Investigation of Factors Affecting Online Knowledge Sharing of Knowledge Training Centers in the MENA Region

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Abstract: The study applied Unified Theory of Acceptance and Use of Technology (UTAUT) Model in the voluntary context of online knowledge sharing of knowledge training centers in the MENA region. Quantitative data were collected from a sample of 296 managers. Statistical analysis of the study's model was conducted using structural equation modeling technique. Empirical investigation of the model's hypotheses has indicated that knowledge training centers managers' "intention to use" online knowledge sharing is dependent on performance expectancy and effort expectancy, while the social influence has insignificant effect on online knowledge sharing. On the other hand, knowledge training centers managers' usage behavior depends on facilitating conditions and intention to use. This study empirically validated the UTAUT model in the context of knowledge training centers in the MENA region, especially within Arab culture, which represents a group of developing countries which did not have adequate studies that could explain the usage behavior of new technology.

Keywords: Online Knowledge Sharing, MENA Region, Knowledge Training Centers, UTAUT.

I. INTRODUCTION

As a result of the expansion of markets, the increasing demand of additional information and knowledge in different occupations, and the emergence of new organizations, managers have had to respond to these changes by emphasizing the aspect of "knowledge". It is the most strategically significant resource for organizations, which allows them to gain a greater competitive advantage and also assists in developing superior performance amongst staff (Ismail, Mohamed, Sulaiman, Mohamad, and Yusuf, 2011). Furthermore, it is difficult, if not impossible, to maximize the value of knowledge resource without adequate understanding of how to manage knowledge throughout the organization (Sharratt and Usoro, 2003). Since the mid-1990s, the concept of knowledge management has been steadily evolving and transforming, especially when numerous firms were challenged with having overlapping information. With time, knowledge management has come to play a vital business function for a number of organizations, as they have appreciated the significant role it serves in establishing a competitive advantage. In other words, organizations understand that knowledge management provides a competitive advantage through the use of efficient management of

intellectual resources to create, spread, and apply all aspects of knowledge to achieve its overall goals (Grover and Davenport, 2001). How to proportion knowledge management has become a major controversy. Previously, knowledge sharing among practitioners was typically understood in the context of traditional learning approaches such as formal training workshops or seminars. One apparent challenge with knowledge is that it is often stored in individuals and may leave the company when the employee departs. The challenge for organizations, hence is how they can best benefit from an employee's knowledge (even in the case of an employee leaving) and thereafter build upon the legacy of knowledge in order to achieve their business goals and outcomes. With the expansion of ICT, more organizations are centralizing on the advancement of online business communities to help facilitate a better flow of knowledge between employees (Blascovich and McCall, 2013). This was proven and supported by several researchers (Hara and Hew, 2007; Zamiri and Baqutayan, 2012). Moreover, Kasim, Yaacob and Malim (2013) mentioned that without new technology, most knowledge sharing practices would become less effective because technology supports to establish, acquire, formulate, attain, utilize, and proportion the intellectual capital of the organization.

The underlying problem is that factors affecting employee's behavior to actively share online knowledge are not fully understood or known, and empirical evidence for the influence of these factors is fragmented (He and Gunter, 2015). Numerous models have been constructed to investigate individuals' acceptance and intention to endorse contemporary technologies in a world that is becoming increasingly dependent on information systems. Venkatesh, Morris and Davis (2003) developed UTAUT which affirms that performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC) are

direct determinants of behavioral intention (BI) or usage behavior (UB). UTAUT is a comprehensive model proposed by Venkatesh et al. (2003) in relation to technology acceptance. UTAUT is an integrated combination of previous models, where five factors from these models formed performance expectancy variable consisting of perceived usefulness, external motivation, job fit, relative advantages and outcome expectations (Venkatesh and Davis, 2000). UTAUT was able to account for 70% of the technology acceptance behavior, while the initial eight models explained between 17% and 53% of behavioral intention to use, Thus, it is a representative model, implementing an infrastructure to conduct subsequent research in the information systems arena (Urumsah, Quaddus and Galbreath, 2011). As a result this study aims to investigate the validity and application of the UTAUT model within the MENA region by examining the ramification of performance expectancy, effort expectancy, social influence, and facilitating conditions on managers' behavioral intention to use online knowledge sharing in the knowledge training centers.

Research locale

As reported by Telecentre Foundation (TCF) website (http://community.telecentre.org), Knowledge Training Centers (Telecenters), managed by Telecentre.org, are public establishments (knowledge stations or knowledge training centers) to access the Internet and other digital technologies. Telecentre.org Online Community is made up of people from different parts of the world to help connect members and facilitate the widespread sharing of ideas, resources, learning and best practices. The Telecentre.org program has been pivotal in implementing Telecentres networks in more than 40 nations. Originally governed by the International Development Research Centre (IDRC) of Canada, the program is now administered by Telecentre. org Foundation. Telecentre.org Middle East North Africa (MENA) structure is a virtual

network which was established in 2008 as a consequence of a partnership with Telecentre. org. The network, being administered from Cairo, Egypt at the headquarters of the Egypt ICT Trust Fund, is a prominent body promoted by the United Nations Development Program of Egypt and the Ministry of Communication and Information Technology. Having more than 1,500 members who are individual leaders within the Arabic speaking nations makes up the organization. The researchers elected to execute the study in four Arab nations; Jordan, Egypt, Syria and Oman, being the most active in the arena of information and communication technology (ICT).

