



Research Article

Investigating Knowledge Sharing Behaviour in Academic Environment

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Abstract

Knowledge sharing is a social interaction among individuals. Past studies focused mainly on reward system particularly monetary. This may be true for individuals working in organizations. However, there have not been many empirical studies that analyses why students share knowledge as there is no monetary rewards at stake. Thus, this study aims to investigate the influence of the non-monetary factors (such as enjoy helping others, reputation, self efficacy, interpersonal trust, humility) on knowledge sharing behavior. In addition, the study also analyses the role of religiosity on knowledge sharing behavior and non monetary factors. Empirical data was collected using a questionnaire. The result found that non monetary factors such as enjoyment of helping others, self efficacy, interpersonal trust have a significant impact on knowledge sharing while reputation does not. In addition, it was discovered that religiosity plays a moderating role in the relationship between non-monetary factors and knowledge sharing behaviour.

Keywords: knowledge sharing behaviour, non-monetary factors, religiosity.

Introduction

Knowledge is nothing, but when it is shared it can get its values. Nowadays knowledge sharing becomes the resource for profit generation in business organisations (Cheng, Ho& Lau, 2009). Knowledge sharing revealed in business organisations and managers used to pay incentives to encourage employees to share their knowledge so as to improve the group's performance, competitive advantage (Choi, Poon& Davis, 2008;Yi, 2009). Similarly, knowledge sharing is

important in non-profit organisations such as academic institutes and universities. On the same line Berends (2005) stated that to enhance the organization practice among members in academic institutions management should focus on knowledge sharing among them in different departments. It has been realised that knowledge sharing is an essential activity that should take place among postgraduate students, an attribute that should not be taken for granted in universities. Despite the necessity of having to share knowledge effectively, few empirical researchers

highlight on how non-monetary factors encourage postgraduate students to share their knowledge. However, the question that aims here is whether postgraduate students in academic institutes in Malaysia share their knowledge with each other. Since it would not be possible to share all levels and groups in the institution we focus. Thus the objective of the study is to examine knowledge sharing behaviour among postgraduate students in public universities and analyse whether the non-monetary factors induce them to share their knowledge.

The next section discusses the literature reviewed pertaining knowledge sharing behaviour, non-monetary factors and religiosity. Further, the paper attempts to conceptualise the research model and develops the hypotheses, followed by the methodology section and data collection. Then the data analysis and the result are described. The final section presents the discussion and conclusion followed by the implication of the study.

Knowledge sharing

According to Davenport and Prusak (1998), knowledge sharing is a new alteration in behaviour. He reported that making knowledge available in an organisation is not sufficient to transfer it and get its value. It must be absorbed and used in order to increase its value and make new changes in behaviour. However knowledge sharing is not an easy task. It requires a long process of discovering and learning for individuals when colleagues come together and share their knowledge and generate new values (Jain, 2007). Moreover, Nonaka (1991) asserted that tacit knowledge is the knowledge or skill possessed by a person, who cannot be easily communicated to others, is difficult to formalise and to identify, because it includes intellectual matters such as beliefs, thinking and perspectives. Thus, knowledge sharing focuses on the human factor in knowledge management.

Bock and Kim (2002) showed in their findings that expected rewards were negatively related to the attitude of

knowledge sharing. The authors explained that the negative relationship as such, the experienced workers believed that they should share knowledge that was acquired from their work and training and looked at it as a normal business activity. Therefore, employees may have a negative perception toward receiving extrinsic motivations or benefits in return for their knowledge sharing behaviour. These results show that rewards are not the primary power for influencing the individual's attitude as once the extrinsic benefit is exhausted; individuals go back to their old behaviour. Thus, eventually extrinsic motivations do not affect the attitude of knowledge sharing behaviour and their influence seems to be temporary.

Most of the studies focused on rewards and monetary incentive factors to encourage knowledge sharing for example (Cheng et al., 2009; Bartol & Srivastava, 2002); Lin, 2007), whereas, this paper examines the non-monetary factors that increase the willingness to share knowledge.

Non-monetary factors influencing knowledge sharing

There are several non-monetary factors that influence knowledge sharing behaviour. However, this paper focuses on five non-monetary factors that are (enjoying of helping others, reputation, self-efficacy, interpersonal trust, and humility). Therefore, the main hypothesis is:

H1: There is a positive relationship between non-monetary factors and knowledge sharing behaviour.

Enjoyment of helping others

The concept of non-monetary rewards refers to "the intrinsic and intangible incentives that encourage an individual to engage in a social relationship to perform a specific task for its own sake" (Mallasi, 2012). Gorry (2008) stated that the success of any organisation connected to the motivation of their workers and their strong desire to sharing knowledge among themselves and with their clients. Prior

research showed that individuals, who were intrinsically motivated to share knowledge, for example engaging in solving problems, gave them a feeling of challenge and pleasure, and eventually the enjoyment of helping others (Wasko & Faraj, 2000; Berends, 2005). Therefore, the hypothesis H1a is proposed:

H1a: There is a positive relationship between the enjoyment of helping others and knowledge sharing behaviour.

Reputation

Reputation comes from the theory of social exchange of Blau (1964). According to the theory, individuals participate in social interaction due to the expectation that ends with social rewards such as status, respect and reputation (Wasko & Faraj, 2005). This explanation revealed that reputation was considered as one of the non-monetary factors that increase knowledge sharing among individuals. Based on this discussion hypothesis H1b is proposed:

H1b: There is a positive relationship between reputation and knowledge sharing behaviour.

