Regression Analysis of Knowledge Sharing Behavior

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Abstract

This paper aims to explore three predictors of Theory Planned Behaviour (attitude, subjective norm and Perceived Behaviors Control) towards the knowledge sharing behavior. Knowledge sharing behavior has become a major issue and is commonly highlighted in the study of knowledge management. Researchers have given serious attention to identify the determinants of knowledge sharing behavior. Employees have to be motivated to share their knowledge and experience in the workplace. In order to influence knowledge sharing behavior among employees, organizations need to understand the tools that drive employees to share their knowledge willingly with others. This paper discusses three predictors of Theory Planned Behavior which have significantly influenced knowledge sharing behavior. A questionnaire survey was administered to the selected group of employees from tourism and hospitality industries in Cyberjaya Malaysia. The 207 employees were participating in this research study. The instrument was adapted from previous study. The result reveals that an absence of attitude is not significantly related to knowledge sharing behavior. However, subjective norms and perceived behavior control relate significantly. This study implies that changes of attitude in individual promote and encourage knowledge sharing behavior positively. The findings of this study proposed to the organization to influence employee to embed the knowledge sharing culture to the employee. The organization needs to change the attitude of employee in term of willingness of them to share knowledge with co-workers. The possibilities of this circumstance happen because of lack awareness of knowledge sharing benefits, lack of rewards and recognition to their contribution and competition among themselves which need to do further study.

Keywords: Knowledge Sharing Behaviour, Theory of Planned Behavior, Attitude, Subjective Norm, Perceived Behavioral Control

Introduction

Knowledge plays as a valuable intangible asset for creating and sustaining advantages for individuals as well as for organizations. Essentially, knowledge belongs to an individual. It is created only by individuals while organization cannot create knowledge on its own without individuals (Nonaka &Takeuchi, 1995). Knowledge can be created either through experience and skill known as tacit knowledge (Mahroeian & Forozia, 2012) or in written and stored into programs, patents, diagrams and information technology (Keskin, 2005) and is called as explicit knowledge. It is important to the organization to carefully manage knowledge to make knowledge accessible and usable to an individual for development and organization performance. Knowledge sharing is needed for business competitive capability, increase productivity, performance (Brown & Brudney, 2003), improved efficiency, cost reduction and improved quality in organization (McAdam & Reid, 2000). Most organizations realize that knowledge sharing should be a norm and a culture in the organization.

The utmost challenge facing an organization is employees' knowledge sharing behavior. Some employees are unwilling to share their knowledge and ideas with anyone (Raja Yaacob, Abdullah, Raja

Yaacob, Amin, Abu Bakar, & Mohamed Noor, 2011). This is because people feel insecure if they share their knowledge with others will make them no longer an important person who holding such knowledge. In addition, employees have somehow set in their mind that more they know the more important they become which may influence their behavior to only partially share or hide the knowledge.   Furthermore, Raja Yacoob et al. (2001) also discussed a sense of distrust and overriding fear that other person will be credited or awarded for their work and ideas. A study conducted by Che Rusuli, Tasmin, & Hashim, (2011) also revealed that people who share some of their experiences may face possibility that other people may use it out of context, misapply it and disperse it as it is their own without giving any credits to the original person. In another context, some people are also afraid in holding the accountability if anything goes wrong with their knowledge that has been dispersed. Study has shown that people who lack of self-efficacy is not confident enough to share their idea and knowledge. They feel fear to share, feel lacking or incapable of doing jobs effectively when someone seeks for their ideas and knowledge. Therefore, all of the situations discussed above critically challenge manager and organization to promote and encourage knowledge sharing behavior. In response to the discussion above, the objective of this study is to further explore attitude, subjective norms and perceived control behavior predicted to knowledge sharing behavior with the fundamental Theory of Planned Behavior as the governing theory..