II. THEORETICAL FRAMEWORK
Knowledge sharing
There have been many developments in the definition of knowledge by scholars over the decades. Knowledge and information are two different concepts, sometimes used interchangeably (Wang and Noe, 2010). As scholars have not agreed on a clear definition, the researchers will use the definition given by Wang and Noe (2010) and Ordaklou (2013) as it is based on an extensive analysis of the knowledge sharing literature. Knowledge is data processed by individuals, including notions, adroitness and acumen pertinent for individual, team and organizational performance (Wang and Noe, 2010; Ordaklou, 2013). Knowledge sharing is defined as proliferating the knowledge and distributing it within organizations (Ryu, Hu and Han, 2003; Lin and Chen, 2009). The concept has been acknowledged as functioning as an important means of improving the performance of organizations (Chaston and Mangles 2000; Fuller-Love and Thomas 2004; Hughes, O'Regan and Sims 2009; Watson 2007). Scientific literature has not yet agreed on a definition of knowledge sharing behavior (Yi, 2009). The researchers concur with the definition of Yi (2009) claiming that knowledge sharing behavior, as a component of individual

behaviors, implicates that distributing work-related knowledge and adroitness with other employees in an organization can contribute to the eventual performance of the organization. Although technology is not the pivot of knowledge management, it remains a fundamental role as a facilitator in enhancing the arena of knowledge sharing among employees (Anderson, 2000). Accordingly, the term "online knowledge sharing systems" refers to any kind of IT system that employees of Knowledge Training Centers have to use in mediating communication (e.g. Email, chat, video conferencing, and websites) which helps in sharing one's work-related knowledge and expertise with other members within the organization.

The Unified Theory of Acceptance and Use of Technology (UTAUT)
Venkatesh et al., (2003) constructed a new model, UTAUT, founded on the most perceptible constructs from the technology acceptance theories and models as illustrated in Table 1. This model amalgamates four core determinants of intention and usage with four moderators of fundamental relationships (Figure 1).

Performance expectancy, effort expectancy, social influence, and facilitating conditions comprise the independent variables whereas usage behavior is the independent variable and behavioral intention is a mediator variable between the independent and the dependent variables. Other factors such as gender, age, experience and voluntariness of use are hypothesized to moderate the impingement of the four core variables on usage intention and behavior. It was claimed by Venkatesh et al., (2003) that the objective of these moderating variables is to reiterate that there is variance between personal acceptance and strategy of utilizing the system under conflicting environments and scenarios.

Table 1 Determinant of UTAUT

UTAUT Determinants	Sub-Determinant	Source Of Integrated Model
Performance Expectancy	Perceived Usefulness	TAM/TAM2/C-TAM-TPB
	Extrinsic Motivation	MM
	Job-Fit	MPCU
	Relative Advantages	IDT
	Outcome Expectancy	SCT
Effort Expectancy	Ease Of Use	TAM/TAM2
	Complexity	MPCU
Social Influence	Subjective Norms	TRA/TAM2/TPB/DPTB/C-TAM
	Social Factors	MPCU
	Image	IDT
Facilitating Conditions	Behavioral Control	TPB/DTPB,C-TAM-TPB
	Facilitating Conditions	MPCU
	Compatibility	IDT

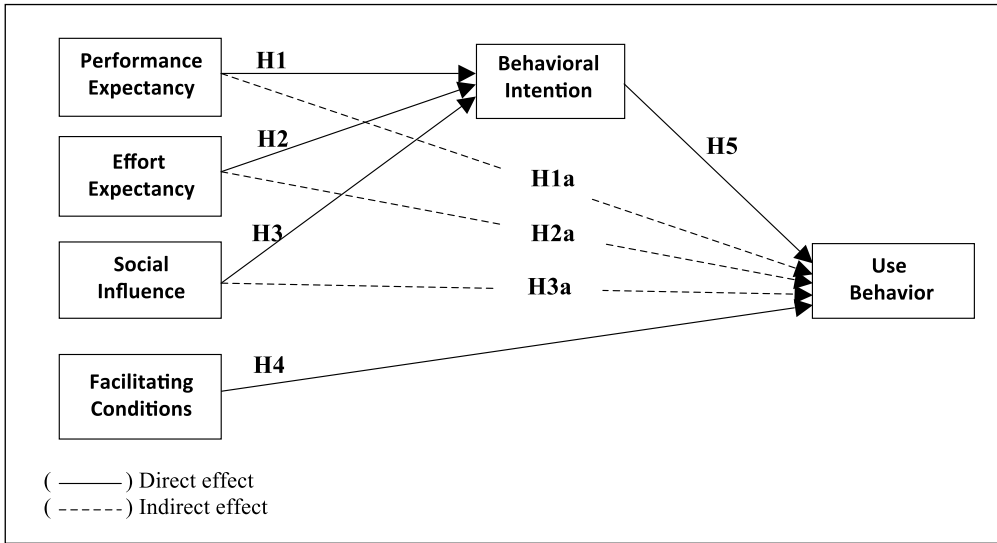Source: Venkatesh et al., (2003).

Figure 1 UTAUT
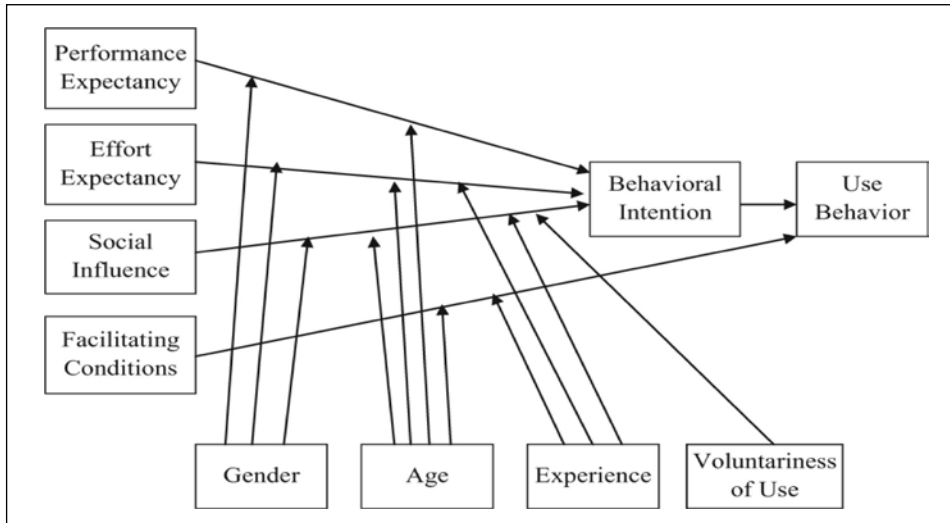
Study Model and Hypotheses Development
Because using sharing knowledge is voluntary and not mandatory, and also current research was a cross-sectional one, moderating variables of voluntariness and experience were not considered in current research. Several previous studies conducted within MENA region (e.g. Saudi Arabia, Qatar) invistegated the UTAUT model showed that gender, age and experience were insignificant in terms of moderating the relationship between behavioral intention and its antecedents. For example, Al-Gahtani, Hubona, and Wang (2007) in their study conducted in Saudi Arabia found that gender did not exhibit significant interactions with any predictor latent variable. Al-Shafi and Weerakkody (2009) found that gender, age, and Internet experience were non-significant on citizens behavioral intention of the e-government services in Qatar. Alshehri, Drew and AlGhamdi (2012) found that age and gender were insignificant in terms of moderating the behavioral intention to use e-government services in Saudi Arabia. Therefore, the researchers will ignore the effect of these moderators in this study (Figure 2).