Self-efficacy

The self-efficacy construct has emerged from the social cognitive theory (Gist & Mitchell, 1992). Self-efficacy refers to "an individual's belief in his or her capability to perform a specific task" (Gist & Mitchell, 1992, p. 184). Moreover, according to Endres, Chowdhury, and Alam (2007) the self-efficacy theory proved to be one of the best motivators for people and it helps to understand why people tend to share knowledge. Self-efficacy is a kind of self-evaluation that affects one's decision about what behaviour should be used. Generally, self-efficacy plays a critical role in motivating individuals' behaviour (Hsu, Ju, Yen, & Chang, 2007; Kankanhalli, Tan, & Wei, 2005; Wasko & Faraj, 2005). Based on this literature hypothesis H1c is developed:

H1c: There is a positive relationship between self-efficacy and knowledge sharing behaviour.

Interpersonal Trust

Blau (1964) asserted that, in general, trust is an important element in a social exchange relationship. The higher the trust among individuals, the stronger will be the social exchange relationship among them. Trust is essential for social interaction and the mutual exchange process, and plays a vital role in the knowledge sharing process (Pai, 2006). In the literature review, trust is often argued to be essential to knowledge sharing and numerous authors believe that people willingly exchange knowledge with each other when trust exists among them (Bakker, Leenders, Gabbay, Kratzer & Van Engelen, 2006). Rosendaal (2009) argued that an influential factor that affects knowledge sharing in organisation is the social climate and trust among team members with a strong support from management. Moreover, Abrams, Cross, Lesser, and Levin (2003) noted that interpersonal trust can establish a strong foundation for learning and knowledge transfer. Accordingly, the following hypothesis H1d is proposed:

H1d: There is a positive relationship between interpersonal trust and knowledge sharing behaviour.

Humility

The theory of virtue of Aristotle focused on a person's good character and his traits that influenced attitude and beliefs, and then affected the act and behaviour of a person. Besides, character traits explain the way a person acts (Sherman, 1991).

Generally, humility is the lack of feeling of superiority, arrogance and haughtiness of a person towards other people. It is treating all people regardless of who they are, with respect, gentleness, kindness and forgiveness. Humility has been described from a positive aspect, i.e. with emphasis on strength rather than weakness. Tangney (2000) described that dictionaries often give humility a negative meaning such as

low self-esteem and negative self-views. In contrast, humility could be looked upon as a virtue and personal strength, as has been described by some writers (Emmons, 2000; Exline & Geyer, 2004; Vera & Rodriguez-Lopez, 2004). In the theory of virtue of Aristotle, he mentioned that virtue is a characteristic trait of a man that affects his behaviour and act (Sherman, 1991). In the same way, the behaviour of one who has high level of humility might serve as a potential promotional basis for him/her to share knowledge with others. Despite the huge literature about humility, it has been neglected by researchers in social science, especially in knowledge sharing. Although there are extensive researches in knowledge sharing, intrinsic motivations and religiosity, research up to date, has not focused on the relationship between humility and knowledge sharing behaviour. Thus, the hypothesis H1e is proposed:

H1e: There is a positive relationship between humility and knowledge sharing behaviour.

Religiosity

The relationship between religiosity and behaviour has been widely explored. The findings of previous researches highlighted the importance of the religion construct as a predictor of human behaviour (e.g. Delener, 1994; Sood & Nasu, 1995; Essoo & Dibb, 2004; Mokhlis, 2006b). In many studies, authors refer to religiosity as religion commitment or the level of religiousness (Essoo & Dibb, 2004; Hicks & King, 2008). Highly religious individuals who are strongly committed to their beliefs would likely behave in compliance with the rules and norms of their religion (Mokhlis, 2006a; Muhamad, Devi, & Mu'min, 2006). According to Worthington Jr et al., (2003) religiosity is "the degree to which a person adheres to his or her religious values, beliefs and practices and uses them in daily living" p. 85. The supposition is that a highly religious person will evaluate the world through religious schemes and thus, will integrate his or her religion into much of his or her life. Various empirical studies suggested that religious affiliation has an impact on managerial behaviour. Essoo and

Dibb (2004) clarified that studies in marketing literature argued that one of the strongest elements that affected one's behaviour while making buying decisions was religion, which cannot be underestimated as it has been argued that spiritual qualities which consist of religion and beliefs establish the fundamental behaviour of a particular religious group. Therefore, the following hypotheses are proposed:

H2: Religiosity moderates the relationship between non-monetary factors and knowledge sharing behaviour.

Religiosity has been studied in different religious groups such as Christian Catholics and Jewish household's purchasing behaviours (Delener, 1990); and Muslim, Christian Catholics and Hindu's shopping behaviour (Essoo & Dibb, 2004). Moreover, Ong and Moschis(2006) investigated the effects of religious beliefs and commitments held by consumers in different cultures, as they studied the ethnic and religious groups in Malaysia. So, the assumption is:

H3: Religiosity among different ethnic groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.

Hypothesis 3 has four sub-hypotheses for there are four main ethnicities examine in terms of their religiosity towards knowledge sharing behaviour. These hypotheses are:

H3a: Religiosity among Malay ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.

H3b: Religiosity among Chinese ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.

H3c: Religiosity among Indian ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.

