# Evaluating academics' knowledge sharing intentions in Malaysian public universities

**Muhammad Ashraf Fauzi[1*], Christine Nya Ling Tan[2], Ramayah Thurasamy[3]** and **Adedapo Oluwaseyi Ojo[4]**

[1] Faculty of Industrial Management, Universiti Malaysia Pahang, Lebuhraya Tun Razak, 26300, Pahang, MALAYSIA

[2] Information Technology Programmes, Auckland Institute of Studies, Asquith Campus, 120 Asquith Avenue, Mt Albert, Auckland 1025, NEW ZEALAND

[3]School of Management, Universiti Sains Malaysia, 11800 Minden, Penang, MALAYSIA

[4] Faculty of Management, Multimedia University, Persiaran Multimedia, 63000 Cyberjaya, Selangor, MALAYSIA

e-mail: ashrafauzi@ump.edu.my* (corresponding author), christinet@ais.ac.nz, ramayah@usm.my, ojo.adedapo@mmu.edu.my

**ABSTRACT**

*Academics are the pillars of Institutions of Higher Learning (IHLs) where knowledge is created and shared. Willing academics will determine the quality of knowledge being shared between themselves and their students. In this research, a pilot study is conducted among academics in public IHLs, whereby the theory of planned behaviour (TPB) is adapted to study the academics' intention to share. Responses are obtained from 45 academics out of 399 survey questionnaires sent via email. This study uses the partial least square (PLS) method where variance-based structural equation modelling (SEM) is applied. The analysed data showed that social network, attitude, management support, social media, and perceived behavioural control (PBC) are significant factors for academics' intention to share while commitment, trust and subjective norms are not significant. Perceived cost and facilitating conditions are significant but have a negative relationship with their knowledge sharing intention. Several limitations were observed, such as the use of cross-sectional study and the lack of moderating factors. This study would facilitate IHLs in identifying the relevant conditions to be addressed when appointing academics in warranting that academics would be sharing their knowledge for the benefits of the whole community, within and outside the IHLs.*

**Keywords** Knowledge sharing; Knowledge management; Academics; Institution of higher learning; Theory of planned behaviour.

## INTRODUCTION

Knowledge management has currently caught the attention of many organisations including institutions of higher learning (IHLs). The process of creating, acquiring, disseminating, and leveraging knowledge in education institutions is deemed to be of utmost importance in gaining the edge over other competitors in IHLs (Nicolas 2004; Suhaimee et al. 2006). Equipped with knowledge, education institutions are able to compete with the rapid evolvement of technology (Malone 2002).

Knowledge sharing is the main component of knowledge management, making it the most valuable asset (Yu et al. 2010). Academics in IHLs are the main component that determines the success of knowledge sharing. Academics in this study refers to faculty members that



**https://doi.org/10.22452/mjlis.vol24no1.7**

are directly involved in research, teaching and other academic matters. Students and the community within the IHLs depend on academics and the knowledge that they possess. Academics having specialities in certain areas are sought after not only by students but also by other academics and administrative staff. Apart from doing research, in which academics are in their circle of influence, teaching has been the core duty of academics in IHLs, ever since the establishment of IHLs. In addition to academic work in IHLs, their expertise and knowledge in their respective fields can be beneficial to society by contributing ideas and being involved in societal betterment efforts. Therefore, the academics knowledge sharing is essential for knowledge dissemination and distribution to the communities both within and outside the IHLS.

The problem arises when some academics do not contribute or share knowledge. This problem is a disservice to the IHLs community and society at large, vast amounts of money have been invested in the training and development of academics. Taxpayers' money has been used to support academics in term of grants and rewards. The majority of them have made good use of the money by producing excellent and beneficial research output. However, not all these research outcomes and gained knowledge are shared. This problem should be addressed. Thus the gap identified in this study. Therefore, in order to inculcate the implementation of knowledge sharing in IHLs, this study is conducted. This study examines academics knowledge sharing intention with three main factors i.e. individual (commitment, social network and trust), organizational (i.e. management support), and technological factors (i.e. social media) as determinants.

## THEORETICAL LITERATURE AND HYPOTHESES DEVELOPMENT

Knowledge can be categorized as useful and beneficial when it is able to conform to the needs and requirements of individuals. Some knowledge is perceived to be of more value compared to others. Therefore, when valuable knowledge; especially with high monetary value is owned by an individual, he or she may hesitate to share. Two main categories of knowledge are tacit and explicit. Explicit knowledge is knowledge that can be understood by everyone regardless of their position and qualifications in an institution (Girard 2006). Whereas tacit knowledge is knowledge that resides in the human mind and must be shared for it to be known. According to Leonard and Sensiper (1998), all knowledge lies between the spectrum of tacit and explicit. Explicit knowledge is accessible, known and retrievable by the public. On the other hand, tacit can be described as knowledge that resides in the human mind and is retrieved only by the consent and willingness of the specific individual holding the knowledge.

IHLs is a primary source of knowledge for students and their stakeholders. Being knowledge intensive institutions, knowledge sharing activities are imperative (Sohaid and Daud 2009). Academics are seen to be an ideal group of people that would willingly share and transfer knowledge to their stakeholders in their day to day activities (Fauzi et al., 2018). Knowledge sharing must be groomed in the academic community so that eventually it becomes a culture of future generations. This has not been the case in IHLs where the priority of knowledge sharing (Jolaee et al., 2014). One possible reason is that knowledge sharing is not freely done in IHLs because academics would opt for individual achievement rather than achieving the IHLs mission and vision (Kim and Ju 2008). Koppi et al. (1998), assert that despite the expertise and excellent thinkers in their field of knowledge, achieving individual success will lead to the creation of barriers among peers. It is obvious when academics possess unique and specific knowledge it will result in refusal of sharing (Ramayah et al. 2013). The nature

of working individually segregates academics from peers in and outside their field of research. The tension between giving substantial commitment towards organisational excellence and individual achievement would escalate the driving factors for academics knowledge sharing intentions. These issues would form the basis for this study.