Figure 2 Study Model

Performance expectancy:

Performance expectancy (PE) is defined as the degree to which an individual believes that using a system will help him or her to attain gains in job performance (Venkatesh et al., 2003). In the context of knowledge sharing, performance expectancy refers to the extent to which a person believes that contributing to knowledge sharing using available capabilities within the organization improves job performance (Kulkarni et al., 2007). From a potential knowledge sharer's viewpoint, the perceived usefulness of knowledge sharing should escalate to the capaciousness that the diverse contacts have distributed the knowledge and conveyed their inference (Brockman and Morgan, 2003; Kankanhalli et al., 2005). Li (2010) has found that the performance expectancy is the strongest driver to share knowledge, where performance expectancy was a critical factor influencing participants' knowledge sharing. The current researchers seek to verify the aforementioned and accordingly, the following hypotheses are proposed:

H1: Performance expectancy has a significant direct positive effect on managers' behavioral intentions to use online knowledge sharing.

H1a: Performance expectancy has a significant indirect positive effect on managers' usage behavior of online knowledge sharing through their behavioral intentions.

Effort expectancy

This component refers to the effort that an individual expects when utilizing a system (Venkatesh and Davis 1996) or the extent to which an individual considers that utilizing a particular system would be effortless (Davis, 1989). Previous researches suggest that effort expectancy was apparent in forming an individual's behavioral intention to using new technology (Zhou et al., 2010; Venkatesh et al., 2003; Venkatesh and Davis, 2000) and is currently one of the most demanding factors which contribute to accepting technology (Orji et al., 2010). The findings of Sundaravej (2010) validate the UTAUT model in the case of educational technology usage and the results indicated that effort expectancy was the strongest construct affecting students' intentions towards educational technology usage. Mariaka and Oboko (2009) conducted a study to comprehend the intention to use Computer Assisted Audit Tools and Techniques (CAATTs) using UTAUT. The

research has proven that effort expectancy is positively related to intention to use CAATTs, which implies that auditors who perceived high levels of ease of use of CAATTs would have a significant motivation to utilize it. On the other hand, Wu, Tao and Yang (2007) claimed that effort expectancy may be a decisive condition, but not acceptable criterion to enhance consumers' intention to adopt. This is an extraordinary exception to general technology acceptance scenarios and thus is deserving of the attention of the online training center companies. Current research advocates that whether the format of knowledge sharing media, such as virtual social media, can permit the user to transverse it easily or not, is one of the fundamental success factors of acknowledging the technology. Accordingly, consistent with previous tests of Technology Acceptance Model (TAM) and UTAUT model, it is anticipated that effort expectancy will dramatically affect intention to utilize online knowledge sharing. Therefore, the following hypotheses are proposed:

H2: *Effort Expectancy has a significant direct positive effect on managers' behavioral intentions to use online knowledge sharing.*

H2a: *Effort Expectancy has a significant indirect positive effect on managers' usage behavior of online knowledge sharing through their behavioral intentions.*

Social influence
Social influence refers to the extent that an individual senses that the person who is influential to that individual thinks that the new system should be utilized (Venkatesh and Davis, 1996). Social influence plays an assertive role in the technology acceptance arena (Venkatesh et al., 2003). Prior studies suggested that social influence was significant in shaping an individual's intention to use new technology (Moore and Benbasat, 1991; Venkatesh and Davis, 2000; Thompson, Higgins and Howell, 1991). Several studies

focus on how perceptions of social influence will affect an individual's likelihood to engage in knowledge sharing behavior (Kankanhalli, Tan, and Wei, 2005; Quigley et al., 2007). Social influences are especially significant in the context of a social networking site in the workplace (Sledgianowski and Kulviwat, 2009). Chang and Cheung (2001) found that social influence is positively related to intention to use the Internet at work. Social influence was found to be critical factors in the adoption of an instant messaging service (Glass and Li, 2010). Posey et al. (2010) indicated that positive social influence to use an online social community was found to increase the online community self-disclosure. Therefore, a positive social influence is thought to increase the employee's knowledge sharing intentions (Boh and Wong, 2015). Tanakinjal and Andrias (2012) indicated that there is a significant effect of social influence on university students' behavioral intention toward Web 2.0 and 46.5% of the total variance in behavioral was explained by social influence. Accordingly, the following hypotheses are proposed.

H3: *Social influence has a significant direct positive effect on managers' behavioral intentions to use online knowledge sharing.*

H3a: *Social influence has a significant indirect positive effect on managers' usage behavior of online knowledge sharing through their behavioral intentions.*

Facilitating conditions
Venkatesh and Davis (1996) defined facilitating conditions as the degree of support that an individual attain from the organizational and relevant technical equipment toward utilizing the system such as training, hands-on experience, manual and others (Venkatesh and Davis, 1996). Facilitating conditions was also defined by Venkatesh et al. (2003) as the extent to which an individual considers that an organizational and technical infrastructure is in place to support the utilization of the system.

