

# **Investigating Academics' Knowledge Sharing Behaviour**

# in United Arab Emirates

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**Abstract:** This study aims to provide an understanding of knowledge sharing behavior among academics in United Arab Emirates universities and assess the factors influencing it. It also identifies the effect of the type of university on academics' knowledge sharing behavior. The study used Ajzen's amended Theory of Planned Behavior to test the research model. Adopting a quantitative research that employed a cross-sectional online survey, data were collected from 105 academics in public and private universities using a questionnaire designed for the study. The results revealed that intention is the main determinant of knowledge sharing behavior, and that attitude, subjective norms, and self-efficacy have significant influence on intention, meanwhile controllability has no significant influence on intention. This study provides useful basis for higher education institutions to create a knowledge sharing culture and makes valuable contribution given the dearth of empirical studies on knowledge sharing in the Arab world.

**Key words:** knowledge sharing behavior; theory of planned behavior; academics; universities; United Arab Emirates

JEL codes: M150, I200, I230

## **1. Introduction**

With the advent of technology and availability of different knowledge repositories of books, websites, and multimedia resources, one would assume that knowledge is being hugely created, easily accessed, and widely shared. Realizing the importance of knowledge as a significant element in organizations makes creating competitive climate and enhancing individual and organizational assets allowable. Organizations are seeking different strategies to capture the knowledge and expertise of their human capital with offering incentives to encourage employees to share their possessed knowledge.

Knowledge sharing is one of the major processes of knowledge management (Nonaka & Takeuchi, 1995) and its strategies are keys to organizational and individual development (Alavi & Leidner, 2001; Earl, 2001). It is defined as the process of disseminating information and knowledge within the organization (Ling, Sandhu &

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Kamal, 2009). It is also the a process of exchanging and transferring existing knowledge and ideas among people in order to create new knowledge and ideas (Syed, Zaini, Noormala & Zahariah, 2009) to help an organization achieve its objectives. In order to better understand knowledge sharing, it is imperative to know its benefits and importance.

There are numerous benefits for knowledge sharing on both organizational and individual levels. On an organizational level, it helps in achieving continuous organizational growth (Ling et al., 2009), meeting organization's goals and objectives, solving business problems (McDermott & O'Dell, 2001; Riege, 2005), enhancing market performance, maintaining competitiveness and profitability (Kearns & Lederer, 2003 in Huang & Davison, 2008; Riege, 2005), gaining better understanding of customer needs and identifying new business opportunities (Skyme, 2000). Moreover, knowledge sharing has potential impacts on process efficiency enhancement in organizations (Cummings, 2004) through facilitating knowledge creation (Nonaka, 1994) and encouraging knowledge exchange. On an individual level, it helps in promoting individuals' learning and innovation (Riege, 2005; Ling et al., 2009), enhancing their performance (Srivastava, Bartol & Locke, 2006), skills and competencies (Ketvirtis, 2011), and transferring knowledge among individuals in the same unit or from one unit to another (Argote & Ingram, 2000). Practising knowledge sharing results in improved organizational effectiveness (Sohail & Daud, 2009) such as creating new knowledge, innovating, improving performance (Hawamdeh, 2003 in Sohail & Daud, 2009), achieving long term sustainability and success (Nonaka & Takeuchi, 1995), and accelerating individuals' learning (Riege, 2005). Regardless of the business an organization is working in, the type of services or products it is providing, effective knowledge sharing practices are the key to all successful organizations aiming to achieve their objectives.

## 2. Literature Review

### 2.1 Knowledge Sharing in Higher Education

Higher education institutions are knowledge-intensive environments and are responsible for creating, managing, and disseminating knowledge in society. Universities are science centers established to generate and provide knowledge and to equip people with the best education in order to serve their societies and uplift the well-being of mankind. They grow and prosper from the knowledge of their academics, staff, and students (Singer & Hurley, 2005). Accordingly to ensure success, achieve their goals (Sharma, 2010), and have constant performance improvements, universities should promote knowledge sharing among their academics, staff, and students alike.

However, research-based knowledge has not been very successful in guiding decision makers in universities and other higher education institutions to value their capital assets and manage and utilize the knowledge of these assets (Gera, 2012). Moreover, while there are broad researches about knowledge management and its processes in different areas, research about knowledge sharing specifically in higher education is quite limited (Fullwood, Rowley & Delbridge, 2013).

Knowledge sharing is an essential concept in higher education institutions (Sohail & Daud, 2009), where knowledge creation, management, sharing, and utilization is implanted in these institutions (Cheng, Ho & Lau, 2009). Therefore, higher education institutions are sources of knowledge. According to Cheng et al. (2009), the impact of knowledge sharing in higher education institutions could be larger than that created by business organizations (Cheng et al., 2009). They further indicate that if knowledge sharing is implemented properly and

wisely, it can create a competitive advantage for higher education institutions. Consequently, more grants are being given to higher education institutions to implement knowledge sharing strategies (Sohail & Daud, 2009).

