

Factors Affecting Knowledge Sharing Behavior among Stakeholders in Jordanian Hospitals Using Social Networks

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Abstract—Survival of any organization heavily depends on knowledge sharing, however, the variables that enhance or dissuade knowledge sharing behaviors in the Jordanian hospitals has not been poorly recognized. The aim of this research is to determining and examining the factors that may encourage and enhance the knowledge sharing behavior among stakeholders in Jordanian hospitals using social networks. To achieve the objective of this research, we have conducted questionnaire survey with the stakeholders, where 1800 questionnaire were distributed of in the various sectors in Jordanian hospitals. The results from the survey indicated that, 12 out of the 14 proposed hypotheses are supported. These hypotheses are the crucial factors that influence the knowledge sharing behaviors of stakeholders.

Keywords-Knowledge sharing; Social Networks; TPB; Jordanian hospitals; Knowledge Sharing Behaviour; Knowledge Sharing Barriers

I. INTRODUCTION

As an important resource, knowledge has drawn significant research interest, particularly in the organizational context [1]. Knowledge has become a vital resource as information and communication technology (ICT) progressed and is now deemed useful in determining an organization's success and in creating sustainable competitive advantage amid changes resulting from globalization [2]. Given this new role of knowledge, most organizations, such as hospitals, have realized the need for an effective and efficient knowledge management.

One of the key success factors of any knowledge management is the communication among individuals, particularly on sharing knowledge among the individuals [3]. Knowledge sharing is related to the willingness and readiness of individuals to share their knowledge with others [4]. However, effective knowledge sharing among individuals depends on the individuals' knowledge sharing behaviors. The lack in knowledge sharing in an organization is considered as one of the main barriers in knowledge management initiative

[5]. There are factors that could aid the knowledge sharing behaviors as well as restricting individuals from sharing their knowledge [6].

Effective knowledge sharing requires tools such as social networks technology [7]. As a social networks technology and as a social medium, social networks facilitate the knowledge sharing among workers for informal communication [7].

A practical model for knowledge sharing is crucial to support knowledge management system in an organization. To facilitate knowledge sharing, this research has identified the factors enhance the knowledge sharing behavior; proposed a conceptual model, based on TPB, to facilitate and enhance knowledge sharing behavior among stakeholders (i.e. doctors, pharmacists and nurses) in Jordanian hospitals.

II. LITERATURE REVIEW

A. Knowledge

Knowledge is information that is contextual, relevant, and applicable, or information that can be used [8]. Ahmad and Daghfous (2010) [9] defined knowledge as “a state of knowing that constitutes facts, concepts, principles, laws, causal relationships, insights, judgments, intuitions, and feelings.” Knowledge has different types, including explicit and tacit, organizational routine and procedural knowledge, general and specific, as well as individual and organizational knowledge. Law (2007) [10] stated that in KM domains, explicit and tacit knowledge are the most commonly distinguished. According to Langer (2004) [11], researchers believe that the main objective of KM is transforming tacit knowledge into explicit knowledge; tacit knowledge is important in KM.

B. Knowledge sharing

Current reviewing of the knowledge sharing literature indicated that there is no comprehensive definition about knowledge sharing. Each scholar has their own perspectives, definitions and explanations of knowledge sharing. Referring to Lee and Al-Hawamdeh (2002) [12] defined knowledge sharing as a “deliberate act that allows knowledge to be reuse by other people through knowledge transfer.” In addition, Boon-In, Choy-Har, Chee-Hoong, Keng-Boon, and Felix

(2010) [13] have defined knowledge sharing as an activity to disseminate the information, values and ideas among more than one party; in order to create and rebuild knowledge to be understandable to all parties. Knowledge sharing has been identified as a major focus area in KM; moreover, knowledge is inherent among individuals [14]. In addition, there is many barriers that affect individual's behavior toward knowledge sharing [15], [6].

C. Knowledge sharing barriers

Connelly and Kelloway have described knowledge sharing as a range of behavior, which entail the transfer of information or support to others. According to Riege (2005) [6], these behaviors are affected by three dozen of universal barriers, which divided into three categories and are: Individual barriers; organizational barriers; and technological barriers. A study conducted by the author earlier has found that, there are only 21 barriers out of 36 universal barriers in all categories, which clearly hinder the knowledge sharing in Jordan. These barriers are:

- 1) *Individual barriers; such as, lack of time, past mistakes, differences in levels of experience, lack of interaction, difference of education levels, and taking ownership, difference in national culture;*
- 2) *Organizational barriers: such as, lack of leadership, lack of formal and informal space to share, physical work environment, existing corporate culture, and deficiency of company; and*
- 3) *Technological barriers: such as, unrealistic expectations of employees, lack of compatibility, mismatch, reluctance to use it systems, lack of training, and lack of communication.*

To enhance knowledge sharing behaviors among the stakeholders in Jordanian hospitals, a number of new factors that enhance the knowledge sharing behavior are defined. These factors are considered as general behavioral factors that influence knowledge sharing behaviors among individuals.