Knowledge sharing is a set of behavior closely related to a prosocial behavior. A prosocial behavior refers to a positive social acts carried out to produce and maintain the well-being and integrity of others (Brief & Motowildo, 1986). In knowledge sharing context, prosocial behavior particularly refers to willingness of individuals to share with others that they have acquired or created (Yu, Lu & Liu, 2010). While for Kankanhalli, Tan, and Wei, (2005) it is a pleasure in helping others, facilitates, willingness, voluntary and solicitation in knowledge sharing. In this study, knowledge sharing behavior refers to willingness to knowledge sharing (Kaser & Miles, (2002). It has described to be voluntary which cannot be forced by others (Yang, 2007). Teng and Song (2011) on the other hand, divided willingness into two categories, solicited and voluntary in knowledge sharing. Solicited is sending and receiving of requests for knowledge, as well as the subsequent fulfilment of these requests. While voluntary refers to the sending and receiving of knowledge without any prior solicitation. Voluntary behavior can also be referred to as willingness to share knowledge with knowledge creation, share and transfer of the knowledge without being forced or influenced by others. In other words, knowledge sharing cannot be forced but can only be encouraged and facilitated (Bock & Kim, 2002). From the discussion above, this study reviews knowledge sharing behavior as a willingness to share knowledge without expecting something in return.. An individual is willing to put effort and take risk to share and learn from others.

The Theory Planned Behavior (TPB) is an established theory that is able to explain knowledge sharing behavior. Empirical studies found that the TPB has been one of the most influential theories in explaining and predicting behavior, and it has been evidenced to be able to predict a wide range of behaviors. For example, Chen, Chen, & Kinshuk, (2009) explored social network ties, learners' attitude, learners' beliefs of their capabilities and subjective norms relating to knowledge sharing intention in virtual community context. The results showed that all the variables tested have significant influence on the intention of knowledge sharing. This result showed that the determinants in TPB are important in order to identify the intention to knowledge sharing behavior. Another study done by Shah and Mahmood (2013) on TPB found that the theory is useful for better understanding about behavioral influences for knowledge sharing. On the basis of the above assumptions, the following research hypotheses were developed for this study:

H1:   Attitude is a statistically significance predictor influence on knowledge
sharing behavior.
H2:   Subjective norms are statistically significance predictor influences on   knowledge
sharing behavior.

H3:   Perceived behavioral control is a statistically significance predictor influence   on knowledge sharing behavior.
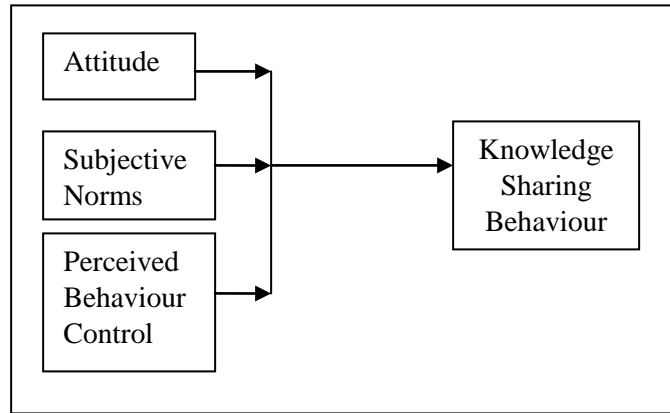

Figure 1: Conceptual Framework Of This Study

Methodology

This study employed a questionnaire approach designed to collect data for testing the validity of the research hypotheses. The 207 employees (tourism and hospitality industries in Cyberjaya) were selected from the management staffs which can be categorized into three levels, which are the supervisors, the middle managers and the top managers. They are selected based on their experience and knowledge and also their responsibility in structurally strategizing their business. A questionnaire survey was administered to the participant of this study personally. Instrument was adapted from previous study. To measure the attitude, this study adapted five items following Bock et al., (2005). The five items measured to their perceptions of sharing knowledge (Chennamaneni, 2007). In addition, there are also five items of subjective norms adapted from Bock et al., (2005). Meanwhile, for the perceived behavior control there are five items used and adapted from Taylor and Todd (1995). Finally, to measure knowledge sharing behavior this study adapted from Bock et al (2005), Lee (2001) and Teigland and Wasko (2003). All the items are tested using the five Likert scale with 1= strongly disagree to 5= strongly agree.