H3d: Religiosity among “Others” ethnic group moderates the relationship between non-monetary factors and knowledge sharing behaviour.

In addition, Poulson et al., (1998) found that women with strong religious affiliation consumed less alcohol and engaged less in unsafe sexual behaviour than females with less religiosity. Men with religious conviction were not significantly associated with drinking alcohol and engaging in risky sexual behaviour. In the present study, the researcher will assess the effects of religious commitment of the four ethnic groups in Malaysia (Malays, Chinese, Indians and Others), as well as the gender groups (male and female) among postgraduate students in public universities in Malaysia, on the relationship between non-monetary motivation factors and knowledge sharing behaviour. The hypothesis proposed is:

H4: Religiosity between different gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.

Hypothesis number four was divided to two sub-hypotheses:

H4a: Religiosity between male gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.

H4b: Religiosity between female gender groups moderates the relationship between non-monetary factors and knowledge sharing behaviour.

Postgraduate students in public Malaysian universities are not only from Malaysia, as a part of them come from different countries around the world. Therefore, the researcher investigates which postgraduate students share their knowledge more in terms of their countries. In other words, who shares their knowledge more Malaysian students or International students? Therefore, the final hypothesis is H5:

H5: There is a difference between Malaysian and international postgraduate students in terms of knowledge sharing.

Conceptual Model

The theoretical model consists of variables from various theories. The enjoyment of helping others from the social exchange theory, self-efficacy from the social cognitive theory, interpersonal trust from the social capital theory, and the humility virtue from the virtue theory is used to investigate the influence of these non-monetary factors on knowledge sharing behaviour with the moderating effects of religiosity. From the literature review, the researcher proposed the following framework as shown in Figure 1. The modified factors that used in the model of this study derived from previous studies that have positive impact on knowledge sharing in order to ensure high validity and reliability for the variables (Noor & Salim 2011).

This research will focus on and investigate the relationship between the non-monetary factors and knowledge sharing behaviour in the presence of religiosity as a moderating variable. In this research, it is expected that the factors that encourage individuals to share knowledge with colleagues are the enjoyment of helping others, reputation, self-efficacy, interpersonal trust and humility. The humility construct is used in this research as a new independent variable. Moreover, the religiosity variable is also a new variable used as a moderating variable.

In this research, the authors suggest one dependent variable that is knowledge sharing behaviour. Knowledge sharing behaviour refers to the degree to which individuals exchange and share knowledge and expertise with other colleagues in the organisation and uses it in order to create new knowledge (Mallasi 2012). The social exchange theory and cognitive theory were used in this study with its constructs to determine knowledge sharing behaviour. In line with Bartol and Srivastava's (2002) research, non-monetary incentives or

intrinsic motivation factors are primarily important in influencing individuals to share knowledge. Such opinion might

suggest a significant association between the non-monetary variable and knowledge sharing behaviour.

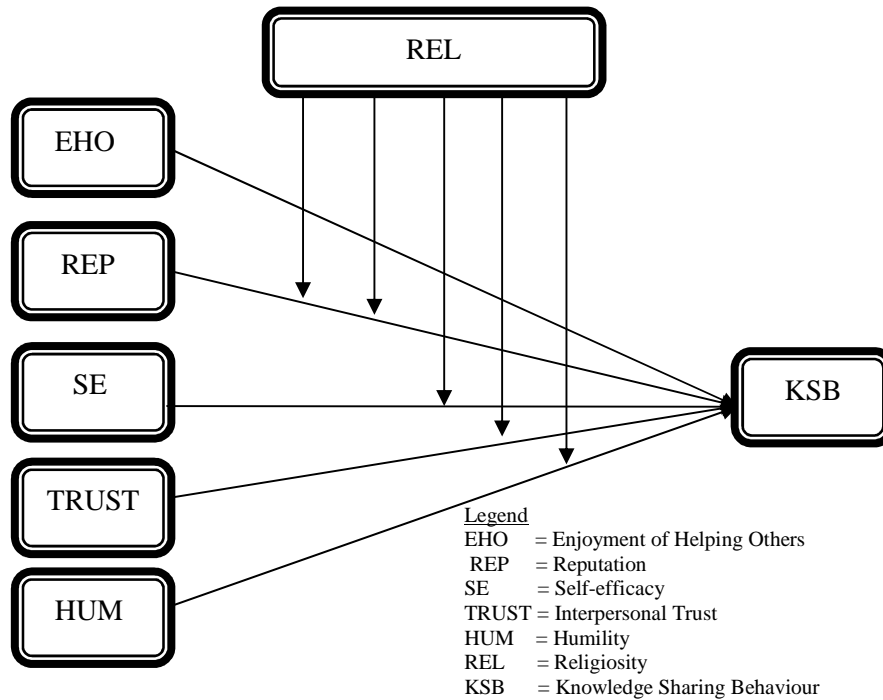


Figure 1: Research framework

Research Methodology

This section of the research determines the methodology employed. To conduct this research, quantitative method was used and the data collected through a questionnaire survey. The survey instrument was a questionnaire. Items used in the research model were deemed relevant and adapted from prior studies in the field of knowledge sharing (Lee, 2001; Bock, Zmud, & Kim, 2005; Lin, 2007; Kankanhalli et al., 2005; Wasko & Faraj, 2005; Hsu et al., 2007; Kuo & Young, 2008; Lin, 2006; Lee & Choi, 2003; Estephan, 2005; Rowden, 2009; Kilroy, 2009; Worthington et al., 2003). However, it was modified to suit the present study (see Appendix 1). Before distributing the final questionnaire, a pilot survey was carried

out among 200 respondents conveniently selected from the target population to examine its validity and reliability and only 160 were used with no missing data. Based on the information collected from these respondents, the final questionnaire was developed with slight modification. SPSS 20.0 software was used to analyse the data collected. The cronbach alpha values for the entire constructs used in the questionnaire were above 0.80 which is considered reliable according to Hair, Black, Babin, Anderson, Tatham (2006).