D. Factors influencing knowledge sharing behavior

Previous studies Ismail and Yusof (2008) [16] and Alam, Abdullah, Ishak, and Zain (2009) [17], indicated that there are several factors that could influence individual readiness for knowledge sharing. These factors range from physical objects, such as tools and technologies [16], [17], to abstract concepts, such as motivations and providing incentives to encourage knowledge sharing [18], organizational culture, personal values, and self identity [17], national culture [19], trust [17], organizational resources such as time and space [20], awareness [16], altruism [21], personality [16], leadership [22], and access to knowledgeable people in an organization [23].

These factors are associated with a number of theories and models such as theory of planned behavior (TPB) and technology acceptance model (TAM). TPB are adopted through this work in order to propose the new conceptual model. The purpose of the proposed model is to enhance knowledge sharing behavior among stakeholders in Jordanian

hospitals using social networks. Accordingly, there is a need to explore more about TBP model.

E. Theory of Planned Behavior (TPB)

According to Ajzen (1991) [24] TPB has been the most influential and most commonly used approach to explain, predict and clarify human behavior in specific context [25]. This theory is an extension and development of the Theory of Reasoned Action (TRA) [26]. This extension and development is the result of the emergence of that behavior, which is not cent percent non-reflex and within command. This outcome resulted in the introduction of a novel aspect, which is perceived as behavioral control. This concept reveals that, the intent of an individual depends on a specified aspect of behavior [27]. All the elements of TPB, such as, mind-set towards behaviour, subjective norms, perceived behavioural controls which are parts of the intention [24] are measured as factor that will determine the actual behaviour. As shown in figure 1.

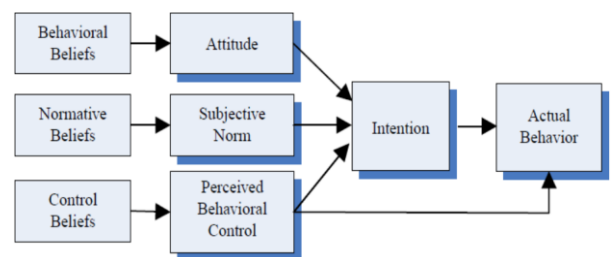


Figure I. Components of TPB (Ajzen, 1991)

Meanwhile, numerous formative papers and meta-analytic studies have found that the TPB considers normative influences but discounts other variables related to behavioral intention and motivation (e.g., fear, threat, mood, or past experience) as well as environmental or economic factors that influence behavioral intention [28]. As a result, a considerable proportion of variance is left unexplained. Ajzen (1991) [24] suggested the addition of new variables to the model provided that these variables could account for variance over and above the original model.

This paper has adopted TPB; because it is the most commonly used in healthcare and provides a useful framework to understand the key factors that play a role in people's behaviours [29].

III. PROPOSED RESEARCH MODEL AND HYPOTHESES

The proposed research model uses the TPB as a theoretical framework for the analysis of the motivating factors that affect the knowledge sharing behavior among stakeholders in Jordanian hospitals. Figure (2) presents the research model.

Network hypotheses can be assumed based on the association among the variables theorized after formulating the theory. These hypotheses are tested to determine the actual relevance of the problem. Hypotheses refer to informed guesses or predictions in accordance with the presumed association between two or more variables [30]. The

hypotheses generated for this study are presented in the following sections.

A. Antecedents of Knowledge Sharing Behavior

The knowledge sharing behavior of knowledge workers is determined by their intention to share their knowledge and their PBC. Knowledge sharing behavior refers to the extent to which knowledge workers share their knowledge with their fellow workers [24]. Intention determines the willingness of an individual to engage in knowledge sharing. In the TPB, a positive intention equates with a high knowledge sharing tendency. Thus, we propose the following hypothesis:

H1 - A high level of intention toward knowledge sharing leads to great knowledge sharing behavior.

The aspects of Perceived behavioral control (PBC) are pre-dispositional factors associated with the beliefs of an individual about the anticipated availability or unavailability of crucial sources and opportunities that could facilitate or hinder knowledge sharing [31]. The perceived control over behavior shapes the knowledge sharing behavior of an individual, especially when the PBC of an individual matches the actual control [24]. Knowledge workers with increased beliefs in the availability of resources and opportunities are likely to predict minimal barriers and perceive great control over their behavior.