In the academic environment, the role of knowledge sharing is quite significant to achieve maximum results for higher education institutions (Babalhavaeji & Kermani, 2011) considering the important role of academics in education, research, and scholarly work. Therefore, the process of knowledge sharing is gaining more attention by many researchers who indicate that knowledge sharing is relevant to the critical role of higher education institutions where knowledge is being created (Aulawi, Sudirman, Suryadi & Govindaraju, 2009; Babalhavaeji & Kermani, 2011; Kamal, Manjit & Gurvinder, 2007; Patel & Ragsdell, 2011; Sohail & Daud, 2009).

According to Sallis and Jones (2002), academics are expert knowledge workers engaged in teaching, writing, and research, and their higher education institutions generate value using their intellectual assets. For academics in particular, to share knowledge is part of their daily job and work activities. They create, manage, disseminate, and share knowledge with each other and with students (Sohail & Daud, 2009). Moreover, the knowledge created, stored, and shared in higher education institutions serve as repository knowledge for academics, researchers, and students to distinguish the institution and to enhance their own knowledge and help them advance in their careers (Basu & Sengupta, 2007 in Cheng et al., 2009). Therefore, realizing the importance of knowledge sharing for academics in terms of promoting their learning and innovation (Reige, 2005) would certainly encourage them to practice it.

### 2.2 Knowledge Sharing in United Arab Emirates

In the last few years, United Arab Emirates (UAE) has experienced significant local and foreign investments in various fields such as construction, infrastructure, telecommunications, media, information technology, hospitality and tourism (Ahmad & Daghfous, 2010) as well as education, which is witnessing heavy investment at all levels (Boumarafi, 2006). As a matter of fact, in view of the government's commitment to invest in human capital and maintain the best possible quality of education, it has allocated more than 1/3 of its budget to education and has allocated considerable funds to invest in research (Al Nahyan, 2012). The higher education in particular has not been excluded from this developing process, when the government announced a strategy in 2010 to invest in its human capital and establish a knowledge-based society with a knowledge-based economy (Al Nahyan, 2012). Thus, the government partnered with numerous academic institutes from around the world to establish campuses in UAE to contribute in raising the standards of the higher education in UAE (Al Nahyan, 2012). Moreover, UAE has one of the highest per-capita incomes in the Arab World (Boumarafi, 2006). Therefore, integrating knowledge sharing strategies in the higher education system specifically will provide decision makers with the right tools to undertake their tasks more effectively (Alrawi & Jaber, 2007). It will also help both public and private academic institutions to gain accreditation from the ministries of higher education in the Arab World.

One of the major initiatives towards establishing a knowledge-based society in the region has been demonstrated in the establishment of a US\$10 billion project called "Mohammed Bin Rashid Al Maktoum Foundation" to promote knowledge in the region. According to H.H. Sheikh Muhammad, Ruler of Dubai and President of Mohammed bin Rashid Al Maktoum Foundation "there is a need to build an Arab model of knowledge that reflects Arab culture" (Mirghani, O'Sullivan & Ribere, 2008, p. 111). He indicated that such a model will definitely develop the human capabilities, provide skilled regional leaders, meet the needs of economic, social, and cultural development in the Arab world, protect intellectuals, researchers, and inventors, as well as keep pace with the international standards in production, quality, and performance.

Recognizing the importance of knowledge sharing in both education and research is creating a demand for

applying it in academic institutions (Gurbuz, 2008). This is due to the deep-rooted role of academic institutions in higher education that views them as a place of knowledge creation, scientific innovation, intellectual and cultural productivity, as well as individual economic advancement (McGown, 2000). Hence, if UAE is to build the 'Arab Model of knowledge' and play its aspired role in creating knowledge and establishing a knowledge-based society in the region, then the government has to promote a culture of knowledge sharing (Sarrafzadeh, Martin & Hazeri, 2010; Alrawi & Jaber, 2007) particularly within academic institutions given their importance in knowledge creation.

Few papers have been published about knowledge sharing in the Arab world, where they concentrated on the Gulf region countries, in which the authors covered a small range of public and private sectors including business, management, petroleum, telecommunications, and police force service (Ahmad & Daghfous, 2010; Al-Adaileh & Al-Atawi, 2011; Al-Alawi, Al-Marzooqi & Mohamed, 2007; Al-Busaidi, Olfman, Ryan & Leory, 2010; Rowley, Seba & Delbridge, 2012; Seba, Rowley & Lambert, 2012; Skok &Tahir, 2010; Weir & Hutchings, 2005). Among those who addressed knowledge sharing in UAE in particular are Ahmad and Daghfous (2010); Rowley et al. (2012); Seba et al. (2012); and Skok and Tahir (2010). The authors studied the practice of knowledge sharing and its activities, in addition to the influence of some organizational, individual, technological, and cultural factors on it. However, no studies addressed knowledge sharing in the higher education sector.