The questionnaires were distributed to postgraduate students in six public Malaysian universities in Klang Valley, where most of the public universities located. The questionnaire was self-administrated and distributed personally

by hand to the respondents inside their classes after obtaining permission from their lecturers in order to have a higher response rate. A total of 1683 questionnaires were distributed to the respondents. Only 1267 questionnaires were used for further analysis.

Data Analysis and Result

This section presents the analysis of the demographic characteristics of the respondents. This is followed by the result of the factor analysis on non-monetary factors and religiosity items. Then, the results of the multiple regression analysis are presented to find out the influence of the non-monetary factors on knowledge sharing behaviour. Finally, the effect of religiosity as a moderating variable on the relationship between non-monetary factors and knowledge sharing behaviour is presented.

Respondents Characteristics

The Characteristics of the respondents showed that female respondents slightly outnumbered male respondents, 55% compared with male respondents 45%. Respondent's age ranged between 20 to 51 years old. The majority fell in the range of 20 to 30 years. Most of the respondents were Malaysians about 69.2%, while 30.8% respondents were from other countries. The characteristic profile of the respondents in terms of ethnicity showed that the majority were Malay 49.1%, followed by Chinese 11.8%, whereas 9.4% were Indian and 1.8% were from Others ethnicity. The data demonstrates that more than three fourths of the respondents were Muslim, followed by Buddhists 9.2%, Hindus were 4.8%, and 7.2% were from other religious backgrounds. In term of education, the majority of the respondents were Masters' students at 86.2%, while doctorate students were at 13.8%.

Factor analysis

Factor analysis was conducted on the 42 items of non-monetary factors and 11 items of religiosity to determine the items underlying the dimensions measurement of

the constructs. Moreover, the analysis also done to summarise and reduce data among interrelated variables and come out with a few underlying factors to explain the correlation among those variables (Malhotra, 2007). The factor analysis performed and extracted nine factors with eigenvalue more than 1.0. These 9 factors explained 61.506 of the total variance. Table 1 showed that factors 1, 2, 3, were loaded with eleven, nine, and 7 items respectively. Humility construct was split into two factors 4 and 5. Therefore, the six items under factor 4 was labelled as scholar humility and the other four items loaded under factor 5 was labelled as general humility. A scholar is knowledge seeker or a learned and knowledgeable person who has more knowledge in a particular area (Merriam-Webster, 2013). Therefore to become a scholar one should continuous seeking knowledge through a long process of learning. This is in return releases a scholar from traits such as arrogance and over confidence (Ghosh, 2002). Thus, humbleness will be gained, because scholar knows that, although scholarship they acquire, still more thing remains to know (Boyer, 1996). Scholar humility is a trait which can be easily recognised in a scholar person, when they admitted their shortcoming and struggled to overcome it (Crigger & Godfrey, 2010). This is an indication of scholar humility. This situation has evidence in Holy Quran. The Holy Quran says: *"And they ask you, [O Muhammad], about the soul. Say, "The soul is of the affair of my Lord. And mankind have not been given of knowledge except a little."* (Holy Quran 15:85). In addition, Freeman (2004) as a scholar asserted that after thirty years journey of working life he found that he has achieved a progress from arrogance to humble, and became more compassionate, wiser, and tolerance in dealing with others. These virtues consist of many good traits such as never hurt and offend others, having the readiness to apologise and bearing the responsibility to disseminate knowledge to others. However these attribute reflects scholar humility.

Factors six, seven, eight and nine were loaded with six, five, and five items respectively. The items with factor loadings

of .60 and above were considered significant and below .60 were dropped from the factors interpretation as recommended by (Andersen & Herbertsson 2005; Chin 1998). In addition, the item (HUM8) was loaded alone under factor nine, hence, dropped as according to Pallant (2007), three or more items loaded under one factor is preferable. The results showed that only four items were

discarded (self-efficacy5, humility1, humility8, and humility9) while the remaining items were retained for further analysis.

In the reliability test, croanbach's alpha of the construct was more than 0.79 which were quite acceptable (Nunnally, 1978).