Result and Discussion

The descriptive analysis was conducted to determine the demographic factors of the 207 employees in Pullman Hotel, Cyberjaya, Malaysia. The finding showed that 57.5 percent of them were female employees (n=119) and 42.5 percent were male employees (n= 88). This showed that most of the respondents in this study are female employees. 42 percent of the employees were aged between 30 to 39 years old (n=87), followed by 33.8 percent from 18 to 29 years old. 20.8 percent of employees were aged between 40 to 49 years old (n=43) and only 3.4 percent of them were aged between 50 to 59 years old. This means that majority of the employees in Pullman Hotel who participated in this survey were young aged. The employees were selected from three positions which was 56 percent of them from the supervisory level (n= 116), 38.2 percent from the middle level manager (n=79) and only 5.8 percent from the top level manager (n=12). This shows that respondents for this study will be based on supervisory experience of sharing knowledge rather than the top manager level. The final descriptive analysis

indicated the length of service in Pullman Hotel. The finding revealed that majority of the employees with 38.2 percent had more than 5 years working experience, followed by 25.1 percent of 3 to 4 years (n=52) and 20.3 percent were less than 1 year (n=42). Therefore, based on the descriptive analysis, all the respondents seem to be appropriate to participate in this study.

Preliminary Analysis

A preliminary analysis was conducted to ensure the high quality of the data. A factor analysis was conducted purposely to determine the factors loadings to explain how much a factor explains a variable in the factor analysis. Principal components extraction method and varimax orthogonal rotation were used to produce the uncorrelated extracted factors with the fixed number of one factor. The adopted cutoff value of standardized factor loading (λ) is .50 and above (Hair, Black, Babin, & Anderson, 2010). The finding showed that the factor loading for the 18 items as exhibited in Table 1 exceeded the cutoff value of .50. Therefore, several items like A1, A4, D3 and D6 had to be deleted due to a lower factor loading.

Table 1: Factor Loading

Items	Statements	Component
A2	To me sharing knowledge with my co-workers is good	.493
A3	To me sharing knowledge with my co-workers is pleasant	.501
A5	To me sharing knowledge with my co-workers is wise	.437
B1	My head of department thinks that I should share knowledge with my co-workers	.642
B2	My manager thinks that I should share knowledge with my co-workers	.734
B3	My co-worker thinks that I should share knowledge with my co-workers	.562
B4	I follow the head of department policy and intention	.574
B5	I accept and carry out of my manager's decision even though it is different from mine	.417
C1	I have enough time to share knowledge with my co-worker	.571
C2	I have the necessary tools to share knowledge with my co-workers	.623
C3	I have the ability to share knowledge with my co-worker	.659
C4	Sharing knowledge with my co-worker is within my control	.536
C5	I am able to share knowledge with my co-workers easily	.696
D1	I share factual knowledge from work with my co-worker	.573
D2	I share business knowledge about the customer, products , suppliers and competitors with my co-workers	.670
D4	I share work experience with my co-workers	.560
D5	I share expertise from education or training with my co-workers	.666
D7	I share know-why knowledge from work with my co-workers	.676

Reliability Analysis

Reliability is a measure of the stability and consistency of a test to make sure that researcher can rely on the source of data and the data gathered itself. The test is said to be reliable when the test measures the same thing more than once, and the outcomes are still the same (Salkind, 2014). The adopted cut-off value of reliability based on Cronbach's alpha values is .70 and above (Nunnally, 1978).

The finding presented in Table 2 showed that after several items were deleted, the Cronbach alpha values for attitude (0.738), subjective norms (0.780) perceived behavioural control (0.766) and knowledge sharing behaviour (0.814). This indicates that there is a high internal consistency of the variables and is relevant to be used for further analyses.

Table 2: Reliability Analysis

Variables	No of Items	Item Deleted	Cronbach Alpha
Attitude	5	2	.738
Subjective Norms	5	-	.780
Perceived Behavioral Control	5	-	.766
Knowledge Sharing Behavior	7	2	.814

Regression Analysis

Before proceed to discussion in multiple regression analysis, this study presents the five assumptions of multiple regressions which need to be fulfilled before conducting the actual analysis (Hair et al, 2010). The first assumption is all the variables must be normally distributed. Normality can be measured based on the absolute value of skewness of -/+2 and values of kurtosis -/+7 respectively and will be regarded as demonstrating sufficient normality (Cunningham 2008a; Kline 2005). Table 1 indicates that the skewness and kurtosis values are within the threshold values thus confirms that the data is normal.