H2 - A high level of behavioral control toward knowledge sharing leads to great knowledge sharing.

B. Antecedents of Knowledge Sharing Intention

In the TPB model, individuals' perception, subjective norm, and PBC determine their behavioral intentions [24].

The attitude toward knowledge sharing is rooted on an individual's values that sustain or inspire behavior. This attitude is related to the level of an individual's favorable and/or unfavorable reactions toward knowledge sharing within the organization [32]. Individuals' intention to share knowledge can be strengthened with an increase in their behavioral predisposition to share knowledge. Thus, we propose the following hypothesis:

H3 - A favorable attitude toward knowledge sharing increases the intention to share knowledge.

In the TPB model, normative beliefs generally lead to subjective norm which pertains to the perception of individuals that they are expected by other associated and significant members to demonstrate a behavior of attention [24]. Numerous studies have revealed that in addition to senior managers' command over staff settlement guidelines, performance assessment, and employment progression, they initiate knowledge management activities. In this case, team members are likely to choose to engage in knowledge sharing in accordance with the management's expectations [31]. Subjective norm has been found to be an essential prerequisite to behavioral intention [18], [33]. Thus, the normative beliefs of employees about the expectations of the management and the professional team have a beneficial effect on their intention to share knowledge.

H4 - A high level of subjective norm that supports knowledge sharing leads to the increased intention to share knowledge.

PBC springs from control beliefs and the anticipated availability or unavailability of the resources and opportunities that are necessary to facilitate or impede knowledge sharing [24]. The factors that facilitate knowledge sharing have technological and non-technological aspects, including the convenient access to resources, technology, and time. According to the TPB, PBC boosts individuals' intentions because individuals tend to accomplish only the tasks that they believe they can perform successfully. In this way, PBC comprehensively predicts an individual's intention to utilize technology [33].

H5 - A high level of behavioral control toward knowledge sharing intensifies the intention to share knowledge.

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C. Antecedents of Knowledge Sharing Attitude

An attitude is formed from a collection of behavioral beliefs. Thus, the attitude toward knowledge sharing is depicted in the research model to have a direct effect on the intention to share knowledge. These behavioral beliefs are.

Education level: Only a small number of studies have empirically investigated the function of an individual's personality in knowledge sharing despite the known predisposition of individuals to specific attitudes and behaviors at work [34]. Riege (2005) [6] and Arzi, Rabanifard, Nassajtarshizi, and Omran (2013) [35] found that there are a causal relationship between educational level and the likelihood of knowledge sharing. Sun and Scott (2005) [36] reported that education level positively influences knowledge sharing. Chen and Cheng (2012) [37] indicated the impact of education level on positive attitudes toward knowledge sharing. Literature reviewed above leads to H6:

H6 - High education level positively affects the knowledge owners' attitude toward knowledge sharing.

Perceived reciprocal benefits: Reciprocity is deemed beneficial because of its close relation with feelings of personal responsibility, appreciation, and trust. When individuals engage in knowledge sharing, they expect that their request for knowledge in the future will be granted by their peers [38]. Wasko and Faraj (2000) [39] found that individuals who share knowledge in virtual communities are those who believe in reciprocity. Moreover, Kankanhalli, Tan, and Wei (2005) [40] considered reciprocity as an obvious motivator of an individual's knowledge contribution to electronic knowledge databases given weak norms that support sharing. Accordingly, the study proposes the following hypothesis:

H7 - Perceived reciprocal benefits positively affect a knowledge worker's attitude toward knowledge sharing.