Table 1 : Factors 1, 2, 3 for Religiosity, Self-efficacy, and Interpersonal Trust, Factor 4 and 5 for Humility

Items	Factors				
	1	2	3	4	5
	REL	SE	INTRUS	Humility	
REL9	.813				
REL7	.806				
REL6	.791				
REL8	.777				
REL2	.767				
REL3	.765				
REL11	.755				
REL1	.727				
REL10	.725				
REL5	.716				
REL4	.677				
SE3		.728			
SE7		.724			
SE9		.721			
SE8		.720			
SE4		.717			
SE6		.715			
SE2		.694			
SE1		.652			
SE10		.622			
INTRUST2			.773		
INTRUST3			.772		
INTRUST4			.759		
INTRUST1			.688		
INTRUST6			.678		
INTRUST5			.677		
INTRUST7			.664		
HUM3				.757	
HUM4				.718	
HUM5				.702	
HUM2				.679	
HUM6				.676	
HUM7				.638	
HUM11					.747
HUM12					.742
HUM13					.673
HUM10					.607
Eigenvalue	13.014	5.102	3.998	3.324	1.438
Variance explained	11.870	9.622	7.390	6.741	4.856

Table 1 : Continued' Factors 6, 7, 8 for Reputation, Enjoyment of Helping Others, and Knowledge Sharing Behaviour

Items	Factors			
	6	7	8	9
	REP	EHO	KSB	
REP3	.833			
REP6	.796			
REP4	.786			
REP5	.770			
REP2	.736			
REP1	.604			
EHO2		.837		
EHO3		.803		
EHO1		.803		
EHO5		.794		
EHO4		.791		
KSB3			.802	
KSB2			.790	
KSB4			.768	
KSB1			.698	
KSB5			.670	
HUM8*				.788
Eigenvalue	2.766	2.505	1.789	1.096
Variance explained	6.567	6.454	5.794	2.212

*Total variance extracted by the nine factors was 61.506 %, KMO = .935, Barlett's Test < .001

*Extracted method: Principal Component Analysis.

*Rotated method: Varimax.

* Only items with factor loadings more than .60 are shown

* Factor nine was dropped due to less than three items loaded.

Regression Analysis and Hypotheses Testing

The multiple regression technique was used to test the hypotheses of the direct relationship between the non-monetary variable and knowledge sharing behaviour and how independent variables predict the dependent variable, as well as to test the hypotheses of the moderating effects proposed.

First, as seen in Table 2 the output showed that there were two models. The first model consisted of religiosity as a moderator construct with significant (F value = 161.423, $p < 0.000$ less than .01) with adj. R^2 .112, indicating that 11.2% of the dependent variable was explained by religiosity and the standardised coefficient beta was ($\beta = .336$, $t = 12.705$, $p < .01$), showing that religiosity as a moderator had a predictor effect on the dependent variable, with positive sign. The second

model presented the seven independent variables (enjoyment of helping others, reputation, self-efficacy, interpersonal trust, scholar humility, general humility and religiosity) with one dependent variable (knowledge sharing behaviour) to determine the total variance explained by all the dependent variables. The F value was calculated and the regression model found it statistically significant at (F value = 117.283, $p < 0.000$ less than .01). It is clear from the results that interpersonal trust has the strongest coefficient ($\beta = .371$, $t = 14.970$, $p < .01$), followed by the enjoyment of helping others ($\beta = .177$, $t = 7.123$, $p < .01$), religiosity ($\beta = .138$, $t = 5.882$, $p < .01$), self-efficacy ($\beta = .126$, $t = 4.806$, $p < .01$) and scholar humility ($\beta = .082$, $t = 2.955$, $p < .01$) respectively. In contrast, as seen in Table 2, the reputation variable shows ($\beta = .010$, $t = .414$, $p > .1$) and general humility variable shows ($\beta = .002$, $t = .175$, $p > .1$), which means they have a positive sign of relationship with knowledge sharing

behaviour but is not significant. Therefore, only four hypotheses were supported (H1a,

H1c, H1d, and H1ea). Hypotheses H1b and H1b were not supported.

Table 2 : Results of Multiple Regression - Moderator Effect of Religiosity and Direct Predictors vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity Statistics	
			Tolerance	VIF
Model 1				
Religiosity	.336	12.705***	1.000	1.000
Adj. R ²	.112			
F	161.423***			
Model 2				
EHO	.177	7.123***	.775	1.290
REP	.010	.414	.817	1.224
SE	.126	4.806***	.705	1.418
INTRUST	.371	14.970***	.783	1.278
S HUM	.082	2.955***	.622	1.608
G HUM	.008	.307	.652	1.534
REL	.138	5.882***	.868	1.152
Adj. R ²	0.391			
F	117.283***			

Dependent Variable: Knowledge Sharing Behaviour. St = standardised, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility, G HUM = general humility, REL = religiosity, *** significant at $p < .01$, ** significant at $p < .05$

Third, the result of multiple regressions shows the effect of religiosity among different ethnicity of respondents on the relationship between predicting variables and knowledge sharing behaviour. Table 5 represents the summary of the interaction effects. The effect of religiosity among the Malay ethnic group on the relationship between non-monetary factors and knowledge sharing behaviour, implying that religiosity among Malay ethnic group is fundamental factor in motivating knowledge sharing behaviour. In contrast, as seen in Table 4, Religiosity among

Chinese ethnic group was not significant to words knowledge sharing behaviour, indicating that religiosity does not play an important role in motivating the Chinese to share their knowledge. In addition, the result showed that the religiosity among Indian ethnic group is crucial factor in motivating them to share their knowledge. Finally, religiosity among Others was not found significant related to knowledge sharing behaviour. These findings supporting the hypotheses H3a, H3c, whereas, hypothesis H3b and H3d were not supported.