The importance of knowledge sharing should be more obvious to higher education institutions than other organizations since creating, storing, exchanging, transferring, and utilizing knowledge is the core of their mission. Having said that, this research intends to understand academics' knowledge sharing behavior in United Arab Emirates universities and evaluate the influence of its predictors based on the amended Theory of Planned Behavior. It also identifies the effect of the type of university on the academics' knowledge sharing behavior.

#### **3. Research Questions**

(1) Is there any significant difference between academics' knowledge sharing behavior in public and private universities?

(2) What are the determinants that influence academics' actual knowledge sharing behavior based on the theory of planned behavior?

(a) Does intention towards knowledge sharing influence the academics' actual knowledge sharing behavior?

(b) Does attitude towards knowledge sharing influence the academics' intention to share knowledge?

(c) Does subjective norm towards knowledge sharing influence the academics' intention to share knowledge?

(d) Does self-efficacy towards knowledge sharing influence the academics' intention to share knowledge?

(e) Does controllability towards knowledge sharing influence the academics' intention to share knowledge?

# 4. Theoretical Framework

#### 4.1 Theory of Planned Behavior

The study adopted Ajzen's (1985, 1991, 2002) Theory of Planned Behavior (TBP), which provided a framework to study the academics' behavioral intention and actual knowledge sharing behavior. It extends the boundary condition of the individual's volitional control (Madden, Allen & Ajzen, 1992) given in the Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). TPB has emerged as one of the most influential and popular conceptual frameworks to study human behavior (Ajzen, 1991) and it has been used over

the past two decades to examine various individuals' behavioral intentions and actual behaviors (Lin & Lee, 2004).

According to TPB (Ajzen, 1985), human behavior is guided by three kinds of salient beliefs: behavioral beliefs about the likely consequences or attributes of the behavior, normative beliefs about the normative expectations of other people, and control beliefs about the presence of factors that may facilitate or hinder performance of the behavior (Ajzen, 2002). In their respective aggregates, behavioral beliefs produce a favorable or unfavorable attitude toward the behavior; normative beliefs result in perceived social pressure or subjective norms; and control beliefs give rise to perceived behavioral control, the perceived ease or difficulty of performing the behavior (Ajzen, 2002). In combination, attitude, subjective norms, and perceived behavioral control lead to the formation of a behavioral intention. Perceived behavioral control was later deconstructed into two major constructs: self-efficacy and controllability (Ajzen, 2002).

The theory of planned behavior has been discussed extensively to explain individual's intentions and behaviors (Ajzen, 1985, 1991, 2002). According to Ajzen (2006), the more favorable the attitude and subjective norm, and the greater the self-efficacy and controllability, the stronger should be the individual's intention to carry out the behavior. Intention itself is assumed to be the immediate antecedent of behavior.

## 4.2 Theoretical and Empirical Background

Behavior is the degree to which an individual actually decides to perform or not perform a specific action and it is determined by the individual's intention to perform it or not (Ajzen, 1991; Ajzen & Fishbein, 1980). Robertson (2002) states that knowledge sharing is a human action. Therefore, knowledge sharing behavior itself is an individual's optional behavior, not directly recognized, and in the collective supports effective functioning of an organization's operations and performance (Bordia et al., 2004 in Alajmi, 2010). Consequently according to TPB, within the context of the current study, an academic's knowledge sharing behavior is the degree to which an academic actually shares his/her knowledge with others.

Intention is an individual's willingness to engage in certain behavior (Ajzen, 1985, 1991, 2002). It is considered as the most significant predictor and the central factor influencing an individual's behavior (Ajzen & Fishbein, 1980; Ajzen, 1991; Chang, 1998). According to TPB, intention to share knowledge is the individual's willingness and readiness to engage in knowledge sharing behavior. Thus, an individual's intention to share knowledge highly determines his/her behavior to actually share knowledge with others (Alajmi, 2011). In knowledge sharing context, studies have found that intention directly and significantly affects an individual's knowledge sharing behavior (Alajmi, 2011, 2010; Babalhavaeji & Kermani, 2011; Chatzoglue & Vraimaki, 2009; Chen, Chen & Kinshuk, 2009; Ellahi & Mushtaq, 2011; He-feng, 2009; Keyes, 2008; Lin & Lee, 2004; Shin, Ramayah & Jahani, 2008; Tohidinia & Mosakhani, 2010).