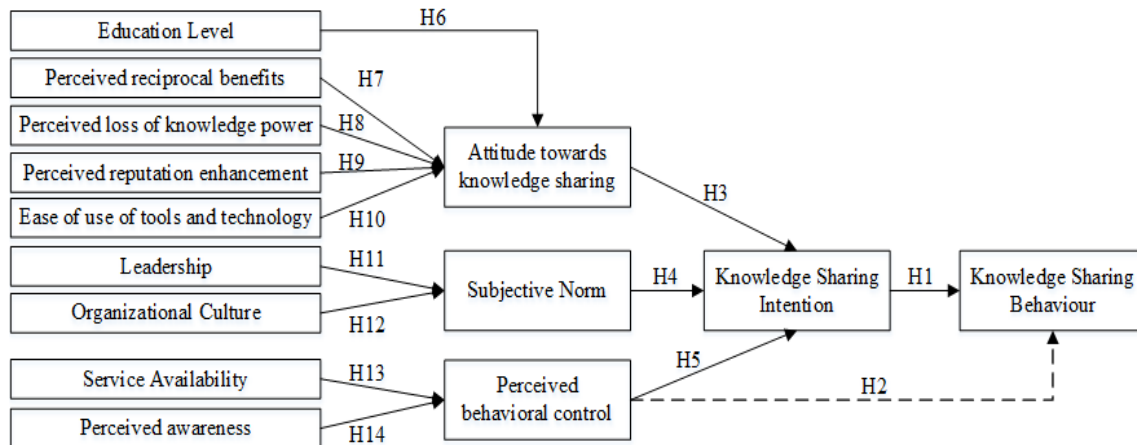


Figure II. Conceptual research model

Perceived loss of knowledge power: Studies have indicated that individuals forego a sense of ownership to the valuable knowledge they share and thus lose corresponding benefits [41]. Given that knowledge equates with power, individuals may logically fear losing this power when they engage in knowledge sharing [38]. This association suggests a negative relationship between knowledge power loss and knowledge sharing attitude. Thus, we propose the following hypothesis:

H8 - Perceived loss of knowledge power negatively affects a knowledge worker's attitude toward knowledge sharing.

Perceived reputation enhancement: Today's knowledge economy places premium value on expertise. Thus, employees earn the recognition and respect of others by exhibiting their expertise, which in turn results in an enhanced self-concept [40]. O'Dell and Grayson (1998) [42] studied employees who share their best practices and found that this engagement of employees results from their desire for recognition by other experts and their peers. Meanwhile, Kollock (1999) [43] reported that employees with high technical knowledge enjoy high status in the workplace. Thus, an employee's belief in knowledge sharing as a means to enhance professional reputation and status is theorized as a crucial motivational factor for this employee to share valuable information.

H9 - A perceived improvement in reputation positively affects a knowledge worker's attitude toward knowledge sharing.

Ease in the use of tools and technology: refers to "the degree to which a person believes that using a particular system would be free of effort" [44]. According to Davis (1989) [44], "All else being equal, we claim, an application perceived to be easier to use than another is more likely to be accepted by users." Ramayah, Yusoff, Jamaludin, and Ibrahim (2009) [45] argued that individuals become motivated to use a system when this system is easy to use. Lu, Huang, and Lo (2010) [46] observed a significantly positive effect of perceived ease of use on knowledge sharing behavior. This finding is the basis of H10.

H10 - Perceived ease of use positively affects the attitude of stakeholders toward knowledge sharing.

D. Antecedents of Subjective Norm

Leadership: Srivastava, Bartol, and Locke (2006) [47] emphasized that knowledge sharing within a team is not an automatic occurrence and that team leader play a crucial role in realizing knowledge sharing. Srivastava, Bartol, and Locke (2006) [47] discussed the key role of leadership in encouraging and nurturing knowledge sharing behaviors. In the context of team cohesion, leadership strongly affects knowledge sharing [48]. Fullwood (2013) [49] observed neutral responses to the quality of leadership contribution in support of knowledge sharing. On the basis of the literature review and the preliminary survey, we propose the following hypothesis:

H11 - Leadership support has a significant positive effect on the subjective norm to share knowledge.

Organizational culture: is a contributing factor to knowledge sharing success in organizations [17] and to the values, behaviors, and beliefs of individuals belonging to the organization [50]. McDermott and O'Dell (2001) [51] emphasized the great value of culture as a result of its relation to the actions and expectations of individuals in the collective unit; thus, people generally act in accordance with the core values of the organization. We conclude that individuals will more openly share their knowledge and experience in an organization with an established culture of sharing knowledge than in settings where they are forced to share knowledge because of mere professional interaction.

H12 - Organizational cultures have a significant relationship with knowledge sharing behavior.

E. Antecedents of Perceived Behavioral Control

Service Availability: The ICT on knowledge management systems assists in collective functions and facilitates knowledge sharing activities and is thus widely applied in different settings. Several studies have identified the effect of service availability on knowledge sharing [52], whereas others have reported no such effect [38]. We derive the following hypotheses:

H13 - High service availability positively influences a knowledge worker's PBC toward knowledge sharing.

Perceived awareness: Not all organizational members understand or realize the significance and relevance of knowledge [53]. Knowledge sharing significantly improves with heightened awareness, but developing such awareness is difficult [54]. In organizations with low awareness [55], members do not understand the importance of knowledge in surpassing competitors [26].

H14 - Awareness positively influences PBC toward knowledge sharing.