Table 3 : Summary Result of the Interaction Effect of Religiosity with Non-monetary Constructs vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity S.		Adj. R ²	F
			Tolerance	VIF		
REL*EHO	.234	9.322***	.765	1.307	0.388	134.608***
REL*REP	.113	4.439***	.752	1.329	0.385	132.846***
REL*SE	.200	7.725***	.715	1.398	0.391	136.364***
REL*INTRUST	.381	14.961***	.776	1.289	0.363	121.046***
REL*S HUM	.178	6.658***	.674	1.485	0.391	136.637***
REL*G HUM	.130	4.924***	.691	1.447	0.387	134.015***

Dependent Variable: Knowledge Sharing Behaviour. St = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, HUM = humility, S = scholar, G = general, *** Significant at $p < 0.01$

Table 4 : Summary Result of the Interaction Effect of Religiosity with Non-monetary Factors and Ethnic Groups vs. KSB

Predictor Variables	St. Beta	T-value	Collinearity S.		Adj. R ²	F
			Tolerance	VIF		
REL*EHO*M	.119	10.949 ^{***}	.908	1.102	.391	519.276 ^{***}
REL*REP*M	.115	10.646 ^{***}	.929	1.077	.391	517.767 ^{***}
REL*SE*M	.116	10.761 ^{***}	.926	1.079	.391	518.335 ^{***}
REL*INTRUST*M	.113	10.206 ^{***}	.888	1.126	.390	515.655 ^{***}
REL*S HUM*M	.121	11.075 ^{***}	.908	1.101	.392	519.912 ^{***}
REL*G HUM*M	.112	10.436 ^{***}	.919	1.089	.390	516.319 ^{***}
REL*EHO*C	-.011	-1.035	.994	1.006	.379	491.930 ^{***}
REL*REP*C	-.011	-1.009	.994	1.006	.379	491.917 ^{***}
REL*SE*C	-.005	-0.466	.993	1.008	.379	491.733 ^{***}
REL*INTRUST*C	-.009	-0.838	.991	1.009	.379	491.845 ^{***}
REL*S HUM*C	-.011	-1.31	.988	1.012	.379	491.928 ^{***}
REL*G HUM*C	-.012	-1.120	.991	1.009	.379	491.972 ^{***}
REL*EHO*I	.043	4.082 ^{***}	.994	1.006	.380	495.519 ^{***}
REL*REP*I	.041	3.876 ^{***}	.989	1.011	.380	495.141 ^{***}
REL*SE*I	.041	3.915 ^{***}	.991	1.009	.380	495.210 ^{***}
REL*INTRUST*I	.039	3.734 ^{***}	.992	1.008	.380	494.892 ^{***}
REL*S HUM*I	.036	3.424 ^{***}	.992	1.008	.380	494.381 ^{***}
REL*G HUM*I	.043	4.034 ^{***}	.990	1.010	.380	494.428 ^{***}
REL*EHO*O	.008	.737	.996	1.004	.379	491.808 ^{***}
REL*REP*O	.010	.967	.994	1.006	.379	491.898 ^{***}
REL*SE*O	.012	.164	.995	1.005	.379	491.995 ^{***}
REL*INTRUST*O	.008	.746	.996	1.004	.379	491.811 ^{***}
REL*S HUM*O	.008	.753	.996	1.004	.379	491.813 ^{***}
REL*G HUM*O	.010	.962	.994	1.006	.379	491.896 ^{***}

Dependent Variable KSB = knowledge sharing behaviour, St = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility, G HUM = general humility, O = Others, ^{***} significant at $p < .01$. M = Malay, C = Chinese, I = Indian, O = Others

Fourth, the finding of this study in Table 5 showed the influence of religiosity between different genders male and female of postgraduate students. All the interaction effect were significant but with negative sign indicating that male gender who are religious and believe in non-monetary factors are less frequently sharing their knowledge. On the other hand religiosity among female were positively related to knowledge sharing behaviour indicating that religious female who believes in non-monetary factors are more frequently

sharing their knowledge. This result confirmed H4a and H4b.

According to Hair et al. (2006) a high variance inflation level indicates that there is multicollinearity among the independent variables. The tolerance level must be close to 1.0, or more than 0.1, whereas the level of variance inflation factor must be below 10.0 (Hair et al., 2006). From the above result of the regression analyses no multicollinearity was detected.

Table 5: Summary Result of the Interaction Effect of Religiosity with Non-monetary Factors and the Male Gender vs. KSB

Predictor Variables	St Beta	T-value	Collinearity S.		Adj. R ²	F
			Tolerance	VIF		
REL*EHO*M	-.034	-3.201 ^{****}	.963	1.039	.380	494.041 ^{****}
REL*REP*M	-.040	-3.633 ^{****}	.920	1.087	.380	494.721 ^{****}
REL*SE*M	-.034	-3.150 ^{****}	.933	1.071	.380	493.967 ^{****}
REL*INTRUST*M	-.032	-2.991 ^{****}	.959	1.043	.380	493.742 ^{****}
REL*S HUM*M	-.030	-3.176 ^{****}	.941	1.062	.380	494.005 ^{****}
REL*G HUM*M	-.032	-2.718 ^{****}	.926	1.079	.379	493.383 ^{****}
REL*EHO*F	.088	8.105 ^{****}	.924	1.082	.386	506.803 ^{****}
REL*REP*F	.087	8.127 ^{****}	.949	1.054	.386	506.885 ^{****}
REL*SE*F	.084	7.795 ^{****}	.942	1.061	.385	505.668 ^{****}
REL*INTRUST*F	.085	7.777 ^{****}	.906	1.104	.385	505.603 ^{****}
REL*S HUM*F	.086	7.927 ^{****}	.926	1.080	.385	506.146 ^{****}
REL*G HUM*F	.080	7.420 ^{****}	.930	1.076	.385	504.353 ^{****}

Dependent Variable KSB = knowledge sharing behaviour, St = standardised, REL = religiosity, EHO = enjoyment of helping others, REP = reputation, SE = self-efficacy, INTRUST = interpersonal trust, S HUM = scholar humility, G HUM = general humility, M = Male, F = Female, **** significant at $p < .01$.