Several studies have found that facilitating conditions positively impacts actual use directly (Al-Gahtani, Hubona and Wang, 2007; Venkatesh et al., 2003) or through behavioral intention (Taylor and Todd, 1995). Sundaravej (2010) investigated the UTAUT model within an educational technology usage context and the findings illustrated that performance expectancy, effort expectancy, and social influence affect behavioral intention, whereas the facilitating conditions perspective toward utilizing technology, self-efficacy, and apprehension do not influence behavioral intention, but have a strong significance on the actual utilization of technology. Urumsah et al. (2011) examined what compels consumers to use e-services. The findings proved that behavioral intention to utilize is influenced by the effort expectancy, social influence, outcome expectancy, and impetus which in itself is determind by effort expectancy, social influence, trustworthiness, and outcome expectancy. The results demonstrated that actual utilization is strongly motivated by facilitating conditions. Ghalandari (2012) researched the effects of performance expectancy, effort expectancy, social influence and facilitating conditions on compliance of e-banking services in Iran. All four variables, as the results illustrated, had an affirmative and dramatic effect on usage behavior and intention to use e-banking services. In the context of the current research, it is feasible to infer that support from technical personnel and education on utilizing social media, e-mail, web logs to share knowledge, and expertise will be more pivotal than the more classic methods of exchanging information. Therefore, we expect facilitating conditions to dramatically affect the actual utilization of online knowledge sharing. Accordingly, the following hypothesis is proposed:

H4: Facilitating conditions has a significant direct positive effect on managers' usage behavior of online knowledge sharing.

Behavioral Intentions and Usage behavior

Behavioral intention is described as a subjective possibility that an individual will participate in a given behavior (Committee on Communication for Behavior Change in the 21st Century, 2002). Ajzen (1991) argued that behavioral intention reflects how hard a person is willing to try, and how motivated he or she is to perform the behavior. Ajzen (1991) states that according to the theory of planned behavior (TPB) behavioral intention are motivational factors which encapsulate how hard people are inclined to attempt to execute a behavior. TPB advocates that behavioral intention is the most dominant predictor of behavior. For example, in a study undertaken by Pavlou and Fygenson (2006) a meta-analysis of 87 studies proved the predictive power of TPB in online behavior and demonstrated stable alliances between get-information intention and get-information behavior, and between purchase intention and purchase behavior. Consistent to all models drawing from psychological theories, UTAUT proved behavioral intention to have significant influence on technology usage (Venkatesh et al. 2003; Venkateshand Zhang 2010). Accordingly, the following hypothesis is proposed:

H5: Behavioral intention of managers to use online knowledge sharing has a positive effect on their usage behavior of online knowledge sharing.

III. RESEARCH METHODOLOGY
Sampling Design and Data Collection
The targeted population of this research comprised managers of knowledge training centers in the MENA region, which follow telecentre.org foundation. The researchers chose to apply the study in four Arab countries which are among the most active nations in the field of information and communication technology (ICT) according to the 6th Annual Report of the Telecentre.org Foundation (2013); Knowledge Stations Program in Jordan,

Table 2 Selected Sample

Institution name	Country	Number Training Centers	Number of responses
Knowledge Stations Program	Jordan	192	190
Knowledge Access Centers	Syria	52	19
Oman Digital Organization	Oman	50	43
ICT- trust Fund	Egypt	140	44
Total		**434**	**296**

Table 3 Construct Measurement

Construct	No. of Items	Source of Items
Performance Expectancy	4	Tan, 2013; Phichitchaisopa & Naenna, 2013; Yu,2012; Ghalandari,2012
Effort Expectancy	4	Tan, 2013; Phichitchaisopa & Naenna, 2013; Yu,2012; Ghalandari,2012
Social influence	4	Tan, 2013; Phichitchaisopa & Naenna, 2013; Yu, 2012; Tanakinjal & Andrias, 2012; Ghalandari, 2012.
Facilitating Conditions	3	Tan, 2013; Phichitchaisopa & Naenna, 2013; Yu, 2012; Ghalandari, 2012.
Behavioral Intention	3	Tan, 2013; Phichitchaisopa & Naenna, 2013; Yu, 2012; Tanakinjal & Andrias , 2012; Ghalandari, 2012; Chen et al., 2009;
Usage Behavioral	4	Tan, 2013; Ghalandari, 2012; Chen et al., 2009

Knowledge Access Centers in Syria,Oman Digital Organization and ICT-Trust Fund in Egypt. The total number of training centers was 434 as shown in Table (2).

A self-completion questionnaire with closed questions was mailed to the managers of the 434 training centers with a cover letter explaining the aim of the research. The researchers followed up, personally, the questionnaires. The returned questionnaires were carefully examined for completeness. A total of 305 questionnaires were received with 9 questionnaires removed due to incomplete data. Thus, the researchers obtained back 296 usable responses, resulting in a 68.2 % response rate.