Extensive efforts have been made to enhance knowledge sharing activities in IHLs. Several developed and developing countries including Malaysia have been providing grants and funding to IHLs to develop and encourage knowledge sharing and knowledge management activities (Sohail and Daud 2009). Attention should be given by the management to academics, technology and structure equally (Steyn, 2004). The productivity of research will be enhanced with initiatives by the management and stakeholders. In terms of learning, networks and knowledge development, IHLs have a pivotal role to the public in ensuring a bright future for their communities (Mavin and Bryans 2000). IHLs is also responsible for upholding the status quo of individuals and organisations to strive hard and serve as the brainchild to solve complex challenge and problems of the society in any way possible.

Academics knowledge sharing in IHLs may depend on several factors, i.e. individual, organisational and technological. It can either build or diminish knowledge sharing intentions among academics and can sometimes be confusing for some people about its importance towards knowledge sharing. Riege (2005) has identified these three factors as knowledge barriers in the 21$^{st}$ century. The intention of academics to share depends on these factors in IHLs. The following are the hypotheses of this study:

Commitment: Having employees with high commitment is a dream for every employer and management. Academics having such commitment towards their jobs in IHLs enables the management to plan and organise necessary activities pertaining to knowledge sharing. With the tough competition in academia, IHLs having many committed academics can challenge and take charge of their path towards excellence against competitors within and outside the country (Meyer and Parfyonova, 2010). To form an attitude where academics willingly share their knowledge depends on the level of commitment they are willing to give. The top management should find ways to encourage the academics to contribute their commitment towards IHLs mission and vision. Voluntary commitment is essential because IHLs would not want academics that always take the management and the IHLs for granted. An effective method in granting academics on monetary reward should be implemented, as reward can be fairly given to successful academics in giving acceptable commitment. Commitment is directly proportional to staff output and low commitment is associated with absenteeism, low work effort and high job turnover among employee (Joiner and Bakalis 2006).

**Hypothesis 1**: Commitment has a positive effect on academics' attitudes toward knowledge sharing intentions.

Social network: Academics who have good social relationships are more open to changes and versatile to adapt to anything that is out of their circle of influence. The ones that socialise more tend to share their ideas and activities more. According to Lacy and Sheehan (1997), academics that have substantially good relationship with their colleagues are more satisfied in their work life and have significantly positive relation in sharing their knowledge.

Having more connections and networks within or outside an IHL will make the knowledge more open to academics who are involved within the network. It will induce a person to share what they know when a relationship is built among a group that share materials even

outside of their expertise/discipline. The social network built in IHLs will have a positive effect on academic's attitudes and subjective norms towards their intention of knowledge sharing. Feeling comfortable and less vulnerable when two academics share is a result of a positive relationship among two people with a good emotional bond. When more people share, it creates a community of practice where they have common interest and goals towards achieving their objectives. This group enables academics to stage discussions and meetings on their topics of interest and allowing knowledge sharing session to be held.

**Hypothesis 2**: Social networks have a positive effect on academics' knowledge sharing intentions.

Trust: Having trust is essential in any profession. In academia, trust is even more needed because everything is related to intellectual property. Literature suggests that trust is the dimension that is most studied in knowledge sharing (Wang and Noe, 2010). Academics true potential along with commitment, cooperation and individual relationship cannot be improved with the absence of trust (Jolaee et al. 2014). Knowledge is perceived as important and regarded as confidential and exclusive; thus academics will not share knowledge unless they know the others in person. Trust should have been built among them for tacit knowledge to be disseminated. Therefore, to encourage the implementation of knowledge sharing, trust should be created to prevent from jeopardizing academics positions and status in IHLs. Trust could also prevent the misuse of other people's knowledge for other individual's benefits. Management should play a role in instilling trust among academic staff such as by involving in academic programs directly that can develop trust towards management. As for academics, they are also responsible in developing trust that can be a strong bonding mechanism for successful knowledge sharing. The best form of trust comes from the inner self of academics rather than forcing them to be a trustworthy person.

**Hypothesis 3**: Trust has a positive effect on academics' intention toward knowledge sharing.

Management support: Academics must have the necessary support for them to share knowledge. There are policies, rules and regulations set for academics by the management of IHLs. Therefore, the support from the management is deemed as one of the most important aspects for knowledge sharing. In IHLs, management support would seem to be as direct involvement of management in IHLs knowledge programs and activities. For example, the involvement of the top management of IHLs would include the vice chancellor or rector attending a professorial lecture organised by any department or unit in that particular IHL. Even though the top management is from administrative position or academics from a different area of research, with such a show of support, academics will embrace these knowledge sharing initiatives and this will result in voluntary participation (Kang et al., 2008). It is vital for academics to see and understand the support that they get from the management as this will encourage and convince academics to share their knowledge with others in the IHL (Tan and Md Noor, 2013).

**Hypothesis 4**: Management support has a positive effect on academics' subjective norm towards knowledge sharing intentions.

Social media: The use of mobile communication enables academics to be aware of technological changes and trends. Social media requires no effort for academics to deliver any information and knowledge (Osatuyi 2013). With the use of social media, communication and networking within IHLs and outside as well as better interaction with students can be realised. LinkedIn and Twitter are among the social media applications

extensively used by society which academics can use to share knowledge. To keep up and utilise the rapid evolution of social media, the use of modern technologies like social media such as personal computers, phones, and other electronic gadgets have improved rapidly over the years. Compatibility of using social media together with recent technology as tools of using social media should be renewed and altogether adapted for better knowledge sharing activities in IHLs, as academic that is perceived to be in control of their behaviour towards social media are better of in engaging with knowledge sharing.