Attitude is the degree to which an individual has favorable or unfavorable evaluation or appraisal of the behavior (Ajzen, 1991). Attitude towards the behavior is an influential factor to perform that behavior (Ajzen & Fishbein, 1980; Ajzen, 1985, 1991, 2002) indirectly by influencing the individual's intention, which is more closely linked to the behavior in question (Ajzen, 1991). With regard to knowledge sharing, attitude determines the individual's intention to actually perform knowledge sharing behavior (Alajmi, 2010; Sun & Scott, 2005). Therefore, the more favorable the individual's attitude toward sharing knowledge, the stronger his/her intention to share knowledge. Researches and studies (Bock & Kim, 2002; Bock, Zmud, Kim & Lee, 2005; Ellahi & Mushtaq, 2011; Hung, Lai & Chou, 2010; Lin, 2007; Ryu, Ho & Han, 2003; Tohidinia & Mosakhani, 2010) have demonstrated a significantly positive relationship between attitude and intention to share knowledge.

Subjective norms are defined as the individual's perceived social pressure to perform or not to perform a given behavior (Ajzen, 1991). Thus, subjective norms refer to the individual's belief that important relevant others, including executive board, senior management, supervisor, and peers expect him/her to engage in the behavior of interest (Chennamaneni, 2006). In terms of knowledge sharing, subjective norms refer to how the individual perceives others' view of sharing the knowledge. Thus, the stronger the individual's perceived subjective norms, the stronger his/her intention to share knowledge. Researches and studies (Alajmi, 2010; Bock et al., 2005; Chen et al., 2009; He-feng, 2009; Hung et al., 2010; Lin & Lee, 2004; Ryu et al., 2003; Tohidinia & Mosakhani, 2010) proved that subjective norms are significant determinant of the individual's intention to share his/her knowledge.

Self-efficacy is an individual's confidence in the ease or difficulty to perform the behavior in question (Ajzen, 2002) and is considered an important factor influencing an individual's intention to perform the behavior (Ajzen, 1991, 2002). In terms of knowledge sharing self-efficacy can be referred to as an individual's estimate of how easy or difficult it is for him/her to share knowledge with others. According to Constant, Kiesler & Sproull (1994) an individual with high self-efficacy is more confident to share knowledge with others. Thus, the greater the individual's self-efficacy, the stronger his/her intention to share knowledge. Moreover, researchers (Bock & Kim, 2002; Moshabbaki & Jaha'nyan, 2009; Taylor & Todd, 1995; Wasko & Faraj, 2005; Ye, Chen & Jin, 2006) found that self-efficacy significantly motivates an individual's intention to share knowledge.

Controllability is an individual's beliefs, based on the available resources, about the extent to which performing a given behavior is up to him/her (Ajzen, 2002). Controllability is an important determinant that influences an individual's behavior through intention (Madden et al., 1992). In knowledge sharing, controllability is referred to as an individual's beliefs, based on the available resources, about the extent to which performing the knowledge sharing behavior is up to him/her (Ajzen, 2002). Thus, the greater the individual's level of control over his/her knowledge sharing capabilities, the stronger his/her intention is to share knowledge. Researchers found that controllability is a significant determinant in influencing the individual's intention to share his/her knowledge (Chennamaneni, 2006; Hung et al., 2010; Kraft, Rise, Sutton & Roysamb, 2005; So & Bollju, 2005; Tavousi, Hidarnia, Montazeri, Hijizadeh, Taremain & Ghofranipour, 2009; Trafimow, Sheeran, Conner & Finlay, 2002).

#### 4.3 Research Model and Hypotheses

The purpose of this study is to identify the factors influencing knowledge sharing behavior among academics in UAE universities adopting the TPB model. Based on the theoretical framework and the past researches employing the TBP as indicated in the literature review, the current study is examining the influence of intention on knowledge sharing behavior as its main determinant, as well as the influence of attitude, subjective norms, self-efficacy, and controllability on intention as its predictors. Based on the theoretical and empirical background on the factors influencing knowledge sharing behavior, the following research model (Figure 1) and hypotheses are proposed:



- H1: Intention to share knowledge has a significant effect on academics' knowledge sharing behavior
- H2: Attitude has a significant effect on academics' intention to share knowledge
- H3: Subjective norms has a significant effect on academics' intention to share knowledge
- H4: Self-efficacy has a significant effect on academics' intention to share knowledge
- H5: Controllability has a significant effect on academics' intention to share knowledge

#### 5. Methodology

### 5.1 Research Design

A cross-sectional web-based survey was used as a method to collect data from the academics working in different public and private universities in UAE. The instrument employed for this purpose was a self-administered questionnaire. The web-based survey has many benefits including overcoming time and space boundaries and ease of data entry (Batinic, Reips & Bosnjak, 2002 cited in Alajmi, 2011). Moreover, it is cost-effective in developing and distributing through an internet link (Weathington, Cunningham & Pittenger, 2010).