Instrument development
The questionnaire was composed of three parts (Appendix A). The first part was about individual characteristics with five questions (gender, institution, region, age, and experience). The second part contained all five constructs in the research model with a total of 18 statements. Several items on each construct were developed and adopted from relevant literature shown in Table 3. All of the items were measured using the five-point Likert scale ranging from: Strongly Agree (5) to Strongly Disagree (1). The last part of the questionnaire measured the actual usage of online knowledge sharing through different electronic means (Website, Email, Data and reporting system, Social networking sites) using a five-point scale ranging from Never (1) to Several times daily (5).
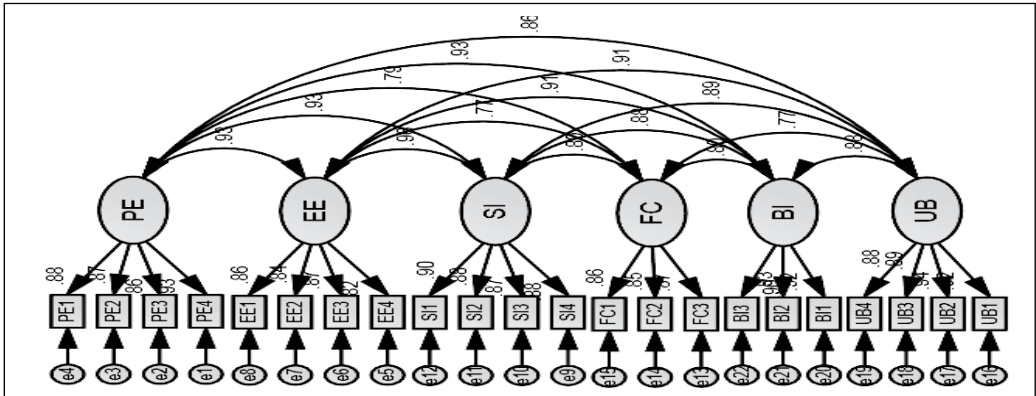
Table 4 Operational Definitions

Variables	Operational definition	Items
Performance Expectancy	The degrees to which an individual believes that online knowledge sharing will help him or her attain gains in job performance.	1-4
Effort Expectancy	The degree of ease associated with the use of online knowledge sharing technologies.	5-8
Social influence	The degree to which an individual perceives that important others believe that he or she should use online knowledge sharing technologies.	9-12
Facilitating Conditions	The degree to which an individual believes that an organization and technical infrastructure exist to support online knowledge sharing usage.	13-15
Behavioral Intention	How hard individuals are willing to try online knowledge sharing technologies.	16-18
Usage Behavioral	Individuals' actual Usage behavior of online knowledge sharing technologies.	19-26

Table 5 Measurement Model Statistics

Constructs	Loading	AVE	CR	Alpha
Performance Expectancy (PE)				
PE1	0.88			
PE2	0.87	0.785	0.936	0.932
PE3	0.86			
PE4	0.93			
Effort Expectancy (EE)				
EE1	0.86			
EE2	0.83	0.716	0.910	0.907
EE3	0.87			
EE4	0.82			
Social Influence (SI)				
SI1	0.90			
SI2	0.88	0.778	0.934	0.934
SI3	0.87			
SI4	0.87			
Facilitating Conditions (FC)				
FC1	0.86			
FC2	0.85	0.739	0.895	0.895
FC3	0.87			
Behavioral Intention (BI)				
BI1	0.92			
BI2	0.92	0.839	0.940	0.939
BI3	0.90			
Usage behavior (UB)				
UB1	0.92			
UB2	0.94	0.826	0.950	0.949
UB3	0.89			
UB4	0.88			

Figure (3) Confirmatory Factor Analysis (CFA)

Operational Definitions

Concepts or variables in this research were not directly observable, therefore it was necessary for them to be operationalized in a way that enabled the researchers to measure them. Operational definitions of variables measured in this research were borrowed and slightly modified from previous studies. These definitions are presented in Table 4.

Instrument Validation and Reliability

To verify the construct validity and reliability, a confirmatory factor analysis (CFA) has been used (Figure 3) using AMOS 20.0 software. The composite reliability for the internal consistency was demonstrated since values for all constructs were above the suggested threshold of 0.70 (Table 5), the lowest value of composite reliability was 0.895, larger than the recommended value of 0.7, showing good reliability. Another alternate measurement of reliability is "Cronbach's α coefficient". The reliability of each construct has alpha indexes greater than the suggested value (0.70), which is considered acceptable and indicating that the questionnaire was developed with good internal consistency (Hair et al., 2010).

Convergent validity can be assessed by examining the average variance extracted (AVE) from the measures. For AVE, a score of 0.5 indicates acceptability (Fornell and Larcker, 1981). From Table 5, it can be observed that the AVE ranges from 0.716 to 0.839, which shows convergent validity.

Table 6 Goodness-of-fit Indices

Fit Indices	Threshold	Value
CMIN ($\chi2$)/DF	< 3	2.026
RMSEA (Root Mean Square Error of Approximation)	< 0.08	.059
RMR (Root Mean Square Residual)	< 0.08	.031
AGFI (Adjusted Goodness of Fit Index)	> 0.80	.853
NFI (Normed Fit Index)	> 0.90	.951
CFI (Comparative Fit Index)	> 0.90	.974
IFI (Incremental Fit Index)	> 0.90	.974
Tucker-Lewis index (TLI)	> 0.90	.969
RFI (Relative Fit Index)	> 0.90	.940

Source: Hair et al. (2010)

Table 7 Sample Demographic Characteristics

Measure		Frequency	Percent
Gender	Male	136	45.9%
	Female	160	54.1%
Age	25 Or less	54	18.2%
	26 -35	206	69.6%
	36 – 45	34	11.5%
	46 Or Above	2	.7%
Experience	Less than 1 year	13	4.4%
	2 – 5 years	143	48.3%
	6 – 10 years	98	33.1%
	More than 10 years	42	14.2%
Institution	knowledge sharing (Jordan)	190	64.2%
	Digital (Oman)	19	6.4%
	Access Centers (Syria)	43	14.5%
	Telecentres (Egypt)	44	14.9%
	Total	**296**	**100.0%**

Also, the standardized factor loadings for all items were above the suggested cut-off 0.60 (Hatcher, 1994) showing strong evidence of convergent validity.

Model Fit
Hair et al., (2010) suggested a set of fit indices used to examine the structural model. As shown in Table 6, all of the model-fit indices exceed the respective common acceptance levels suggested by previous studies, demonstrating that the model exhibited a good fit with the data collected. Thus, the researchers could proceed to examine the path coefficients of the structural model.