**Hypothesis 5**: Social media use has a positive effect on academics' perceived behavioural control toward knowledge sharing intentions.

Attitude toward knowledge sharing: In TPB, attitude is a major factor for academics knowledge sharing behaviour. It is regarded as an individual's negative or positive belief towards a specific behaviour. Ajzen, 1991). Recent studies have shown that attitude has been established as an essential determinant of intention of knowledge sharing in organisations (Akhavan et al. 2015). This is supported by Bock et al. (2005) who also say that attitude is a determinant for knowledge sharing in public organisations which include IHLs. Academics with favourable attitudes towards knowledge sharing will produce a well-rounded individual who is willing to share knowledge with others in IHLs.

**Hypothesis 6**: Academics with positive attitude have positive effect on knowledge sharing intention.

Subjective norm: Since the inception of the theory of reasoned action (TRA), subjective norm has been a strong determinant of an individual's intention. It is known as other people's perception of our behaviour. In IHLs context, where academics are expected to share, it is the perception that colleagues and management expect academics to share or not share knowledge. Subjective norm is known as normative belief, a belief of what others might think of a particular behaviour a person perform (Lai et al. 2014). A community where a person resides or work in will form a person's behaviour. In IHLs, the community creates a norm where knowledge sharing is considered as a culture, thus inducing academics to share. Academics will have negative thoughts and feelings if they are not willingly sharing as others do. Subjective norm is therefore considered as an important factor for academics to share (Fauzi et al. 2019b).

**Hypothesis 7**: The extent of favourable subjective norm towards knowledge sharing has a positive effect on academics' intention to share knowledge.

Perceived behavioural control: A construct added to TRA in 1991, perceived behavioural control (PBC) is a variable renewing its predecessor, TRA. PBC is the degree of effort for a person to perform a behaviour to the extent of its level of difficulty (Ajzen and Madden, 1986). PBC brings a new dimension towards predicting individual behaviour, taking in academics context the ability to perform a behaviour they can control is important (Manstead and Van Eekelen 1998). If academics perceive that knowledge sharing requires little or no effort, they would be able to perform it better, thinking that less time and energy is required to achieve it. Academics having fundamental knowledge sharing intentions over their belief system that they can control such behaviour will produce sufficient effort and optimum commitment even though challenges and obstacles are presented to them while sharing knowledge. Academics competent in using social media would have more sense of their ability to share knowledge.

**Hypothesis 8**: The level of perceived behavioural control has a positive effect on academics' intention to share knowledge.

Perceived cost: In IHLs, sharing too much can be costly as the dissemination of knowledge that a person own can affect one's position, status and job security negatively. When knowledge becomes common, self-interest aspects important to academic staff such as promotion and rewards are at stake (Casimir et al. 2012). The belief that sharing might affect these aspects will hinder the implementation of knowledge sharing. The thought of risk associated with sharing will not do knowledge sharing activities any good in IHLs (Riege 2005). Due to the intangible nature of knowledge, a unique and new found knowledge can be claimed as an individual discovery because there is no evidence to prove otherwise. When intellectual property is registered, or the discovery is published then only can the knowledge be shared. It is the perception of some academics that knowledge is an asset that can be easily stolen or plagiarised. Therefore, perceived cost is a new variable that can be recognized as a factor affecting academic knowledge sharing.

**Hypothesis 9**: The level of perceived cost has a negative effect on academic's intention toward knowledge sharing.

Facilitating conditions: knowledge sharing can be realized when there are facilitating factors in the process of sharing. The surrounding environment has considerable support to facilitate the occurrence of a behaviour (Triandis 1980). In IHLs, the intention and behaviour of academics in knowledge sharing can be related to the availability of facilitating conditions that are able to stimulate and encourage knowledge sharing activities. They are external factors that are mostly categorized as information technology (Aulawi et al. 2009). Information technology facilitates the process of research, learning and teaching in IHLs. The process of sharing can be enhanced by adopting the benefits of technology. An example of facilitating conditions are global virtual teams, which enables effective communication and learning towards knowledge sharing in cultural diversity, geographical and organisational differences of its members. Channels of communication, media and feedback mechanisms are among facilitators for an effective knowledge sharing.

**Hypothesis 10**: Facilitating conditions have a positive effect on academic's knowledge sharing intention towards knowledge sharing.

## METHOD

The quota sampling method is applied to three groups (i.e. professors, associate professors and senior lecturers). These three groups of respondents are divided into quotas of 30:30:40 respectively. Every one of them is from public universities. As this is a small-scale pilot study, it provides a basis for understanding the critical factors in academics knowledge sharing of Malaysian IHLs. The outcome will indicate which variable could be the important factors that will eventually pave the way for the full-scale study.

All items used in this survey are adapted from a previously validated study. The set of items were sent to experts in knowledge management for face and content validity. The importance of sending the questionnaire items to a panel of experts in knowledge management and languages is imperative to avoid time wastage if found in later stages of the study that the questionnaire is not suitable and does not meet the requirements for the chosen set of respondents. Table 1 lists down the constructs administered in this study and

the source it is adapted from. The adaptation of the items are from the following authors, commitment (Allen and Meyer, 1990), social network (Kim and Lee 2006), trust (Mcallister 1995), management support (Sveiby and Simons 2002), social media use (Thong et al. 2002), perceived cost (Casimir et al. 2012), facilitating condition (Thompson et al. 1991), attitude, subjective norm and intention (Bock et al. 2005) and perceived behavioural control (Wu and Chen 2005).