#### 5.2 Sample and Sampling Technique

The targeted universities in this study are public and private universities including federal, governmental, and semi-governmental universities. The researchers have chosen universities as a setting for the study because of the excellent and diversified system of higher education that UAE has established and because UAE has become a home to a wide range of public, private, local, and international universities.

The sample for this study consisted of academics working in public and private universities. Being a pilot study, the researchers aimed to collect data from 100 participants, yet a total of 105 academics working in different universities participated in the study. The sampling technique used for this study was the convenience sampling, which includes samples of whoever would be available at the time of conducting the research (Gay & Airasian, 2003). Knowing that often the academics are reluctant to participate in research studies due to their tight schedule and lack of available time, the researchers have decided to choose the convenience sampling.

# **5.3 Survey Instrument**

A comprehensive questionnaire was created to measure the variables developed in the research model. It comprised of three sections; the first section collected demographic information about the participants. The second section collected data about the participants' knowledge sharing behavior and intention to share. The third section collected data about the predictors of intention that influence knowledge sharing behavior including, attitude, subjective norms, self-efficacy, and controllability.

The items used to measure the variables were developed and validated based upon Ajzen's theory of planned behavior (1985, 1991, 2002), and other instruments validated in previous researches conducted on knowledge sharing behavior including Bock et al. (2005), Chen et al. (2009), Hsu, Hu, Yen and Chang (2007), Ryu et al. (2003), and Tohidinia and Mosakhani (2010). All items were measured using five-point Likert-scale. Scales are usually used to measure the strength degree of the respondents' attitudes and feelings about a certain subject, and have a score in the middle that allows them to feel neutral (Simonis, 2010). The scale used to measure the construct knowledge sharing behavior ranged from "Never", "Rarely", "Sometimes", "Usually", to "Always", while the scale used for the other constructs ranged from "Strongly Disagree", "Disagree", "Neutral", "Agree", to "Strongly Agree".

#### 5.4 Data Collection

Data were collected through a survey conducted online. One of the fastest techniques to collect data is the internet using an online survey either by sending an email or posting a web page. For this study, the survey was conducted online by sending an email with a link of the questionnaire to the participants. The email, which was written in both English and Arabic, introduced the study to the participants inviting them to take part in the survey by answering the research questionnaire. The questionnaire was provided in the email through a URL link that led the participants to a web page where they can answer and submit it online. Once the participants submit their answers, the data were recorded directly into a spreadsheet, which was transferred later into SPSS to carry out the required analysis. In order to insure attaining the required sample size, a submission date was arranged to insure that all the academics would comply with it. Reminding emails were sent to the academics to answer the questionnaire.

### 5.5 Data Analysis

Using SPSS 19.0 the sample descriptive characteristics were assessed based on the demographic information including gender, age, nationality, level of education, type of university, faculty, professional position, and years of academic experience. An independent sample t-test was used to examine the difference between academics' knowledge sharing behavior in public and private universities. Using partial least square path modeling PLS-SEM (Smart PLS 2.0 M3), both the measurement model and the research model (Figure 1), as well as the research hypotheses were tested (Hansmann & Ringle, 2004). The PLS path modeling is one of the statistical methods for structural equation modeling (SEM). It is a modeling procedure that performs path-analytics modeling with latent variables and simultaneously evaluates the measurement model and the structural model relating the associated constructs (Kijsanayotin, Pannarunothai & Speedie, 2009). The PLS method allows for more flexibility in modelling, and is able to provide solid results in case of small samples (Hulland, 1999; Abdi, 2003). The assessment of the measurement model involves assessment of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity at indicator and construct levels (Chin, 2010). The assessment of the structural model involves assessment of the coefficient, effect size, and predictive relevance (Chin, 2010). Hypotheses testing is measured by path coefficient and t-statistics.

# 6. Data Analysis and Results

#### **6.1 Demographics of Respondents**

Table 1 below displays the demographic information of the participants. As seen most of the respondents were males with 70.6%. Around 67% of the respondents' age ranged between 41 to more than 51. Majority of the respondents were international with 76.5%. More than half of the respondents around 54.1% had a Ph.D. degree. In terms of the type of university, 56.5% worked at federal universities, 24.7% worked at governmental universities, 15.3% worked at private universities, while only 3.5% worked at semi-governmental universities. As for the faculty, the respondents' percentages varied amongst most of the faculties listed. 29% of respondents were assistant professors, 23% instructors, 15% associate professors and lecturers, and 14% professors. 28% of the respondents had more than 21 years of academic experience, while 23% had 6-10 years and 22% had 11-15 years.