Table 3: Normality Analysis

Variable	Mean	STD	Skewness	Kurtosis
Attitude	3.99	.693	-0.841	1.790
Subjective Norms	3.84	.490	.160	.123
Perceived Behavioral Control	3.65	.522	.442	.315
Knowledge Sharing Behavior	3.83	.481	.293	.274

Second assumption is that all the independent variables must be linear to dependent variables. In order to test the linear correlation, it is required to analyze via the scatterplot among the standardized residual and the standardized predicted vales. The points in scatter plot are evenly distributed on both sides of 0 values of the standardized predicted values. As exhibited in Figure 2 below shows that attitude, subjective norms and perceived behavior control were linear to knowledge sharing behavior.
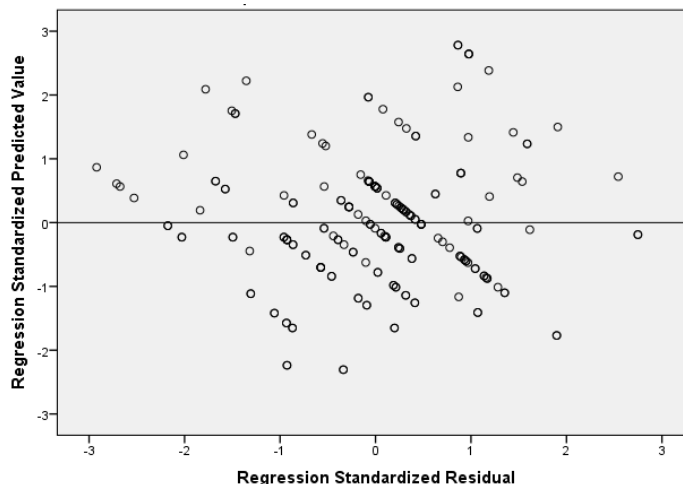
Figure 2: Scatter Plot

The third assumption to the multiple regression requirements is no multi-collinearity issue. Multi-collinearity is commonly happened when there are very high multiple correlations among some or all the variables. In order to detect the multi-collinearity, this study uses the Variance Inflation Factors (VIF) analysis. Multi-collinearity can be measured based on the tolerance calculation ($1=R^2$) of which the values must be greater than 0.1 and the Variance Inflation Factor (1/Tolerance) as the cutoff values must be less than 10. If the tolerance value is lower than 0.1, and VIF is more than 10, there is a serious multi-collinearity issue and further actions need to be taken. As exhibited in Table 2, attitude (T=0.835, VIF= 1.198), subjective norms (T=0.671, VIF=1.489) and perceived behavior control (T=0.598, VIF=1.672) indicating that the values met the cut of values and the result confirmed there is no issue on multi-collinearity.

Table 4: Multi-Collinearity Analysis

Variables	Tolerance	VIF
Attitude	.816	1.126
Subjective Norms	.625	1.600
Perceived Behavioral Control	.571	1.752

The fourth assumption is no multivariate outliers as determined the Mahalanobis distance using the Chi square values at $p<0.001$ and the df which presents the number of independent variables from the chi square table. The analysis mentioned that the Mahalanobis values must be lesser than the Chi square as determined. In this study there were three independent variables and the Chi square values from the table were 11.34 and as comparison to result of the study which was 21.68. Hence 1 had been identified as the outliers in this study and was deleted from the analysis. After deleted the cases, the Mahalanobis values dropped to 9.980 indicating that there were no outliers in this study. This result is confirmed as illustrated in Figure 3 which is the normal P-P Plot of the regression.
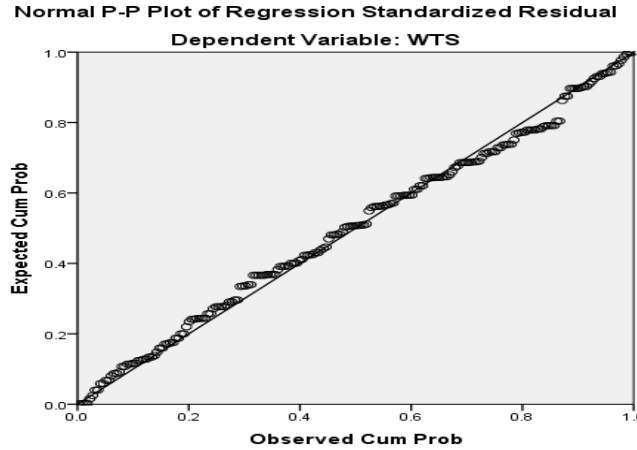
Figure 3: Normal P-P Plot