Table 1**:** List of Constructs Adapted

| Construct | No of items | Source adaption |
|---|---|---|
| Commitment | 6 | Allen and Meyer (1990) |
| Social network | 4 | Kim and Lee (2006) |
| Management support | 5 | Sveiby and Simons (2002) |
| Social media | 7 | Thong et al. (2002) |
| Attitude towards knowledge sharing | 5 | Bock et al. (2005) |
| Subjective norm towards knowledge sharing | 6 | Bock et al. (2005) |
| knowledge sharing intention | 5 | Bock et al. (2005) |
| Perceived behavioural control | 5 | Wu and Chen (2005) |
| Perceived cost towards knowledge sharing | 6 | Casimir et al. (2012) |
| Facilitating conditions | 4 | Thompson et al. (1991) |
| Trust | 4 | Mcallister (1995) |
| Total | 57 | |

The instrument uses Likert scale, ranging from 1=strongly disagree to 7=strongly agree in order to measure the accuracy of the responses (Finstad 2010). Cox (1998) suggested earlier that using a 7-point scale is the most optimal and ideal, justifying that it would cover all information on metric 7-point scale is the second best after 10-point scale due to respondent preferences (Preston and Colman, 2000). It would be able to analyse and deduce the most optimal response in an item by applying electronic distribution approach, using the Internet via email to reach potential respondents.

The items are designed to be positive. Several potential shortcomings could be avoided by not using negatively worded items, which have been questioned by many scholars (Lindwall et al. 2012). Roszkowski and Soven (2010) made a clear assertion of not using negatively worded items. Several studies have shown that applying negatively worded items can result in respondents misunderstanding, wrongly interpreting the words used and answering wrongly (Marsh et al. 2010; Lindwall et al. 2012).

Partial least square structural equation modelling PLS-SEM was used for the data analysis. PLS-SEM is relatively new compared to Covariance based SEM. Both serve different purposes for a different context and research paradigms, in which must be understood by researchers before engaging in any of the two SEM (Hair et al. 2014a). This research used PLS based on several reasons:

(a) This study data is not normal due to the diverse data obtained from academics in an inclined set of respondents which are the academics in IHLs. This is supported by Hair et al., (2014b) where studies in social sciences involve non-normal data which does not meet the multivariate normal distribution. PLS-SEM has the ability to work with non-normal data based on its algorithm that can transform the non-normality to conform to the central limit theorem (Cassel et al., 1999).
(b) This study is based on theory development. PLS-SEM is suited for conditions where researchers want to develop or extend an existing theory, rather than testing or confirming a theory. This study focuses on academic's intention to share, where

several factors are tested to determine the significance of academics knowledge sharing intention that leads to academics sharing behaviour. Academics research productivity, perceived cost and facilitating conditions are among the variables included from the validated model studied from the literature (Bock et al. 2005) to develop academics knowledge sharing behaviour that leads to research productivity.

(c) Ability to accept a small sample size. PLS-SEM is an extraordinary tool designed to tolerate sample size without compromising the model fit and statistical power (Chin, 2010). Lack of sample size in research will create problems of reliability due to model fit, statistical power and parameter estimation (Shah and Goldstein, 2006). Even more, this study's model is rather complicated with several constructs relate to academics knowledge sharing intentions, which it can be handled by PLS (Hair et al. 2014a) PLS-SEM is able to generate considerable levels of statistical power and produce better behaviour of convergence compared to CB-SEM (Henseler 2010).

## RESULTS

### Descriptive statistics

Out of the total 399 questionnaires sent out to all academics of public universities, 45 respondents replied with no rejections. All the respondents are professors, associate professors and senior lecturers with the quota close to the 30:30:40 sampling with 22:22:56 respectively. Meanwhile, according to gender, it is ideal with 22 males and 23 females. In term of race, Malay, Chinese, Indian and others make up the sample with a percentage of 75.6%, 8.9%, 4.4% and 11.1% respectively. All respondents have PhD degrees, except for one with masters. The number of years working is diverse from 1-5 years in service and those who have been working for more than 26 years in academia. Table 2 summarises the study's descriptive statistics.

Table 2: Descriptive Statistics

| | Items | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 22 | 48.9 |
| | Female | 23 | 51.1 |
| Race | Malay | 34 | 75.6 |
| | Chinese | 4 | 8.9 |
| | Indian | 2 | 4.4 |
| | Others | 5 | 11.1 |
| Qualification | PhD | 44 | 97.8 |
| | Masters | 1 | 2.2 |
| Position | Professor | 10 | 22.2 |
| | Associate Professor | 10 | 22.2 |
| | Senior Lecturer | 25 | 55.6 |
| Years of working | 1- 5 | 5 | 11.1 |
| | 6 – 10 | 9 | 20.0 |
| | 11 - 15 | 12 | 26.7 |
| | 16 - 20 | 9 | 20.0 |
| | 21 - 25 | 5 | 11.1 |
| | 26 and above | 5 | 11.1 |

### Measurement Model

The first part of PLS-SEM is to assess the measurement model, consisting of the convergent and discriminant validity. The measurement model elaborates the latent variables in a given

study. It addresses the reliability and validity of the items. The model tends to investigate the items convergence or in other words to identify whether individual items strongly converge among them to represent constructs that they are supposed to measure (Shah and Goldstein, 2006). There are three aspects to convergent validity test, the loadings, average variance extracted (AVE) and composite reliability (CR).