Profile	Category	Percentage (%)
C l	Male	70.6
Gender	Female	29.4
	22-30	2.4
4	31-40	30.6
Age	41-50	34.1
	51& above	32.9
	Bachelor	2.4
Land of Education	Master	34.1
Level of Education	Ph.D	54.1
	Other	9.4
	Public	84.7
Type of University	Private	15.3
	Agriculture	1.2
	Arts	3.5
	Business & Economics	9.4
	Communication & Media	3.5
	Education	12.9
En aulta	Engineering	5.9
Faculty	Humanities & Social Sciences	11.8
	IT	5.9
	Law	1.2
	Health Sciences	17.6
Agriculture         Arts         Business & Economics         Communication & Media         Education         Engineering         Humanities & Social Sciences         IT         Law         Health Sciences         Sciences         Other         Professor         Arts	Sciences	11.8
	Other	15.3
	Professor	14.1
	Associate Professor	15.3
Position	Assistant Professor	29.4
rosition	Instructor	23.5
	Lecturer	15.3
	Other	2.4
	0-5	15.3
	6-10	23.5
Years of experience	11-15	22.4
	16-20	10.6
	21 & above	28.2

 Table 1
 Respondents' Demographic Information

## 6.2 Types of Universities and Knowledge Sharing Behavior

In order to know if there is any significant difference between academics' knowledge sharing behavior working in the public and private universities, an independent sample t-test was conducted. Table 2 shows the mean and st. deviation values for the two groups, while Table 3 shows the results of the independent sample t-test. There was a significant difference in the knowledge sharing behavior for academics in public universities [M = 14.68, SD = 2.95] and academics in private universities [M = 16.30, SD = 1.97] where t-value = -2.5 and p-value = 0.02 which is less than 0.05.

	Ta	ble 2 Gro	oup Statistics			
	Type of university	Ν	Mean	Std. Deviation	n Ste	d. Error Mean
Imourladae charing habayier	public	72	14.6806	2.95423	0.3	34816
knowledge sharing benavior	private	33	16.3077	1.97419	0.5	54754
	Table 3	Independ	lent Sample T-test			
		Levene's	Test for Equality of Var	iances t-test	for Equal	ty of Means
		F	Sig.	t	df	Sig. (2-tailed)
	Equal variances assumed	4.173	0.044	-1.906	83	0.060
knowledge sharing behavior	Equal variances not assumed			-2.508	23.029	0.020

Table 2 Group Statistics	Table 2	Group	Statistics
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## 6.3 Assessment of Measurement Model

Assessment of the measurement model is conducted in order to evaluate its reliability and validity. Reliability is the degree of consistency with which measurements are made (Weathington et al., 2010), while validity is the degree to which an instrument measures what it is supposed to measure (Wiersma & Jurs, 2009). The assessment of the measurement model is conducted through running the following tests: (a) Indicator reliability by measuring the factor loading of the manifest variables and it should be above 0.5 (Straub, 1989), (b) internal consistency reliability by measuring composite reliability and Cronbach's alpha that should be 0.7 and above for both (Hair, Black, Babin & Anderson, 2010), (c) convergent validity by measuring the AVE, which should be more than 0.5 (Fornell & Larcker, 1981), and (d) discriminant validity by using Fornell-Larcker's (1981) criterion where the square root of the AVE for each construct should exceed the correlations between the construct and all other constructs (Henseler, Ringle & Sinkovics, 2009).

Table 4 shows the results of the indicator reliability and internal consistency reliability for the instrument. As seen, the factor loadings ranged from 0.775 to 0.949. All of the factor loadings exceeded the recommended threshold value of 0.50. The values of the composite reliability and Cronbach's alpha varied from 0.899 to 0.962 and from 0.846 to 0.951 respectively. The constructs composite reliability and Cronbach's alpha values exceeded the recommended value of 0.7 indicating satisfactory internal consistency reliability.

Items	Factor Loading	Composite Reliability	Cronbach's Alpha
KSB1	0.869	0.899	0.846
KSB2	0.856		
KSB4	0.801		
KSB5	0.798		
INT1	0.822	0.928	0.902
INT2	0.884		
INT3	0.828		
INT4	0.861		
INT5	0.846		
ATT1	0.901	0.955	0.939
ATT2	0.905		
ATT3	0.877		
ATT4	0.909		
ATT5	0.907		
	Items KSB1 KSB2 KSB4 KSB5 INT1 INT2 INT3 INT4 INT5 ATT1 ATT2 ATT3 ATT4 ATT5	Items         Factor Loading           KSB1         0.869           KSB2         0.856           KSB4         0.801           KSB5         0.798           INT1         0.822           INT2         0.884           INT3         0.828           INT4         0.861           INT5         0.846           ATT1         0.901           ATT2         0.905           ATT3         0.877           ATT4         0.909           ATT5         0.907	Items         Factor Loading         Composite Reliability           KSB1         0.869         0.899           KSB2         0.856         .           KSB4         0.801         .           KSB5         0.798         .           INT1         0.822         0.928           INT2         0.884         .           INT3         0.828         .           INT4         0.861         .           INT5         0.846         .           ATT1         0.901         0.955           ATT2         0.905         .           ATT3         0.877         .           ATT4         0.909         .           ATT5         0.907         .

