.569	0.347	0.667	0.754							
RE	0.830	0.551	0.369	0.715	0.631	0.743						
AC	0.867	0.621	0.345	0.691	0.678	0.694	0.788					
KSB	0.879	0.593	0.412	0.343	0.391	0.343	0.346	0.770				
KSI	0.882	0.599	0.570	0.691	0.669	0.654	0.665	0.606	0.774			
QS	0.901	0.644	0.638	0.411	0.394	0.392	0.382	0.332	0.566	0.803		
RB	0.859	0.604	0.643	0.404	0.384	0.341	0.298	0.399	0.552	0.686	0.777	
UPA	0.801	0.517	0.620	0.380	0.334	0.297	0.255	0.403	0.505	0.680	0.676	0.719

Moreover, the researcher tested the structural model using information obtained by means of a construct that was collected from the sample of 309 academic staff. The structural (hypotheses) model provides good model fit with the collected data. The Chi-square = 100.425, DF = 34,  $X^2/DF = 2.954$ , NFI = 0.931, GFI = 0.945, AGFI = 0.911, CFI = 0.953, RMSEA = .080. Figure 1 shows the research model with the path values for each construct.

Figure 1 Research (hypotheses) Model



**DISCUSSION AND IMPLICATION**

This study set out with the aim of assessing the importance of motivation factors (intrinsic and extrinsic) on academic staff intention toward knowledge sharing behaviour in Jordanian universities. Consistent with expectations, the result indicated that both intrinsic and extrinsic motivation factors have a positive influence associated with the intention of academic staff for knowledge sharing behaviour in Jordanian

universities. In addition, the results of this study indicate that intrinsic motivation factors have more positive influence than extrinsic motivation factors on academic staff intention towards knowledge sharing behaviour. Therefore, universities should be more concerned with intrinsic motivation factors in order to achieve successful knowledge sharing behaviour among academic staff. First, the current study found that there is a positive relationship between knowledge sharing intention and knowledge sharing behaviour among the academic staff in Jordanian universities ( $\beta = .506, P < 0.00, R^2$  for KSI = .58 and  $R^2$  for KSB = .26). This result is consistent with previous findings (Bock *et al.*, 2005; Iqbal *et al.*, 2011; Goh & Sandhu, 2013). Therefore, determining the motivation factors (intrinsic and extrinsic) that influence the academic staff intention is important for successful knowledge sharing behaviour.

The current study found that intrinsic motivation factors have a positive influence on academic staff intention of knowledge sharing behaviour ( $\beta = .658, P < 0.00$ ). This finding is consistent with past findings (Welschen *et al.*, 2012; Shanshan, 2014). Among the four intrinsic factors, achievement was found as the primary motivation for academic staff intention towards knowledge sharing behaviour ( $\beta = .803, P < 0.00$ ). This result is consistent with previous findings (Chong *et al.*, 2014; Sajevea, 2014). This result may be explained by the fact that academic staffs feel that their contribution to achievement and success to the

university must be rewarded. In addition, their achievement can provide a good opportunity for the improvement and development in their academic career path. Therefore, universities must apply practices that can obtain a high sense of achievement and a joy of growth from knowledge-sharing activities such as involving academic staff in decision-making or problem-solving process.

Consistence with prior research, knowledge self-efficacy was also found to be an important motivation factor for knowledge sharing behaviour among the academic staff ( $\beta = 794, P < 0.00$ ). This result was consistent with other researcher findings that knowledge self-efficacy is a motivation factor for knowledge sharing behaviour (Lin, 2007; Tohidinia & Mosakhani, 2010; Olatokun & Nwafor, 2012 Welschen *et al.*, 2012; Hau *et al.*, 2013). A possible explanation for these results may be that academic staff have more confidence in their knowledge and they have the ability to provide knowledge to others that can help them to accomplish their tasks. Therefore, academic staff leaders must enhance the perceptions of knowledge self-efficacy among the academic staff by indicating that their knowledge can make a significant contribution to the university and to society.

Another important finding was that recognition is also an essential intrinsic motivation factor for knowledge sharing behaviour ( $\beta = 755, P < 0.00$ ). This result is consistent with the other researcher findings (Jain *et al.*, 2007; Da Silva & França, 2012; Sajeva, 2014; Susanty *et al.*, 2014). These results are likely to be related to academic staff tendency to claim an emotional ownership of owning a valuable knowledge and they look to get recognition and respect from university, supervisors and peers. Thus, university top management should recognize the academic staff who shares valuable knowledge by different methods such as financial rewards or enhancing the staff members' status inside the university. In addition, the result revealed that enjoyment in helping others is an important intrinsic motivation factor for knowledge sharing ( $\beta = 735, P < 0.00$ ). The result was consistent with other researchers finding that enjoyment in helping others is a motivation factor for knowledge sharing (Lin, 2007; Olatokun & Nwafor, 2012; Welschen *et al.*, 2012) Hau *et al.*, 2013; Sajeva, 2014). A possible explanation for this might be that academic staff feel that the help they provide through knowledge sharing is meaningful and useful. Hence, academic staff leaders must increase the level of enjoyment among the academic staff by enhancing their positive mood regarding the usefulness of their help and how their knowledge can solve problems of other academic staff or the university.