Factor loading is to measure the items on its reliability acceptance in measuring a construct of interest. The value of loading should be from 0.5 to 0.9 with values above 0.7 having better confidence in the item's convergence. In terms of reliability, AVE and CR are the aspects to be analysed. The threshold value of both AVE and CR must at least meet 0.5 and 0.7 respectively (Hair et al. 2014).

Table 3 shows the convergent validity of this study. Most of the loadings have values exceeding 0.7, with only seven items (AT2, CO1, CT4, CT5, FC1, SM1 and SN4) having values below than 0.7 but meet the requirement of exceeding more than 0.5. Two items have been deleted, having a value less than 0.5 (CT3 and CT6). The AVE of the entire construct is accepted having to range from 0.536 to 0.8281. The CR also met the threshold value ranging from 0.8134 to 0.9600.

Fornell and Larcker's (1981) criterion is used to determine the discriminant's validity. The square root value of the AVE indicates that all items are loaded on their own assigned construct than other constructs in this study, as asserted by Gefen et al. (2000). Table 4 shows the discriminant validity where all the square root of AVE are higher than their correlation values of other variables, thus suggesting that this study met the required discriminant validity.

## Structural Model

The structural model of PLS is assessed to determine its path coefficient. Figure 1 shows the result of the structural model. The key information that must be considered includes the significance, relevance of coefficient, algebraic sign and the magnitude (Hair et al. 2014a; Urbach and Ahlemann 2010). The path coefficient is determined by applying the resampling technique of bootstrapping (Efron 1979).

The path coefficient values range from -1 to +1 with values close to +1 shows strong positive relationship while -1 indicate a strong negative relationship. The closer the value is to 0, the weaker relationship existed among the variable (Hair et al., 2014a). In a case where the algebraic sign differs to the relationship assumed based on the theory, the hypothesis is not supported. Urbach and Ahlemann (2010) suggested that the value of path coefficient be at least the value of 0.05.

Result from the structural analysis shows that attitude and perceived behavioural control (H6 and H8) have a positively significant relation to academics knowledge sharing intention. Meanwhile perceived cost and facilitating condition (H9 and H10) have significant negative relation. Subjective norm (H7) is not significant towards the intention to knowledge sharing. For determinants of attitude, only social network (H2) is significant while commitment and trust are not (H1 and H3). Management support (H4) is a significant factor towards subjective norm and social media use (H5) is significant towards perceived behavioural control.

Table 3: Convergent Validity

| Construct | Items | Loadings | AVE | CR |
|---|---|---|---|---|
| Attitude | AT1 | 0.822 | 0.765 | 0.941 |
| | AT2 | 0.692 | | |
| | AT3 | 0.939 | | |
| | AT4 | 0.946 | | |
| | AT5 | 0.945 | | |
| Commitment | CO1 | 0.628 | 0.711 | 0.936 |
| | CO2 | 0.844 | | |
| | CO3 | 0.865 | | |
| | CO4 | 0.873 | | |
| | CO5 | 0.889 | | |
| | CO6 | 0.926 | | |
| Perceived cost | CT1 | 0.912 | 0.536 | 0.813 |
| | CT2 | 0.855 | | |
| | CT4 | 0.545 | | |
| | CT5 | 0.532 | | |
| Facilitating condition | FC1 | 0.655 | 0.738 | 0.917 |
| | FC2 | 0.956 | | |
| | FC3 | 0.937 | | |
| | FC4 | 0.855 | | |
| Knowledge sharing Intention | IN1 | 0.859 | 0.778 | 0.946 |
| | IN2 | 0.897 | | |
| | IN3 | 0.863 | | |
| | IN4 | 0.896 | | |
| | IN5 | 0.894 | | |
| Management | MS1 | 0.888 | 0.782 | 0.947 |
| | MS2 | 0.856 | | |
| | MS3 | 0.839 | | |
| | MS4 | 0.914 | | |
| | MS5 | 0.921 | | |
| Perceived behaviour control towards knowledge sharing | PC1 | 0.938 | 0.828 | 0.960 |
| | PC2 | 0.936 | | |
| | PC3 | 0.960 | | |
| | PC4 | 0.885 | | |
| | PC5 | 0.825 | | |
| Social media use | SM1 | 0.547 | 0.689 | 0.928 |
| | SM2 | 0.709 | | |
| | SM3 | 0.887 | | |
| | SM4 | 0.917 | | |
| | SM5 | 0.945 | | |
| | SM6 | 0.902 | | |
| Social networks | SN1 | 0.870 | 0.608 | 0.860 |
| | SN2 | 0.827 | | |
| | SN3 | 0.725 | | |
| | SN4 | 0.682 | | |
| Subjective norm toward knowledge sharing | SU1 | 0.789 | 0.611 | 0.904 |
| | SU2 | 0.788 | | |
| | SU3 | 0.791 | | |
| | SU4 | 0.799 | | |
| | SU5 | 0.733 | | |
| | SU6 | 0.785 | | |
| Trust | TR1 | 0.908 | 0.762 | 0.927 |
| | TR2 | 0.921 | | |
| | TR3 | 0.803 | | |
| | TR4 | 0.855 | | |