IV. METHODOLOGY

This study utilizes a structured survey method. The survey questionnaire was created based on the previous studies. The subject unit of survey analysis is the individual who has been a stakeholder in Jordanian hospitals. After the survey questions were written, the survey was first tested through interviews with experts in constructing survey questionnaire for the content validity. During such interviews, the interviewees were asked to provide suggestions and feedbacks to improve the clarity of the survey and the questions were then refined based on the suggestions received.

A pilot study was conducted from November 12 to 16, 2013, where a total of 85 questionnaires were distributed personally to stakeholders in the Jordanian hospitals. Only 42 questionnaires were returned. The feedbacks revealed that the respondents completed the questionnaire within 17 minutes, which was within the time frame of 10–20 minutes suggested by Chua (2010) [56]. Meanwhile, Reliability testing was performed for all the other 56 items except the demographic ones. The reliability testing was constructed separately for each measurement. According to the results, all the scales met the required Cronbach's alpha and were considered reliable [57].

After the pilot study, the questionnaire was distributed to 1,800 of stakeholders from November 20 to December 28, 2013. A total of 504 questionnaires were returned. Only 417 out of 504 responses questionnaire are valid and used for data analysis.

V. DATA ANALYSIS

This study chose partial least squares (PLS) as the primary data analysis technique. Barclay, Higgins, and Thompson (1995) [58] argued that PLS is a latent SEM technique that assesses the psychometric properties of the scales used to measure theoretical constructs and estimates the hypothesized relationships among these constructs. PLS was chosen over alternative SEM techniques, such as LISREL, AMOS, and EQS, for the following reasons stated by Hair (2009) [59]: 1) Poor measurement is one of the major obstacles to obtain LISREL, AMOS, and EQS solutions; 2) PLS handles both formative and reflective constructs; 3) PLS is used for both exploratory work and prediction, whereas LISREL, AMOS, and EQS are used in exploratory work only; 4) PLS can also be a useful way to immediately explore numerous variables to identify sets of variables (principal components) that can predict certain outcome variables; and 5) PLS does not face the

issues of model complexity that LISREL, AMOS, and EQS do and is therefore able to handle a large number of measured variables and/or constructs easily.

A. Assessment of the Measurement Model

The proposed research model was tested by conducting data analyses for the measurement and structural models. The hypothesized structural model was estimated using SmartPLS 2.0 with the PLS method [60]. For significance testing, bootstrapping re-sampling method was used. Meanwhile, the researchers conducted internal consistency reliability testing and construct validation (i.e., discriminant and convergent validation).

1) Internal consistency reliability testing

Internal consistency was calculated using Cronbach's α and Fornell's composite reliability. The results are shown in Table 1.

The Cronbach's reliability coefficients for all constructs were larger than the minimum acceptable score, which is 0.60. The composite reliability scores for all constructs were also greater than 0.70, which implies internal consistency. Composite reliability is considered to be a good measure of internal consistency because it relies on actual loadings, contrary to Cronbach's α , which assumes that all items have the same weight [61]. Therefore, the indicators suggest a high internal reliability for the data.

2) Construct validation

Construct validity specifies the relationship between indicators and the latent construct that they intend to measure. Assessing the construct validity requires examining two types of validities, namely, convergent and discriminant [62]. Convergent validity indicates the degree to which theoretically similar constructs are highly correlated with each other [63]. By contrast, discriminant validity indicates the degree to which a given construct differs from other constructs. These two validities provide evidence regarding the goodness of fit of the measurement model.

Convergent validity: AVE was examined to explain the degree to which the variance of the measurement items can be accounted for by the constructs. AVE should be greater than 0.5. All constructs exhibited scores greater than 0.5 for AVE, which means that the construct accounted for at least 50% of measurement variance [64]. As indicated in Table 1.

In order to evaluate the discriminant validity, the square root of each variable's AVE value was compared with the correlation coefficients between variables. In Table 2, for each variable, the square root of the AVE value was larger than the correlation coefficient values with any other variable, thereby verifying the discriminant validity of this study.