IV. DATA ANALYSIS AND FINDINGS
Sample Description
Detailed descriptive statistics of managers' characteristics are shown in Table 7. The results indicate that the percentage of males (45.9%) and females (54.1%) is almost equal. The largest percentage (69.6%) of managers was from the 26 to 35 age category and the lowest percentage (7%) was from 46 or above age category, meaning that most of the workers in the training and development sector in the MENA region were young. Managers with 2 to 5 years of experience represent the largest percentage (48%). More than half of the managers were from Jordanian Knowledge

Stations (64.2%) followed by Egyptian ICT Trust Fund Telecentres (14.9%), Syrian Knowledge Access Centers (14.5%), and Oman Digital Organizations (6.4%) respectively.

Predictive Power of Model
The squared multiple correlation (R^2) for each endogenous construct indicates the amount of variance in the construct explained by the model. As shown in Figure 4, the model can explain 91% of the variance in behavioral intention ($R^2 = 0.91$) and 82% of the variance in usage behavior ($R^2 = 0.82$).

Hypothesis Testing:
The structural model results are illustrated in Figure 4. Standardized regression weight and t-values for direct, indirect, and total effect are shown in Table 8. Thus, the confirmation results of the proposed hypotheses are as follows:

H1: specifies that performance expectancy has a significant direct effect on managers' behavioral intention to use online knowledge sharing. This hypothesis is verified (with the path coefficient = 0.637; t = 6.04). It shows that the higher level of managers' performance expectancy will result in higher levels of behavioral intentions to use online knowledge sharing. As a result H1 was accepted.
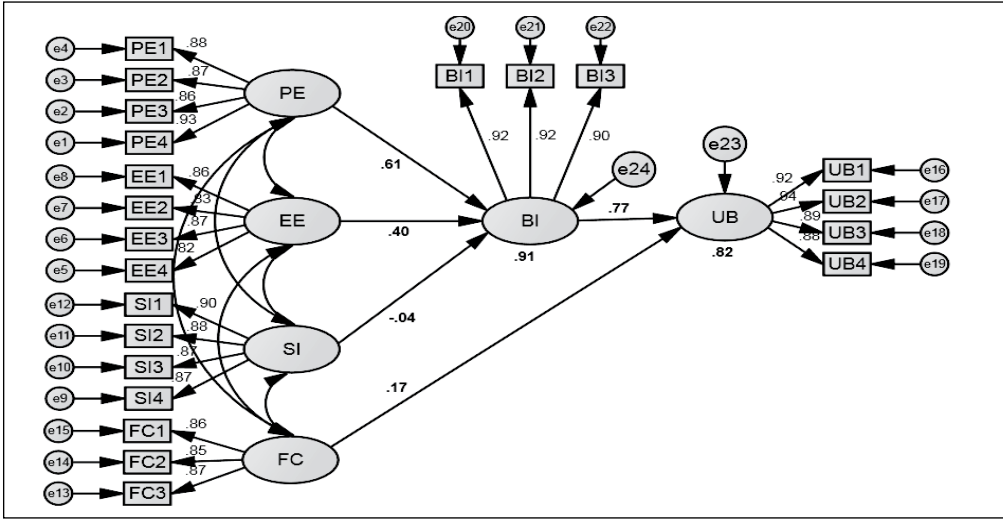
Figure 4 Structural Model

Table 8 Direct Effect and Indirect Effect

Direct Effect		
Path	**Coefficients**	**T-Value**
Performance Expectancy --> Behavioral Intention	0.637	6.04***
Effort Expectancy --> Behavioral Intention	0.427	2.43*
Social Influence --> Behavioral Intention	-0.048	-0.284
Facilitating conditions --> Usage Behavior	0.174	3.10**
Behavioral Intention --> Usage Behavior	0.776	13.16***
Indirect Effect		
Path	**Coefficients**	**T-Value**
Performance Expectancy --> Usage Behavior	0.473	2.37*
Effort Expectancy --> Usage Behavior	0.307	2.16*
Social Influence --> Usage Behavior	-0.035	-0.05

*** p< .001, ** p<.01, * p<.05, based on two-tailed test; t (p< .001) = 3.29; t (p< .01) = 2.58; t (p< .05) =1.96.

H1a: specifies that performance expectancy has a positive indirect effect on managers' usage behavior of online knowledge sharing through their behavioral intention. This hypothesis is verified (with the path coefficient = 0.473; t = 2.37). It shows that the higher level of managers' performance expectancy will result in higher levels of behavioral intention to use online knowledge , which, in turn, leads to a higher level of usage behavior of online knowledge sharing. In other words, behavioral intention mediates the relationship between performance expectancy and usage behavior of managers. As a result, H1a was accepted.

H2: specifies that effort expectancy has a positive direct effect on managers' behavioral intention to use online knowledge sharing, this hypothesis was verified (with the path coefficient = 0.427; t = 2.43). It shows that the higher level of managers' effort expectancy result in a higher level of behavioral intention to use online knowledge sharing, As a result, H2 was accepted.

H2a: specifies that effort expectancy has a positive indirect effect on managers' usage behavior of online knowledge sharing through

their behavioral intention. This hypothesis was verified (with the path coefficient = 0.307; t = 2.16). It shows that the higher level of managers' effort expectancy will result in higher levels of behavioral intention to use online knowledge sharing, which, in turn, leads to a higher level of usage behavior of online knowledge sharing. In other words, behavioral intention mediates the relationship between effort expectancy and usage behavior of managers. As a result, H2a was accepted.

H3: specifies that social influence has a positive direct effect on managers' behavioral intention to use online knowledge sharing. This hypothesis was rejected (with the path coefficient = -0.048; t = -0.284). It shows that the social influence does not have a significant direct effect on managers' behavioral intention to use online knowledge sharing. As a result, H3 was not approved.

H3a: specifies that social influence has a positive indirect effect on managers' usage behavior of online knowledge sharing through their behavioral intention. This hypothesis was rejected (with the path coefficient = -0.035; t = -0.05). It shows that the social influence does not have a significant indirect effect on managers' usage behavior of online knowledge sharing through their behavioral intention. In other words, behavioral intention does not mediate the relationship between social influence and managers' usage behavior of online knowledge sharing. As a result, H3a was not approved.