Table 4: Discriminant Validity

| | AT | CO | CT | FC | IN | MS | PB | SM | SN | SU | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AT | **0.875** | | | | | | | | | | |
| CO | 0.468 | **0.843** | | | | | | | | | |
| CT | -0.296 | -0.090 | **0.732** | | | | | | | | |
| FC | 0.348 | 0.424 | 0.119 | **0.859** | | | | | | | |
| IN | 0.634 | 0.338 | -0.482 | 0.171 | **0.882** | | | | | | |
| MS | 0.350 | 0.824 | -0.184 | 0.530 | 0.393 | **0.884** | | | | | |
| PB | 0.573 | 0.454 | -0.294 | 0.327 | 0.834 | 0.485 | **0.910** | | | | |
| SM | 0.465 | 0.364 | -0.274 | 0.258 | 0.451 | 0.332 | 0.632 | **0.830** | | | |
| SN | 0.572 | 0.712 | -0.081 | 0.387 | 0.360 | 0.560 | 0.503 | 0.539 | **0.780** | | |
| SU | 0.667 | 0.426 | -0.336 | 0.465 | 0.643 | 0.514 | 0.623 | 0.295 | 0.398 | **0.781** | |
| TR | 0.399 | 0.670 | -0.055 | 0.353 | 0.368 | 0.537 | 0.490 | 0.390 | 0.692 | 0.254 | **0.873** |

AT=attitude, CO=commitment, CT=Cost, FC=Facilitating Condition, IN=intention, MS=management support, PB=perceived behavioural control, SM=social media, SN= Social network, TR= Trust

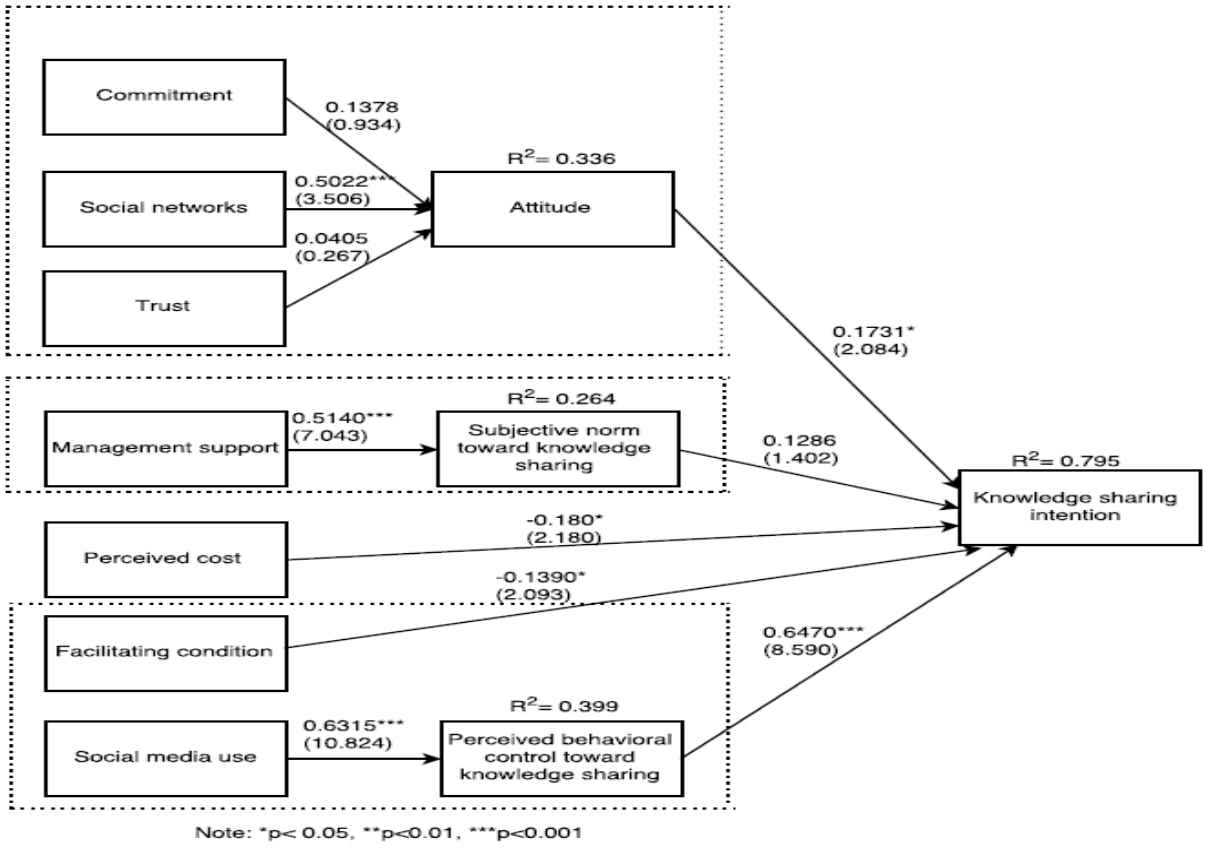


Figure 1**:** Structural Model

## DISCUSSION

The main objective of this research is to determine the factors that influence the intention of academics towards knowledge sharing in Malaysian public universities. The study has found the predictors of academic's intention, attitude and perceived behavioural control

have significant positive effects; perceived cost and facilitating condition have negative significant effects; while subjective norm was not significant. For determinants of attitude toward knowledge sharing, only social network has significant effect while commitment and trust does not. For determinants of subjective norm and PBC, management support and social media use have significant effects respectively.

In the current competitive climate in academia, IHLs have been pushed to compete into the everlasting workforce demand. A country's development and progress for the young minds and brilliant talent, as well as the society at large, are garnered by the tremendous load and contribution by IHLs.

Findings of the hypotheses testing were discussed as follows:

**Commitment**

Academics commitment is an important aspect of ensuring the implementation of knowledge sharing. The outcome of the study shows that commitment is not a significant factor of academics knowledge sharing intention. The most probable reason for this study given insignificant result is due to the sampling which consists of all public IHLs academics. Nature of academics is flexible in term of its job, as long as the fundamental duties are covered such as class, publication, supervision and etc. Hence, engaging in other extra knowledge sharing activities are deemed not to be compulsory for academic staff to give commitment. Academics would just have to fulfil the basic annual key performance index (KPI) for them to achieve stipulated yearly target. The result is supported by previous study by Khalid et al. (2012), that commitment having no significant result on attitude.