Fifth, T-test was used to differentiate between Malaysian and International students in terms of knowledge sharing behaviour. The result in Table 6 indicates that the F-test was significant at ($p < 0.05$). Consulting the t-value significance from the output, it was significant with ($t = 6.081$, p

$< .05$) which indicates rejection of the null hypothesis (equal variance assumed) and acceptance of the alternative hypothesis. And the t-test for equality of means was significant, which shows that there was a difference between the means. This result answered the hypothesis H5.

Table 6 : Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
KSB Equal variances assumed	25.799	.000	6.567	1265	.000	.230	.035	.161	.161
Equal variances not assumed			6.081	629.597	.000	.230	.038	.156	.156

Table 7 shows the difference of the means between the two groups. The mean value of the Malaysian group (4.02) was greater than the mean value of the International group (3.79).

Table 7: Mean Difference between Groups

Country		N	Mean	Std. Deviation	Std. Error Mean
KSB	Malaysian	77	4.02	.535	.018
	International	90	3.79	.655	.033

Discussion and Conclusion

This study was carried out to investigate non-monetary factors that predict knowledge sharing behaviour among postgraduate students. Based on prior studies in knowledge sharing and knowledge sharing behaviour, this study proposed that non-monetary factors motivate and encourage postgraduate students to share their knowledge with colleagues. The result of the data analysis revealed that there was significant relationship between the enjoyment of helping others, self-efficacy, interpersonal trust, scholar humility and religiosity with knowledge sharing behaviour. To a certain extent, the findings of this study asserts that the non-monetary factors (enjoyment of helping others, self-efficacy, interpersonal trust and scholar humility) were highly associated to knowledge sharing behaviour and consistent to prior studies (Lin, 2007; Hsu & Lin 2008; Kankanhalli et al., 2005; Wasko & Faraj, 2005). No significant evidence was found to support the relationship between reputation, general humility and knowledge sharing behaviour. This suggests that the effect of reputation and general humility were rather limited.

In addition, the present study investigates the interaction effects of religiosity with ethnicities on the relationship between non-monetary factors and knowledge sharing behaviour, which has not been investigated before. The findings reveal that the interaction effect of religiosity with Malay and Indian ethnic groups with non-monetary factors were significantly related

to knowledge sharing behaviour and supported the hypothesis. In contrast, the interaction effect of religiosity with Chinese and Others ethnicity on the relationship between non-monetary factors and knowledge sharing behaviour was not significant, and showed insufficient evidence to support the hypotheses. The justification to these findings might be due to the culture differences of the Chinese, who are highly motivated by financial rewards and appear to have less concern regarding religious issues (Rashid & Ho, 2003). It becomes visible that religion does not have much significant impact on Chinese behaviour (Sian, 2009). This isolation might have influenced their behaviour and discouraged them from mingling with others. Thus, even those who are committed to their religion or beliefs do not trust others and lack humility while dealing with others, since they do not seek a high status among other races.

In the case of the interaction effect of religiosity with the Others ethnicity and non-monetary

factors related to knowledge sharing behaviour, the findings were not significant. The rationale behind this might be due to their different perception of religiosity in their traditional religions, principles and beliefs. Moreover, according to the data collected, most of the Others respondents were free-thinkers and were not much committed to a particular religion. Therefore, the virtue of religiosity does not spread in their culture and community, and thus, religiosity does not influence their behaviour towards knowledge sharing. In addition, the total of the 'Others' respondents in this study was

low. Only 23 respondents subscribed to this study, which is why the result might not be significant.

These findings indicate that religious male respondents, who believe in non-monetary factors as a critical determinant for knowledge sharing behaviour, are less likely to share their knowledge with colleagues. This negative relationship might be due to competitiveness of the male gender who wants to establish their positions to their female counterparts. As Fisher and Gregoire (2006) showed in their findings, males usually work competitively in a mixed environment (men and women) to emphasise their dominance, whereas females are less likely to behave competitively and can be classified as cooperative (Gneezy et al., 2003). In this study, women generally share their knowledge willingly when they are in a positive workplace compared to males. The finding revealed that males may have less willingness to share their knowledge with others, is consistent with the prior study of Lin (2006). An alternative explanation for the negative significant relationship between religiosity with males and knowledge sharing behaviour is the lack of interpersonal relationship. In this sense, Miller and Karakowsky (2005) noted that men are less concerned about interpersonal relationships, whereas, on the other side, women are more sensitive to others' ideas, opinions and knowledge. The reason why males may not share their knowledge could be due to the high concern to their ego or to hide their weaknesses from others who are seeking information. Or that it is simply incongruent with the male role, while it is different in the situation of females, who are more likely to ask for information (Miller & Karakowsky, 2005). Another reason might be male chauvinism that describes the superiority of the male (Mansbridge & Flaster, 2007). Or the fact that men are less friendly than women.