H4: specifies that facilitating conditions have a positive direct effect on managers' usage behavior of online knowledge sharing. This hypothesis was verified (with the path coefficient = 0.174; t = 3.10). It shows that the high level of facilitating conditions available to managers will result in a higher level of usage behavior toward online knowledge sharing. As a result, H4 was accepted.

H5: specifies that behavioral intention has a positive direct effect on managers' usage behavior of online knowledge sharing. This hypothesis was verified (with the path coefficient = 0.776; t = 13.16). It shows that the high level of behavioral intention results in a higher level of usage behavior of online knowledge sharing. As a result, H5 was accepted.

In brief, the tests of the structural model showed that the performance expectancy, effort expectancy has a positive direct effect on behavioral intention and positive indirect effect on usage behavior. Also, behavioral intention and facilitating conditions have a positive direct effect on usage behavior, whereas social influence does not have a direct effect on behavioral intention or indirect effect on usage behavior. After testing the model, the researchers found that all factors have positive effect on Usage Behavioral of online knowledge sharing except social influence.

V. DISCUSSION AND RECOMMENDATIONS
Discussion
Having tested the research hypotheses and extracted the results of interest, the researchers provide a discussion and explanations of these results, as well as their congruence and incongruence with previous studies.

The researchers have found that performance expectancy has a direct effect on managers' behavioral intention ($\beta = 0.637$) and is the most influential factor affecting behavioral intention to utilize sharing of online knowledge. Even though the findings are contrary with those of Abu Baker et al., (2013), they are in agreement with the results of numerous prior researches (Venkatesh et al., 2003; Yu, 2012; Taiwo and Downe, 2013; Tan, 2013) where it was concurred that performance expectancy is the most authoritative predictor of behavioral intention. As demonstrated previously, performance expectancy is construed as the extent to which a manager affirms that sharing knowledge

electronically will benefit an individual to attain achievements in a job. These achievements can be tangible (promotions, salary increases or gratuities), intangible (creditable, morale) and community interest (transpose of practice related knowledge, interaction) (Taiwo and Downe, 2013). In the context of this research, such results mean that performance expectancy can assist the managers of knowledge training centers to increase their intention to share knowledge online via available sharing. If they are granted some benefits such as extra degrees in job evaluation, financial rewards or acknowledgement document, this would increase their intention to continue sharing knowledge and expertise online.

The second hypothesis posits that effort expectancy will have a decisive effect on intention to utilize online knowledge sharing. The research has illustrated the above claim that effort expectancy is significantly and undoubtedly pertinent to intention to use. This presupposes that training center managers who recognize the ease of use of online sharing media would have a formidable intention to actually use it. This finding is congruous with Venkatesh et al. (2003) and Bedard et al. (2003), who claimed that effort expectancy or perceived ease of use is a predictor of intention. Furthermore, this result is in concert with numerous prior research results (Sundaravej, 2010; Pennington et al., 2006; Mariaka and Oboko, 2009; McCombs, 2011; Kasim et al., 2013). On the other hand, this result repudiates the results of Wu, Tao and Wang (2007) where it was alleged that effort expectancy did not dramatically affect behavioral intention toward 3G mobile communication services. Effort expectancy is described as the extent of ease correlated with the utilization of a specific technology. In the current research, effort expectancy is determined to be the amount of effort managers must consume for sharing knowledge online. The survey items which measured effort expectancy alluded to the ease of utilizing technology meaning that

the more the manager felt satisfied to utilize online media, the more likely the manager would have the intention to actually using it. The availability of professional development for technological usage might increase if the managers in their training centers reduced the individual concerns over the effort required to share their knowledge.

Among the five hypotheses, only the third one (social influence) was not supported, which is consistent with the results of some previous studies (Phichitchaisopa et al., 2013; Marika and Oboko, 2009). On the other hand, this finding is inconsistent with the results of Venkatesh et al. (2003). Several possible reasons might exist. However, it should be recognized that Venkatesh et al. (2003) conducted the studies across technologies, organizations, industries, business functions, the nature of use (voluntary VS. mandatory), and users' experience. Contrarily, the current research was conducted with a single time frame, which is the post-adoption period where managers already sharing their knowledge online, without a consideration of moderators such as experience, gender, age, and voluntariness of research participants that may diminish or intensify the relationship between independent and dependent variables. According to Venkatesh et al. (2003), the influence of society on behavioral intention will be stronger in mandatory setting. This may be a main reason why the social influence loses its significance when managers are not subject to pressure from others to share their knowledge online, resulting in the disappearance of the solid relationship between this construct and the behavioral intention in the current research model. It would be fair to conclude that the opinion of others about technology use is less important than other constructs.

In terms of facilitating conditions, Venkatesh et al. (2003) found that this construct has a positive effect on the actual use of technology.

A similar result was found in this current research. It has been noted that a lack of facilitating conditions can be a barrier to the managers' actual use of online knowledge sharing. This result is consistent with previous research results (Ghalandari, 2012; Urumsah et al., 2011) and implies that infrastructure support such as a good working environment, high-speed internet access, and a technical support team are necessary. As suggested by Ghalandari (2012), managers should have resources and knowledge necessary to use online knowledge sharing, thus decision makers need to acquire the basic knowledge and operational skills before utilizing online knowledge sharing. Also, when managers perceived adequate support (technical) to be available, accessible, and timely, they also perceived the use of technology to be relatively free from effort and this could have strengthened their intention to use technology, suggesting that the environment in which managers engaged technology was more important than their beliefs about whether people who perceived to be significant thought if they should use technology or not.