**Social network**

Study reveals that an academic's social network significantly effects their knowledge sharing intention. Their social network within and outside IHLs would open more opportunities to interact with other experts either in the same field or other fields of knowledge. Similar results were obtained by Jolaee et al., (2014), Iqbal et al., (2011) and Chow and Chan (2008) whom that found social network as a significant factor for academics knowledge sharing intention. Academics in Malaysia have connections due to several initiatives by the government such as introducing grants, consultation and projects which must involve academics from different IHLs. These initiatives are seemed to be an excellent step towards encouraging the networking among academics either within an institution or inter institutions thus providing opportunities for knowledge sharing.

**Trust**

Trust in this study refers to how academics trust their peers in terms of sharing what they perceive as important knowledge. Surprisingly, trust was found to be an insignificant factor for academics knowledge sharing intention. Similar findings from Kim and Ju (2008), Jolaee et al., (2014) and Chin (2014), shows trust as an insignificant factor for knowledge sharing intention. The extent of not trusting other academics with their knowledge especially tacit knowledge is low, probably due to the fact that exploitation of the knowledge gained benefits the academics directly rather than IHLs goals and targets. Being individualistic also does not help in trusting other academics. Another factor that may contribute to this is the local culture. A high level of inhibition among Malaysians especially the Malays could have contributed to the insignificance of trust. There is a term specifically in Malay explaining this as "*malu"*. It is a trait that regards shyness as a virtue among the Malays (Mastor et al. 2000).

**Management support**

Management support in this study refers to the direct physical and emotional support from the top management towards academic knowledge sharing intention. In this study, as expected, management support is significant. Academics willingly and voluntarily share their knowledge and expertise when the top management encourage academics to be involved in IHLs knowledge sharing activities. Support from previous studies shows this to be a significant factor towards academics knowledge sharing intention (Lin 2007; Tohidinia and Mosakhani 2010; Jolaee et al. 2013).

**Social media use**

The extent to which academics utilize social media in applying knowledge sharing and how it determines knowledge sharing intention is assessed next. It is shown that social media use is a significant factor to PBC which is also a significant factor for academics knowledge sharing intention. Bhagwatwar et al., (2013), have also shown in their study that social media is an important determinant on academics knowledge sharing intention. The ability to cope with the changes of in social media is crucial for academics to update and refresh their knowledge. The academe worldwide and top IHLs are utilising social media as a communication medium and also to acquire the latest information in research activities. Academics are knowledgeable groups who are adopters of current technologies can facilitate knowledge sharing in IHLs. Following the trends of the mainstream community in academia is something that academics should be able to do.

**Attitude**

Attitude, which is one of the most important predictors of academics knowledge sharing intention refers to their attitude towards knowledge sharing intention. Attitude has three predictors of its own (commitment, social network and trust). IHLs have to consider attitude as an important factor when hiring academics. In Malaysia, some government employees are hired on a contract basis. This period can be used to assess their attitude towards IHLs knowledge sharing activities. It is an individual trait which has been proven from previous studies to be significant and has an impact on knowledge sharing (Ramayah et al. 2013; Jolaee et al. 2014; Ajzen 1991).

**Subjective norm**

The subjective norm in this study is the perception of academics towards the support of the management. Unexpectedly, it is found to be insignificant for academics' intention to share. Academics do not perceive management as providing sufficient support for their knowledge sharing activities. The context of the study might have yielded this unexpected outcome. Academics in public IHLs have fewer meetings with top management (vice chancellor, rector, dean and director). Having a significant number of academic staff such as in public IHLs results in less contact and face to face meetings with the top management. This, in turn, makes subjective norm an insignificant factor. Previous studies have found subjective norm as a significant construct in determining academics knowledge sharing intention (Bock et al. 2005; Iqbal et al. 2011).

**Perceived behavioural control**

PBC refers to academics perceiving their ability to execute knowledge sharing. The result shows that PBC has the strongest path coefficient toward academics' intention. When academics perceived to have significant control over the ability to share, they would be able to execute all the steps necessary to realise the execution of knowledge sharing activities. Having unique intellectual minds, academics are in control of their behaviour, integrate with strong abilities and skills academics would share when they know that sharing will increase

their knowledge in specific areas. Knowing beforehand that being academics would require them to teach, which is a direct knowledge sharing activity; It would infer the significance of PBC as a determinant of knowledge sharing intention. This is supported from studies by Akhavan et al. (2015) and Bock et al. (2005) which showed the same result.

**Perceived cost**

Perceived cost refers to academics perceiving knowledge sharing as a having a cost implication to their academic work. Either in terms of time, promotion, status, and other monetary costs that can be a result of them sharing their knowledge. The path coefficient is a negative value indicating a negative relationship between perceived cost and knowledge sharing intention. Academics do not think that sharing will cost them in terms of effort, time and probably their promotion based on the negative value of the path coefficient. This is not consistent with a previous study by Casimir et al. (2012), where they found that academics perceive knowledge sharing as a having a cost implication to their work.

**Facilitating condition**

Facilitating condition refers to the information and technology that facilitates knowledge sharing intention. These information technology include softwares that can be utilize by academic in conducting research or hardwares such as machine and network capabilities. Similar to perceived cost, the path coefficient gave a negative value indicating a negative relationship between facilitating condition and knowledge sharing intention. It can be inferred that information technology has an adverse effect on academic knowledge sharing intention. It poses a hindrance to academics knowledge sharing. This study found that academics do not see information technology as facilitating knowledge sharing intention. This confirms the finding by Aulawi et al. (2009) on the insignificance of facilitating condition on knowledge sharing intention. This can be explained by the complicated nature of using such technology. Professors being a majority of the respondents are senior academics who are used to traditional ways of teaching and doing research. Using new software and applications such as the reference managers and plagiarism checkers can be troublesome for these academics. Other previous studies show the support of facilitating condition as a significant variable (Fauzi et al. 2019; Lai et al. 2014; Wu and Zhu 2012; Jeon et al. 2011).