 Table 4
 Indicator Reliability and Internal Consistency Reliability

(To be continued)

(Table 4 continueu)					
Subjective Norms	SN1	0.877	0.919	0.888	
	SN2	0.879			
	SN3	0.810			
	SN4	0.861			
	SN5	0.775			
Self-Efficacy	SE1	0.912	0.957	0.941	
	SE2	0.878			
	SE3	0.902			
	SE4	0.925			
	SE5	0.899			
Controllability	CON1	0.925	0.962	0.951	
	CON2	0.928			
	CON3	0.949			
	CON4	0.894			
	CON5	0.878			

#### (Table 4 continued)

Moreover, the convergent validity values for the constructs ranged from 0.691 to 0.837. All AVE values exceeded the recommended value of 0.5 demonstrating adequate convergent validity. The discriminant validity values ranged from 0.831 to 0.915. The square root of the constructs AVE values exceeded the correlations between the constructs and all indicators loaded higher on their own constructs indicating satisfactory discriminant validity. The results of the convergent validity and discriminant validity are seen in Table 5 below.

Table 5	Convergent Validity and Discriminant V	Validity
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Constructs	AVE	√AVE
Knowledge Sharing Behavior	0.691	0.831
Intention	0.719	0.848
Attitude	0.809	0.899
Subjective Norms	0.697	0.835
Self-Efficacy	0.816	0.903
Controllability	0.837	0.915

The results of analyzing the measurement model demonstrated reliable and valid measurement model. Thus, the next step is assessing the structural model.

#### 6.4 Assessment of Structural Model

Assessment of the structural model is conducted to evaluate its validity and test the research hypotheses. In order to assess the structural model, the following tests were done: (a) the coefficient of determination ( $R^2$ ) by measuring the amount of explained variance of each latent variable, which should be 0.01, 0.09, and 0.25 indicating small, medium and large exploratory power (Mitchell & Jolley, 2013); (b) path coefficient by measuring the path estimates and t-statistics, which should be 0.02, 0.15, and 0.35 indicating small, medium and large relationships (Henseler et al., 2009); (c) effect size ( $f^2$ ) by measuring the relative impact of a particular exogenous latent variable on an endogenous latent variable by means of changes in the R<sup>2</sup> of the latent variable, which should be 0.02, 0.15, and 0.35 indicating small, and (d) predictive relevance ( $Q^2$ ) by measuring how well observed values are reconstructed by the model and its parameter estimates, which should be higher than zero (Chin, 2010).

As seen in Table 6, the  $R^2$  values for knowledge sharing behaviour and intention were medium and large respectively demonstrating strong explanatory power. The predictive relevance ( $Q^2$ ) values of the dependent variables were above the recommended value zero indicating an adequate predictive relevance of the model.

	Table 6	Coefficient of Determination and Predictive Relevance	
Construct		$R^2$	Q <sup>2</sup>
Knowledge Sharing Behavior		0.2689	0.1827
Intention		0.4729	0.1820

Table 7 shows the results of the effect size  $(f^2)$  test. The values were within the recommended values ranging from 0.129 to 0.270 demonstrating small and medium effect sizes of the independent variables.

Table 7	Effect Size	
Construct	$f^2$	Effect Size
Attitude $\rightarrow$ Intention	0.129	small
Subjective Norms $\rightarrow$ Intention	0.145	small
Self-efficacy $\rightarrow$ Intention	0.146	small
Controllability $\rightarrow$ Intention	0.270	medium

Figure 2 shows the structural model displaying the path coefficients values on the arrows between constructs, as well as the  $R^2$  values inside the circles representing the constructs. The figure also shows the dependent and independent variables along with their manifest variables.



Figure 2 Structural Model

## 6.5 Hypothesis Testing

For testing the research hypotheses, the path coefficients estimates were examined by running the PLS algorithm test, while the t-statistics were examined by running the bootstrapping test. The results of the two tests are used to support or refute the hypotheses. The bootstrapping is basically a re-sample using the available

observations as a basis (Rijlaarsdam, 2007) and it results in a larger sample which is claimed to model the unknown population (Henderson, 2005). The new sample provides the data from which conclusions can be drawn (Rijlaarsdam, 2007). The method is useful in experimental settings with intermediate sample sizes (Kenett, Rahav & Steinberg, 2006). Table 8 shows the results of the hypotheses testing.