Furthermore, the current study further supports the idea that extrinsic motivation factors have a significant positive influence on academic staff intention for knowledge sharing behaviour ( $\beta = 386, P < 0.00$ ). This result is consistent with previous findings (Jain *et al.*, 2007; Hung *et al.*, 2011; Jahani *et al.*, 2011; Amin *et al.*, 2011b; Shanshan, 2014). One interesting finding is the quality of supervision as extrinsic motivation factor was found to have the highest influence on the academic staff intention for knowledge sharing in private Jordanian universities ( $\beta = 785, P < 0.00$ ). This result is consistent with the Siddique *et al.* (2011) findings. This

result may be explained by the fact that academic supervision plays an effective role in motivation and enhances the academic staff intention for knowledge sharing behaviour. Thus,

university management should select a qualified academic leader who can motivate, lead, direct and eliminate the effect of any barrier that may influence the knowledge sharing activity among the academic staff. Another important finding was that reciprocal benefits have positive motivation influence on academic staff intention of knowledge sharing ( $\beta = 780$ ,  $P < 0.00$ ). This result was consistent with other researchers' findings (Cho *et al.*, 2007; Gururajan and Fink, 2010; Hung *et al.*, 2011; Olatokun & Nwafor, 2012; Hau *et al.*, 2013; Endres & Chowdhury, 2013). A possible explanation for this might be that academic staff believes they can obtain reciprocal benefits from others when sharing their knowledge. Thus, effective knowledge sharing requires active academic staff participation efforts to targeted reciprocal relationships for generating a positive knowledge sharing environment in universities. Consequently, one important role for the academic staff leaders is to improve the perceptions of reciprocal benefits among the academic staff. Another important finding was that University policies and administration also influenced academic staff intention for knowledge sharing ( $\beta = 735$ ,  $P < 0.00$ ). This result is consistent with the consistent with studies findings (Jain *et al.*, 2007; Amin *et al.*, 2011a; Siddique *et al.*, 2011). A possible explanation for this might be that academic staff believes that university policies play an effective role in motivating them for knowledge sharing. Therefore, universities need to implement the right policies and activities that can strengthen the emotional bond and communication among the academic staff which lead to facilitate knowledge sharing. One unexpected finding was that expected organizational reward had a positive influence on academic staff ( $\beta = 700$ ,  $P < 0.00$ ). This result was inconsistent with other researcher's findings (Lin, 2007; Wah *et al.*, 2007 Olatokun & Nwafor, 2012; Hau *et al.*, 2013). Therefore, academic staff in private Jordanian universities emphasized organizational rewards, which mean universities rewards are an important key to successful knowledge sharing among the academic staff in private Jordanian universities and this was supported by Wah *et al.* (2008) findings. Thus, university management should apply the rewards systems in order to have successful knowledge sharing behaviour among the academic staff.

#### LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

As with any other research, this paper is not without limitation. Therefore, this limitation should be addressed and overcome by future research. Due to time and monetary constraint, this study focuses only on academic staff in Jordanian universities, since it is limited to the private universities in Jordan. Future research should include public universities in Jordan. Hence, a comparative study between the private and public universities can be carried out. In addition, future study should focus on the longitudinal time frame. Although longitudinal study consumes a lot of time and cost, it will allow future researchers to track changes and trends regarding academic staff behaviour for knowledge sharing. Moreover, this paper adapted the survey method for the data collection. However, another method of data collection such as interview may provide more depth information about the motivation factors among academic staff. Finally, this research investigated the major intrinsic and extrinsic motivating factors that influence the academic staff behaviour for knowledge sharing. Therefore, there can be other intrinsic and extrinsic motivating factors and also a mediator and moderators such as demographic characteristics and situational variables factors that might influence the knowledge sharing behaviour. It will be investigated more broadly in future studies.

#### CONCLUSION

In conclusion, knowledge sharing is a dynamic tool for all organizations, especially for universities. Academic staff motivation has been identified as a key enabler for successful knowledge sharing behaviour. Hence, the understanding of intrinsic and extrinsic motivating



factors that influence the knowledge sharing behaviour of academic staff is also important. The main goal of the current study was to determine the intrinsic and extrinsic motivation factors that influence the academic staff intention towards knowledge sharing behaviour. This study attempted to fill the gap in the current theoretical literature on knowledge sharing from both intrinsic and extrinsic motivation perspective in universities sector. Despite the limitations, this study fills the gap in previous research by concentrating on the relationship between motivating and knowledge sharing intention towards knowledge sharing behaviour. In addition, this study set out to investigate the impact of intrinsic and extrinsic motivating factors on knowledge sharing behaviour among academic staff. It is hoped that

the findings of this study will be sufficiently comprehensive and will be beneficial to the universities top management in order to improve the knowledge sharing behaviour of academic staff.

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