## CONCLUSIONS

The outcome of this study has shed some light on the importance of determining the three factors that can determine knowledge sharing intentions of academics (individual, organisational and technological factors). An integrated model of academics knowledge sharing by combining TPB and SCT is proposed in this study. Among the factors listed, social network is a significant determinant of academics' attitude. Necessary steps should be taken to stimulate academics social networking either within or outside the IHLs where they work. Commitment and trust are not significant may be due to the context of this study which only involves public IHLs academics. Management support and social media are significant determinants for subjective norm and PBC respectively and eventually academics knowledge sharing intention.

Meanwhile perceived cost and facilitating conditions are significant but are negatively related to academics knowledge sharing intention. As for the three factors of TPB, attitude and PBC, these are significant factors for intention while subjective norm is not. It is therefore paramount that every stakeholder plays their part in ensuring that knowledge is shared. Any factors that contribute to the enhancement of knowledge sharing throughout

public universities should be highlighted and acted upon, as the benefits can be felt either directly or indirectly by society.

Theoretically, this study has inferred several points. Firstly, this study proposes a model that integrates individual, organisational and technological factors of academics in the context of Malaysian public universities. Among the factors that affect academics intention to share, PBC is the most significant. The self-ability of academics proved that they could control themselves to share what they think is necessary to the community. The ability to control their behaviour significantly affects their knowledge sharing intention. This self-ability when paired with competent use of SM will positively affect their knowledge sharing intention. Academics who use social media have better control of their ability which impacts on their behaviour to share knowledge.

The integration of TPB and SCT in this study is to determine factors that drive knowledge sharing intention among academics in Malaysian public IHLs. This fills a gap in the area of knowledge management, by integrating the individual, organizational and technological factors in academics knowledge sharing intention. Linking two theories by integrating all the possible determinants of academics intention to share have contributed to the body of knowledge. The three factors of individual, organisational and technological aspects have been identifies as the antecedents of academics intention. The classification of commitment includes social network and trust as the antecedent of attitude for individual factors, management support as the antecedent of the organisational factor while social media as antecedent of technological factor. The outcome of this study can improve many areas such as improving the research productivity among academics and inculcating knowledge sharing culture in Malaysian IHLs.

Several practical implications can be derived from this study. Firstly, the top management can determine which of the three factors (individual, organisational and technological) is the most significant factor affecting academic's intention to share. The most important factor can be the main consideration when hiring new academics or deciding whether to keep or to retrench academics. Academics, especially professors are high cost hires, if they refuse to participate in knowledge sharing initiatives, this will be a predicament for the IHLs. It can be done by incorporating questions related to the findings of this study into the current psychometric test that was conducted for new government agencies recruits. (Rohaidi 2017). Taxpayers do not get the best value for their money when academics do not share their knowledge. Academics should give back to the people and community by actively participating in knowledge sharing. Contract staffs are sometimes hired to fill in the vacancy left by permanent staff, in order to mitigate the high cost of hiring permanent academics (Chudgar et al. 2014). Academics should share in whatever ways possible such as directly sharing in classrooms or actively participate in organisations or community efforts that need their expert input.

The second implication is the relationship between academics' attitude and their knowledge sharing intention. The result shows that social network is the significant factor for knowledge sharing intention among academics. Top management can give serious attention to improve academics networking either within or among IHLs. Working with private organisations in any related industry based on academics expertise would also give massive benefits to the betterment of academics and their IHLs image. It is instrumental that academics have good networking either in terms of research collaboration, consultation and project related work. In order to assess academics networking capabilities, annual appraisal criteria should include these as weightage. Rewards can be given to academics that achieve certain stipulated

scores that have been set. Using these measures, IHLs can monitor and identify the academics that give extra effort to improve networking.

Another note from this study is the role of management support in encouraging academics intention to share. In public universities, the current challenges faced by academics have been demanding and merciless. The requirements and expectations on academics to produce output from their knowledge garnering activities in terms of publications and other forms of cognitive-based outputs are relentless and ever increasing. By empathising with the plight of academics, the management can come up with genuine solutions and methods to encourage academics to share knowledge freely and voluntarily.

This study is not without its limitations. Firstly, the application of the cross-sectional survey offers weak feedback from the respondents as it only accounts for their opinion at one point of time. The study has adopted a cross-sectional survey due to model complexity and the questionnaire length of 80 items. Even though applying a cross-sectional study, the response rate is considered rather low with 13 percent.

Secondly, this study has not tested any factors that can moderate the academics knowledge sharing intention. Future studies can test the effects of gender, academic position (professor vs senior lecturer) and academics qualification and their effects on knowledge sharing intention. It has been noted that in certain countries, research output is determined by gender, which suggests an important variable that can moderate academics intention (Asmar 1999).

Next, this study is only a pilot study; hence generalizability cannot be done. The small sample size of 45 respondents is relatively small. Hertzog (2008) stated that a pilot study should achieve 10 percent response from the full sample, even if PLS-SEM is capable of handling small sample size. Nevertheless, the study is able to infer that academics in Malaysian public universities are affected by certain variables when it comes to the sharing of knowledge.

## ACKNOWLEDGEMENT

The authors would like to thank the Ministry of Education (MOE) for funding this research under the Fundamental Research Grant Scheme (FRGS) (Grant no. 64207-73864).

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