TABLE I. ASSESSMENT OF THE MEASUREMENT MODEL

	AVE	Composite Reliability	Cronbach's Alpha	Communality	Redundancy
AT	0.6596	0.8856	0.8339	0.6596	0.0346
EUTT	0.7125	0.9081	0.8778	0.7125	0
Education	1	1	1	1	0
KSI	0.6861	0.8673	0.7688	0.6861	0.0721
KSB	0.5723	0.8424	0.7515	0.5723	0.1901
L	0.9063	0.9666	0.9475	0.9063	0
OC	0.9717	0.9904	0.9857	0.9717	0
PA	0.8437	0.9148	0.8488	0.8437	0
PBC	0.7372	0.9177	0.8787	0.7372	0.1312
PLKP	0.7107	0.8793	0.7929	0.7107	0
PRB	0.7824	0.9151	0.8876	0.7824	0
PRE	0.7356	0.9173	0.8892	0.7356	0
SA	0.9233	0.9796	0.9723	0.9233	0
SN	0.5695	0.8409	0.749	0.5695	0.0497

TABLE II. AVE AND CORRELATION BETWEEN CONSTRUCTS

	AT	EUTT	EDU	KSI	KSB	L	OC	PA	PBC	PLKP	PRB	PRE	SA	SN
AT	0.81													
EUTT	0.26	0.84												
EDU	0.18	0.07	1											
KSI	0.36	0.39	0.25	0.83										
KSB	0.43	0.31	0.07	0.65	0.76									
L	0.1	0.13	0.01	0.38	0.37	0.95								
OC	-0.36	-0.01	-0.04	0.06	-0.05	-0.03	0.99							
PA	-0.16	0.15	0.04	0.43	0.27	0.25	0.54	0.92						
PBC	0.28	0.28	0.06	0.61	0.69	0.6	-0.06	0.51	0.86					
PLKP	-0.33	-0.08	0.16	-0.09	-0.15	0.15	-0.16	0.08	0.09	0.84				
PRB	0.37	0.18	-0.05	0.2	0.21	-0.19	-0.03	0.21	-0.01	-0.31	0.88			
PRE	0.14	0.37	0.12	0.3	0.29	0.26	0.03	0.2	0.37	-0.01	-0.06	0.86		
SA	0.27	0.25	0.22	0.59	0.52	0.41	0.29	0.58	0.62	0.06	0.16	0.28	0.96	
SN	0.1	0.51	0.1	0.38	0.3	0.3	-0.09	0.06	0.32	0.1	0	0.27	0.3	0.75

B. Evaluation of Structural Model

Given the positive results for the analyses of discriminant validity, internal consistency reliability, and convergent validity, the structural model, in which the assumed relationships between latent variables are specified, can be evaluated. We estimated the R2, path coefficients, and effect

sizes. The R2 and path coefficients provide information on the model efficiency. The R2 indicates the portion of explained variance in relation to overall variance. The R2 values may be between 0 and 1. Table 3 shows the values obtained for the R2 and path coefficients. In general, the R² values should exhibit high scores to confirm whether the proposed model adequately

represents the variance of an endogenous variable. However, all relevant parameters must be included in the model. The results shown in Table 3 suggest a great low to R2 value for subjective norm (SN), where the R2 value is 0.097, which indicates that the subjective norm measure is one of several determinants of value for the stakeholders. The perception value may be affected by management guidelines, performance assessment, and experiences. Nevertheless, the high R2 values for knowledge sharing behavior (KSB, R2 = 0.563), knowledge sharing intention (KSI, R2 = 0.449), perceived behavioral control (PBC, R2 = 0.415), and attitude toward knowledge sharing (AT, R2 = 0.276) for stakeholders indicate that the model provides good explanations for their variance. By contrast, the lower R2 values for perceived process enjoyment and perceived process effort indicate weaker representation.

The standardized path coefficients ranged from 0.0059 to 0.65. The overall fit of the model was good.

C. Tests of hypothesis

The obtained path coefficients in pink color which are presented in Table 3, shows that the hypothesis tests supports 12 out of 14 of the assumed relationships. The structural model and obtained R2 values and path coefficients are presented in Figure 3.

VI. RESULTS AND DISCUSSION

The research results support Hypothesis 1. Our research results confirmed the positive relationship between intention toward knowledge sharing and knowledge sharing behavior statistically with the coefficient path = 0.361 and t-value = 9.753 at $p < 0.01$ significance level. The result is consistent with those of Bock and Kim (2001) [65] and of Wu and Zhu (2012) [38]. However, intention toward knowledge sharing explains only 1.6 percent and 41 percent of the variance in knowledge sharing behavior in Brock and Kim (2001) [65] and Wu and Zhu (2012) [38], respectively, whereas this factor explains approximately 56 percent of the same variance in this study. The result also supported Hypothesis 2 with the path coefficient, coefficient path = 0.650 and t-value = 15.962 at $p < 0.01$ indicating that the Higher level of behavioral control leads to enhance the knowledge sharing behavior. The study concludes that knowledge sharing is not largely under volitional control. Stakeholders tend to engage in knowledge sharing if they have the time, resources, and opportunities to perform such activity.