Limitation

The study focused on a few non-monetary factors that motivate knowledge sharing behaviour which explained 35.7% of the

variance of the dependent variable. Therefore, future studies can investigate other factors to explain the remaining part of the variance such as subjective norm and personality traits.

The study did not include the graduate students of private universities or other respondents who have a great influence in knowledge sharing behaviour in universities such as professors, doctors and academicians. Therefore, they can be investigated in future studies.

Implication of the study

The main contribution of this study is to formulate a theoretical framework to reflect the relationship between non-monetary factors and the behaviour of knowledge sharing. In addition, this study introduced, for the first time, the humility construct to be used as one of the non-monetary factors in predicting knowledge sharing behaviour. Religiosity as a moderating variable was added to the theoretical framework in order to examine its effect on the relationship between non-monetary factors and knowledge sharing behaviour. This moderating relationship might be considered as a new contribution. In addition, this study enriches the area of knowledge sharing behaviour and contributes to the literature by highlighting the significant role of religiosity as a moderator in the relationship between non-monetary factors and knowledge sharing behavior, which has not been studied before in the context of knowledge sharing behaviour. Moreover, the interaction effects of religiosity with Malaysian ethnicities and different gender group on knowledge sharing behaviour can be considered as an extension to the literature review in this field.

In terms of practical implications, the findings of the study have provided various practical implications to strength and promote the behaviour of knowledge sharing among postgraduate students. Since non-monetary factors can influence knowledge sharing behavior, it is critical for universities to allocate resources to deal with the factors that have a strong

influence on postgraduate's behavior toward knowledge sharing in order to formulate their strategies, plans, and programmes. They should set up a suitable social environment to increase social interaction behaviour such as a knowledge sharing club, scientific club or culture club, to enable postgraduate students to build a strong social relationship with colleagues and activate the hidden values, morality and personal characteristics to strengthen the behaviour of knowledge sharing. In addition, they should take the initiative to promote the non-monetary factors to raise the view of knowledge sharing behaviour among postgraduate students. Moreover, they should seek suitable mechanisms to enhance the spiritual feelings which encourage the behaviour of knowledge sharing.

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Appendix 1

Measurement Items

1	I enjoy sharing my knowledge with colleagues.
2	I enjoy helping colleagues by sharing my knowledge.
3	I feel good to help someone else by sharing my knowledge.
4	Sharing my knowledge with colleagues is pleasurable.
5	I like helping others by sharing my knowledge
6	I earn respect from others by contributing in knowledge sharing.
7	Participating in knowledge sharing activity would enhance my personal reputation among colleagues.
8	Contribution in knowledge sharing would improve my status among colleagues.
9	Participating in knowledge sharing activity would enhance my personal reputation among colleagues.
10	Participating in knowledge sharing activity would enhance my personal reputation among colleagues.

11	Sharing my knowledge with colleagues gives me more prestige.
12	I am confident that I can share my knowledge through conversation with my colleagues.
13	I am confident that I can provide new insights, ideas, and issues in discussion with my colleagues.
14	I am confident that I can comment on a specific issue on my study field.
15	I am confident that I can discuss study-related issues with my colleagues in seminars.
16	I am confident that I can share articles that I found, useful web sites, and other related sources with my colleagues.
17	I am confident that I can talk on a specific topic with my colleagues.
18	I am confident that I can share my knowledge by answering questions, giving advice or providing examples.
19	I am confident that I can share my knowledge by explaining myself verbally or in writing.
20	I am confident in my ability to provide knowledge that my colleagues consider valuable.
21	I have the experience required to share valuable knowledge with my colleagues.
22	I am confident that I can share my knowledge through conversation with my colleagues.
23	My colleagues are generally trust worthy.
24	My colleagues and I have mutual faith in our intentions and behaviour.
25	My colleagues and I have mutual faith in the knowledge sharing ability of each other.
26	My colleagues and I have a mutual faith-based relationship.
27	My colleagues and I are not reluctant to share our knowledge and experience.
28	My colleagues and I believe in using each other's knowledge appropriately.
29	My colleagues and I share the best knowledge that we have.
30	A humble person puts his colleague's needs above his own personal needs.
31	A humble person is careful not to offend his/her colleagues when arguing with them.
32	A humble person is careful not to say anything that might hurt his colleague's feelings.
33	A humble person is more ready to accept responsibility.
34	A humble person is more ready to apologise.
35	A humble person openly admits his/her weaknesses.
36	A humble person admits when he/she does not know something.
37	A humble person's behaviour means that he/she does not know everything.
38	A humble person gives more credit to colleagues for their good ideas and opinions.
39	A humble person is less likely to dismiss the opinion and input of others.
40	A humble person is more likely to evaluate the opinion and input of others.
41	A humble person is more willing to overcome 'ego concerns'.
42	A humble person asks colleagues for forgiveness when realising that he/she is at fault.
43	Religion is especially important to me because it answers many questions about the meaning of life.
44	I often read books and magazines about my religion.
45	I spend time trying to grow the understanding of my faith.
46	My religious beliefs lie behind my whole approach to life.
47	I make financial contributions to my religious organisation.
48	I enjoy spending time with others of my religious affiliation.
49	Religious beliefs influence all my dealings in life.
50	It is important to me to spend time in private religious thoughts and prayer.
51	I enjoy taking part in activities of my religious organisation.
52	I keep well informed about my local religious group and have some influence in its decision.
53	I perceive my religiosity as strong.