Hypotheses	Relationship	Path Coefficient	T-value	Conclusion
H1	intention $\rightarrow$ knowledge sharing behavior	0.518	7.170**	supported
H2	attitude $\rightarrow$ intention	0.338	4.752**	supported
Н3	subjective norms $\rightarrow$ intention	0.314	3.169**	supported
H4	self-efficacy $\rightarrow$ intention	0.276	2.056*	supported
Н5	controllability $\rightarrow$ intention	-0.139	1.421	Not supported

Table 8	Results	of Hypotheses	Testing

Note: \* Significance at t value  $\geq$  1.96 with p  $\leq$  0.05, \*\*Significance at t value  $\geq$  2.59 with p  $\leq$  0.01.

Based on Table 8, the results of the hypotheses testing in regard to the TPB constructs showed that intention has a significant influence on knowledge sharing behavior (H1: path coefficient: 0.518, t-value: 7.170), thus H1 is supported. Also, the results showed that attitude (H2: path coefficient: 0.338, t-value: 4.752), subjective norms (H3: path coefficient: 0.314, t-value: 3.169), and self-efficacy (H4: path coefficient: 0.276, t-value: 2.056) have significant influence on intention; thus, H2-H4 are supported. However, controllability (H5: path coefficient: -0.139, t-value: 1.421) has no influence on intention to share knowledge. Therefore, H5 was not supported.

## 7. Discussion

This research has examined a model of the factors that may affect knowledge sharing behavior among academics in UAE universities. Adopting the TPB model, the researchers examined the influence of the factors of behavior on the academics' knowledge sharing behavior. The results showed that all except one of the hypotheses have been supported, where it has been found that academics' intention is the main determinant of their knowledge sharing behavior. Moreover, based on the results attitude, subjective norms, and self-efficacy have significant influence on the academics' intention to share knowledge. These results are in consistent with prior research findings on knowledge sharing behavior using TPB (Babalhavaeji & Kermani, 2011, Bock et al., 2005; Chatzoglue & Vraimaki, 2009; Chen et al., 2009; Chennamaneni, 2006; Ellahi & Mushtaq, 2011; He-feng, 2009; Hung et al., 2010; Lin, 2007; Lin & Lee, 2004; Ryu et al., 2003; Tohidinia & Mosakhani, 2010). Nevertheless, contrary to the TPB and to previous researches, the results showed that controllability does not have influence on academic's intention to share knowledge. However this result is consistent with the result of a study conducted by Alajmi (2010, 2011) about the influence of TPB determinants on individuals' knowledge sharing behavior in an online community, where she found that controllability had no significant influence on intention.

In identifying the influence of the types of universities on academics' knowledge sharing behavior, the researchers found a significant difference in the knowledge sharing behavior for academics working in public universities and academics working in private universities. This finding is different with what Babalhavaeji and Kermani (2011) found in their research, where their findings revealed no significant difference between knowledge sharing behavior of faculty members working in governmental universities and those working for non-governmental universities.

The findings of this research extend prior researches on the theory of planned behaviour by providing empirical evidence of the determinants of knowledge sharing behaviour in new context and new setting, i.e., higher education in UAE. This provides significant practical implications for academic institutions and for decision makers in UAE.

# 8. Conclusion

#### 8.1 General Conclusion

A better understanding of the importance of knowledge sharing is quite fundamental for the workflow and workforce of all types of organizations regardless of the service they provide. Sharing new knowledge involves generating new processes or replacing existing ones (Nonaka, 1994). Whereas for human capital, knowledge sharing is one way to reduce the loss of tacit knowledge and expertise; thus, creating a more competent workforce (Gurbuz, 2008). The importance of knowledge sharing should be more obvious to higher education institutions than other organizations since knowledge creation, exchange, transfer and utilization is the core of their work. Therefore, it is important for these institutions to develop and harness the appropriate environment that facilitate knowledge sharing.

## 8.2 Implications & Contributions

This research has studied the influence of some factors on knowledge sharing behavior among academics in UAE universities. As such, it makes an essential contribution to the investigation of knowledge sharing behavior in a new context in the Arab world. It also has studied it in a non-addressed sector, which is the higher education sector. Moreover, the results of this study are expected to help decision and policy makers in higher education in UAE and Arab world with a reason to support implementing knowledge sharing strategies. This would promote collaboration and exploit existing knowledge to enhance performance and sustain competitiveness. In addition, academics themselves would feel encouraged to create and share knowledge by conducting more researches and scientific studies and by publishing scholarly works as well as by exchanging their knowledge and expertise.

On the other hand, with the dearth of empirical studies on knowledge sharing in the Arab world, this study makes a number of major contributions as follows:

(1) This study is the first to address knowledge sharing in the higher education field in UAE specifically and one of the pioneers in the Arab world.

(2) It examines academics' knowledge sharing considering their important role in creating and distributing knowledge, and in helping the universities to achieve their objectives.

(3) It tests the applicability of a well-known western behavioral theory in a Middle Eastern context.

(4) It proposes an extended theoretical model of knowledge sharing behavior by using the amended theory of planned behavior, unlike previous studies.

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