Hypotheses 3, 4 and 5 are supported by our data results. The statistical results indicate that attitude toward knowledge sharing, subjective norm, and perceived behavioral control positively affect on the intention of knowledge sharing. The study results support Hypotheses 3, 4 and 5 with the coefficient path = 0.205 and t-value = 4.073 at $p < 0.01$ level; with the coefficient path = 0.203 and t-value = 3.928 at $p < 0.01$ level; and with the coefficient path = 0.489 and t-value = 10.276 at $p < 0.01$ level, respectively. This finding is consistent with those of previous TPB-related research [33], [38], [65]. These three factors collectively explain approximately 45 percent of the variance in the behavioral intention to share knowledge.

The study has also examine the education level, perceived reciprocal benefits, perceived loss of knowledge power, perceived reputation enhancement, and ease of using tools and technology, as antecedents of attitude. Only four of these antecedents, namely, education level (Hypothesis 6, with coefficient path = 0.216 and t-value = 4.299 at $p < 0.01$), perceived reciprocal benefits (Hypothesis 7, with coefficient path = 0.280 and t-value = 5.238 at $p < 0.01$), perceived loss of knowledge power (Hypothesis 8, with coefficient path = -0.266 and t-value = 6.066 at $p < 0.01$), and ease of using tools and technology (Hypothesis 10, with coefficient path = 0.139 and t-value = 2.66 at $p < 0.01$), are identified as significant predictors of the knowledge sharing attitude of knowledge workers. This finding is consistent with those of [37]–[39], [46]. Besides, perceived reputation enhancement (Hypothesis 9) is not supported because coefficient path = 0.079, t-value = 1.39, and $p > 0.10$. It does not produce a substantial effect on knowledge sharing when all the above mentioned motivators are included in the analysis. This finding neither agrees with social exchange theory nor is consistent with those of [39], [40], who all identify perceived reputation enhancement as an important motivator for participating in knowledge sharing. However, this finding is consistent with those of [66].

Likewise, the study results supported Hypothesis 11 but did not support Hypothesis 12, which measure the effect of leadership and organizational culture on subjective norm. Only leadership is found to produce an effect on knowledge sharing with coefficient path = 0.298 and t-value = 6.469 at $p < 0.01$. This finding is consistent with those of [49]. As well as, organizational culture is not supported despite t-value = 1.849 and $p < 0.10$. Meanwhile, the coefficient path value negatively affects the stakeholder's behavior toward knowledge sharing, a result that is contrary to what has been postulated, which is, -0.080. This finding is consistent with those of [67]. These findings underscore the important of leadership on enhancing the knowledge sharing behavior among stakeholders in Jordanian hospitals using social networks.

Our research results support Hypothesis 13 and 14. The path coefficients and t-statistics for Hypotheses 13 and 14 are statistically significant. Because the coefficient path = 0.484 and t-value = 13.687 at $p < 0.01$ for Hypothesis 13. As well as for Hypothesis 14 the coefficient path = 0.228 and t-value = 6.852 at $p < 0.01$. This finding is consistent with [38], [53]. These findings assert that the availability of social networks reduces the barriers to knowledge sharing and encourages the stakeholders in Jordanian hospitals to share their knowledge. Additionally, the study suggests that the awareness plays an important role in encouraging stakeholders to consider the usefulness and the benefits of knowledge that they provide to their co-workers.

VII. CONCLUSION

This study had proposed and evaluates a conceptual model for knowledge sharing based on TPB. The study identified nine of critical factors: education level, perceived reciprocal benefits, perceived loss of knowledge power, perceived reputation enhancement, ease in the use of tools and technology, leadership, organizational culture, service availability and perceived awareness that may impact the knowledge sharing behaviors. This study has identified the relations between these factors by integrating some theoretical models on human behavior designed to clarify the mechanism of knowledge sharing. With an understanding of the entire knowledge sharing process, the study was used TPB model to explore and determine the impact of new identified factors on the knowledge sharing behaviour. A questionnaire survey was performed to measure the effect of the factors on the knowledge sharing behaviour. Twelve out of the 14 proposed hypotheses are eventually supported. The predictors explained about 44.9 percent of the variance in the behavioral intention to share knowledge and 56.3 percent variance in the actual knowledge sharing behavior. The insights from this research are expected to influence the direction of future research in knowledge sharing via social networks. Future researchers can benefit from this research by providing them with promising concepts and mechanisms for improving and enhancing the knowledge sharing behavior using social networks that can overcome issues in social networks and usability. This study also offers additional research opportunities with respect to the implementation and expansion of social networks into new research areas.