Then, a linear correlation was tested using the bivariate correlation. It is to ensure that the correlation between the variables is a linear correlation in order to proceed with to further regression analysis. The finding as shows in Table 5 indicates that all the variables tested are linear correlation. The findings indicated there were moderate and statistically significant relationships between attitude (r=.351, p<0.01) subjective norms (r=.509, p<0.01) perceive behavior control (r=.601, p<0.01) and knowledge sharing behavior.

Table 5: Bivariate Correlation

Variables	ATT	SN	PBC
ATT	1.00		
SN	.317**	1.00	
PBC	.423**	.573**	1.00
KSB	.351**	.509**	.601**

  **Correlation is significant at the 0.01 level

In the final analysis, a standard multiple regression was performed between attitudes, subjective norms, perceive behavior control and knowledge sharing behavior as the dependent variable. Table 6 explained the regression analysis of correlations between the variables the standardized Regression (β), R^2 and the adjusted R^2 were discussed. According to the results, the overall model is supported significantly with high F value of 45.334 (p <. 000). Adjusted R square (.393) indicates that the variance in the attitude towards knowledge sharing behaviors is substantially explained by the three variables. Among the three relationships tested in the model, the standardized coefficient indicates there is statistically non-significance between attitude and knowledge sharing behavior (β= 0.102, p>.000). While there was statistically significant between subjective norm (β= 0.217, p<.000), perceived behavioral control (β= 0.426, p<.000) and knowledge sharing behavior. Considering the three hypotheses discussed earlier in this study, since HI states that attitude is a statistically significance predictor influence on knowledge sharing behavior, therefore, HI is not supported. With two positive significant coefficients, H2 and H3 were supported for this study.

The finding of this study is however not in line with some previous studies like as Rahab & Purbudi (2013) who examined individuals' attitude influence toward knowledge sharing behavior. Chatzoglou & Vraimaki, (2009) asserted that employee's attitude directly influences knowledge sharing behavior. Yang's (2008) also confirmed the impact of individual attitudes toward knowledge sharing

processes, such as sharing and storing knowledge, on organizational knowledge sharing. This can be explained that in this study there is lack of awareness the advantageous and benefit to practice of knowledge sharing behavior among the employees. They are not exposed to the benefits of knowledge sharing. Rather, it is found that employees seek for recognition or appreciation when they share knowledge with others. Kwok and Gao (2006) explained that extrinsic and intrinsic motivation influence an individual knowledge sharing behavior. Bock et al. (2005) also supported the finding that subjective norm has significant influence on knowledge sharing behavior. Lin and Joe (2012) supported that perceive behavioral control has a positive effect on online knowledge workers. Therefore, this study can conclude that two out of the three components of Planned Behavior (TPB) influence knowledge sharing behavior.

Table 6: Regression Analysis

Variable	Standardized Coefficient (β)	t	Sig
Constant			
Attitude -> Knowledge Sharing Behavior	.102	1.697	.091
Subjective Norms -> Knowledge Sharing Behavior	.217	3.158	.002
Perceive Behavioral Control-> Knowledge Sharing Behavior	.426	5.913	.000
R	.634		
R^2	.402		
Adjusted R^2	.393		

Conclusion

The objective of this study is to predict whether attitude, subjective norm and perceived behavioral control significantly influence knowledge sharing behavior. Only attitude was not statistically significant to knowledge sharing behavior while the subjective norm and perceived behavioral control significantly influence knowledge sharing behavior. The evidence provided in this study has led to several implications for further research. The finding also concludes that there was the absence of attitude to share knowledge in this study.

Attitude is not significant to knowledge sharing behavior, which with this finding; the attitude is not well present by the employees in these industries. The possibilities of this circumstance happen because of lack awareness of knowledge sharing benefits, lack of rewards and recognition to their contribution and competition among themselves.

Therefore, this study recommends for further study on the reasons of the absence of attitude in knowledge sharing. IT is also recommended to conducting a study in others industries and make comparison between the industries to precise the trend of sharing knowledge in Malaysia.

Acknowledgement

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