It has been ascertained that behavior intention is a pivotal indicator of the ultimate utilization of online knowledge sharing, which is homogeneous with the study of Venkatesh et al. (2003) and demonstrates that as behavior intention enhances, usage behavior will enhance too. Owing to the fact that behavior intention has been claimed to be an acceptable predictor of use, the effect of behavior intention on substantive usage was scrutinized in this research to circumstantiate the effect in an organizational environment. Managers who have an adverse feeling toward online medias have been less likely to utilize them. Why the manager has a negative intention could be based on previous experience, inadequate physical or institutional support (Venkatesh et al., 2003).

Conclusions and Implications:
Conclusions

The results support the applicability of the UTAUT model to the analysis of managers' intention and behavior regarding online knowledge sharing. Also, results indicate that the main factors are performance expectancy and effort expectancy which act as significant determinants to users' behavioral intention. Moreover, performance expectancy was found to have the strongest direct effect on behavioral intention, whereas social influence was found to have no direct effect on behavioral intention, as well as an indirect significant effect on total use online knowledge sharing. In an organizational environment, decision makers need to comprehend that to instigate managers to share their knowledge online the individuals require to have their effort expectancy decreased, the performance expectancy enhanced, and the facilitating conditions favorable to technological utilization. In other words, when individuals acknowledge the benefits of using online knowledge sharing, they are more likely to want to try it. When such technology appears easy to use and access, individuals will be more interested in them. When there is good technical infrastructure and a viable support team, managers will be more likely to actually use such technology.

Implications

Although this study was conducted in the Arab culture which differs significantly from the Western culture where most of the previous studies were conducted, the results were consistent with those studies to a great extent. Perhaps the logical explanation for this result is what is referred to in the study of Ardichvili et al., (2006) where it was claimed that the cultural differences are less pronounced online than they are in face-to-face interactions, and since the organizational status of other community members is unknown, employees might be less hesitant to post a comment or an answer to someone else's question on the discussion board.

Building on the discussion of findings and the conclusions drawn from this research the practical implications are as follows:

1. The first implication is derived from the fact that performance expectancy has an important influence on the managers' intentions and behaviors. Decision makers should identify most of the benefits expected by managers and could be in the form of bonuses in the annual evaluation, and documented acknowledgements. This would raise their intention to share information electronically across multiple means.
2. Managers should be provided with enough awareness about the importance of online knowledge sharing practices and could be achieved through attending relevant training workshops.
3. Designers of websites, dedicated to sharing knowledge, should focus on the need of making the sites accessible, easy to use, uncomplicated, and not require concentrated efforts to learn how to use and interact with them.

Limitations and Future Research

Although this research is the primary one considering the reality of online knowledge sharing usage applied to a wide range in the MENA region, the research has some limitations:

1. Unfortunately, this research was applied during a period when some countries faced wars and revolutions, such as Syria and Egypt, which led to the decline in the number of operating centers, and thus reduced the number of responses obtained from those countries. We envision repeating the study after passing these turbulent circumstances to enlarge the research sample with respondents from the four countries involved in the research (Jordan, Egypt, Syria, and Oman), in addition to other countries such as Sudan and the Arab Gulf states in order to obtain a clear image and disseminate the results to the MENA region.

2. Moreover, this research mainly conducted a cross-sectional study and did not determine the change in user reactions over time. However, user behavior is dynamic. Future research may provide more insights on user behavior development.
3. Additionally, our model might be affected by the fact that other potential factors determining online knowledge sharing utilization were excluded from the model, such as cultural characteristics (Ardichvili et al., 2006), privacy, security, web-self efficacy, organizational culture and support. Accordingly, for the augmentation of the model validity, further research could be expanded and reformation of constructs.
4. The current study ignored the moderating effect of gender, age and experience for the reason that was mentioned earlier in this astudy. Further investigation is needed with respect to the range of age and gender in order to explore its moderating effect on intention – online knowledge sharing usage to improve the understanding of this relationship.

Appendix (I)
Questionnaire Items

1. Name of the institution to which you belong:
    ( ) Knowledge Stations program (Jordan)
    ( ) Access centers (Syria)
    ( ) Oman Digital Organization (Oman)
    ( ) Telecentres (Egypt)
2. The region: ( ) South   ( ) North
    ( ) Center
3. Gender: ( ) Male   ( ) Female
4. Age: ( )25 or less ( )26 – 35 ( )36-45
    ( ) 46 – 55   ( ) 56 or above
5. Practical experience (years): ( ) Less than 1
    ( ) 2-5 ( ) 6-10 ( ) More than 10

Performance Expectancy (PE)	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
PE1: I find using online knowledge sharing is useful					
PE2: I think using online knowledge sharing enable me to accomplish tasks more quickly.					
PE3: I think that using online knowledge sharing increase my productivity.					
PE4: I think that using online knowledge sharing increases my chances of getting a good grade in annual evaluations					
Effort Expectancy (EE)	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
EE1: My interaction with online knowledge sharing is clear and understandable.					
EE2: It is easy for me to become skillful at in using online knowledge sharing.					
EE3: I find using sharing Knowledge online is easy to use.					
Social Influence (SI)	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
SI1: People who influence my behavior think that I should use online knowledge sharing.					
SI2: I think that not participating in using online knowledge sharing is falling me behind others.					
SI3: In general, the foundation has supported online knowledge sharing.					
S14: I expect to share knowledge online because people around me do.					
Facilitating Conditions (FC)	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
FC1: my foundation has the resources necessary to enable online knowledge sharing.					
FC2: I have the technical knowledge necessary to use online knowledge sharing.					
FC3: A specific person (or group) is available for assistance with online knowledge sharing difficulties.					
Behavioral Intention (BI)	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
BI1: I intend to use online knowledge sharing in the future to assess my abilities.					
BI2: I will constantly try to use online knowledge sharing in my daily life					
BI3: I do not plan to continue using the Internet to share knowledge with others					
Times to use of electronic means to share knowledge (UB)	**Never**	**Monthly**	**Weekly**	**Daily**	**Several times daily**
UB1: Website of the Foundation					
UB2: Email					
UB3: Data and reporting system					
UB4: Social networking sites (Facebook, Twitter, etc..)					

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