TABLE III. R² OF LATENT VARIABLES

Perceived behavioral control	R ²	Indicators of the LV	Coefficient	T Statistics
AT	0.276	EUTT	0.138621	2.66 ** (S)
		Education	0.215834	4.299 ** (S)
		PLKP	-0.265781	6.066 ** (S)
		PRB	0.279707	5.238 ** (S)
		PRE	0.079022	1.39 (R)
KSI	0.449	AT	0.205078	4.073 ** (S)
		EUTT	0.028428	2.092 *
		Education	0.044263	2.695 **
		L	0.060417	2.926 **
		OC	-0.016318	1.617
		PA	0.111267	6.429 **
		PBC	0.488909	10.276 ** (S)
		PLKP	-0.054506	3.445 **
		PRB	0.057362	3.397 **
		PRE	0.016206	1.665
		SA	0.236839	6.987 **
		SN	0.202908	3.928 ** (S)
KSB	0.563	AT	0.073967	3.637 **
		EUTT	0.010253	1.938
		Education	0.015965	2.592 **
		KSI	0.360678	9.753 ** (S)
		L	0.021791	2.748 **
		OC	-0.005885	1.576
		PA	0.147861	6.469 **
		PBC	0.649706	24.157 ** (S)
		PLKP	-0.019659	3.222 **
		PRB	0.020689	3.204 **
		PRE	0.005845	1.671
		SA	0.314733	10.812 **
PBC	0.415	PA	0.227582	10.276 ** (S)
		SA	0.484423	13.687 ** (S)
SN	0.097	L	0.297758	6.469 ** (S)
		OC	-0.08042	1.849 (R)

*: p-value = 0.05; **: p-value = 0.01; hypothesis supported = S; hypothesis rejected = R

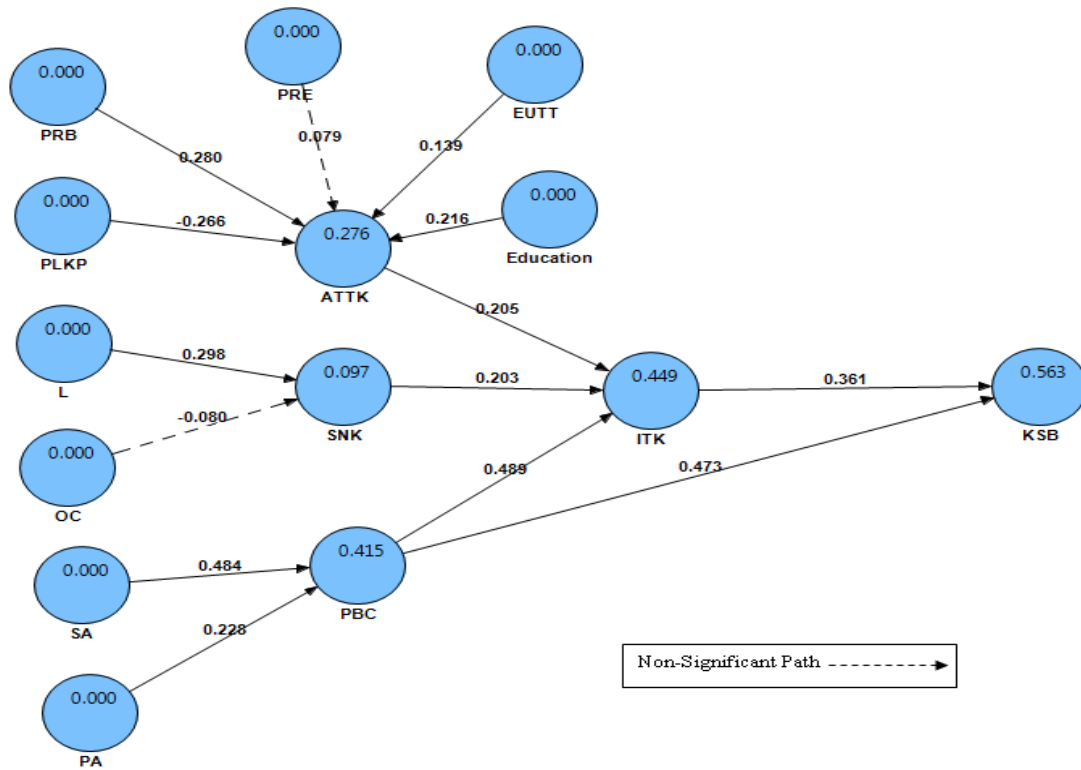


Figure III. Estimated models with values for R2 and path coefficients

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