A Study on Student Behaviour Intention of Knowledge Sharing in Higher Education

Ratna Sari, Yulia Magdalena, Marisa Karsen
Information Systems Department
School of Information Systems
Bina Nusantara University
Jakarta, Indonesia 11480
rasari@binus.edu,ymagdalena@binus.edu,mkarsen@binus.edu

***Abstract*—This research discuss main issue which involve several factors such as motivated students attitude towards knowledge sharing used learning management systems (LMS). Adapted from previous research, this research emphasize to analyze students' intention to do knowledge sharing by several factors, which are: Commitment, Enjoyment in Helping Others, Reputation, and Rewards of Organization. Research method used in this research is quantitative method by data collection using questionnaire distribution to several students from variance majors in one private university in Jakarta. The data processes using multiple regression analysis and expected result from this research is found several factors that motivated students to do knowledge sharing in teaching and learning environment, especially in higher education.**

Keywords—knowledge sharing, knowledge sharing behavior, knowledge sharing intention, online knowledge sharing

I. INTRODUCTION

Nowadays, in information technology era, technology development and easy access of information give added value for both nonprofit and profit organizations to manage the knowledge. One of important components in managing knowledge is knowledge sharing. Knowledge sharing can be occurred between individual nor group, which is information can be spread, discuss, and refined that become one general knowledge for those group. [1]

In education industry, knowledge sharing able to do between students and lecturers in teaching and learning session that can improve learning process and help to create knowledge worker. [2] In terms of benefit from knowledge sharing, that knew as not as an easy, takes time for individual nor the person for gather, cooperate, share, and create new knowledge. [3] Related with knowledge sharing, one of common learning method implemented by higher education is blended learning. Blended learning is learning by online and traditional learning in the classroom.[4] The maximum use of e-learning can support collaboration between lecturers and students, support knowledge sharing by using discussion forum in Learning Management Systems (LMS). Knowledge sharing is one of important factor that must being managed in higher education that can make learning process more interactive. This research conduct in one private university in Jakarta whom implement blended learning in their learning process. Furthermore, measure the blended learning concept implementation and also the intention knowledge sharing to improve teaching and learning process, comparing with student action towards knowledge sharing, and also student desire to do knowledge sharing using LMS. Therefore, this research objective is getting information about several factors that affect students' desirable towards knowledge sharing in teaching and learning process, especially in higher education environment that can improve teaching and learning quality.

II. BACKGROUND THEORY

A. Knowledge Sharing

Knowledge sharing research is important related to knowledge management. Knowledge sharing is one of knowledge management's components, which processes to sharing knowledge and easier to get information. [5] The definition of knowledge sharing is a basic learning in one organization, we can transfer and exchange knowledge from multiple sources among individual or team in the organization. [6] Sharing knowledge is the process which individual share the knowledge each other by discussion that can created new knowledge. [7]

B. Blended Learning

Blended learning is one of learning method which combines learning in face to face and online to create integrated instruction in learning process. [8] The other definition of blended learning is an innovation, which involved the new way of teaching and learning process in higher education principle. [9] Learning process can be defined as blended learning when the online learning process occurs 30% until 79%, which can be display in the picture below:

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Course with no online technology used — content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course which uses web-based technology to facilitate what is essentially a face-to-face course. Uses a course management system (CMS) or web pages to post the syllabus and assignments, for example.
30 to 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has some face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

Fig. 1. Proportion of Content Delivered Online [10]

By using blended learning, there are a lot of potentials that we can get. Beside support combination of face to face learning and online learning, blended learning also create blended environments, which are face to face and online learning between large group with small group, self learning, individual communication between lecturer and students. [11]

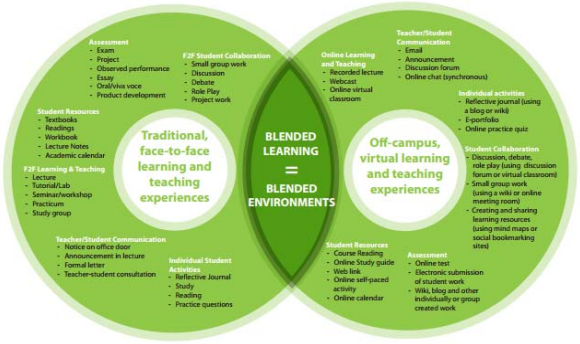

Fig. 2. Blended Learning Potention [10]

In blended learning concept, learning process created by using digital media, internet network, and supporting online media for tutorial which we called it Learning Management Systems (LMS). LMS is web based technology that supported online learning instruction or additional face to face material. [12]. LMS is also software application that can be used for documentation, administration,, tracking, report, education delivery by using electronic technology. [11]

There are several functions in LMS, which are (1) Web Course Design that can control the materials and user interface, (2) Web Course Collaboration Tools that can enable students to send assignment, group discussion, file sharing, and edit file (3) Web Course Management Features that enable lecturer to give score of students' assignment, lecturer performance, and course evaluation, and (4) Web Administrative Features that provide administration functions to secure the data, and technically support for lecturers and students. [13]

III. RESEARCH METHODOLOGY

This research used primary data collected using questionnaire distributed to students in one private University, Jakarta. The questionnaire contains questions about the demographic profile of the respondents such as: age, gender, and department, and comprised of 25 statements related with latent variables within the theoretical model of the study (Figure 3) which are: commitment, enjoyment in helping others, reputation, rewards of organization, attitude towards knowledge sharing, and intention to share knowledge. The operational variables of this study are adapted from Ling Tan & Ramayah (2014) research and revalidated for this study.

A. Research's Model

According to previous studies about knowledge sharing, this research measure knowledge sharing which started from measuring attitude towards in knowledge sharing, after that measure intention to knowledge sharing that conclude in research's model below:

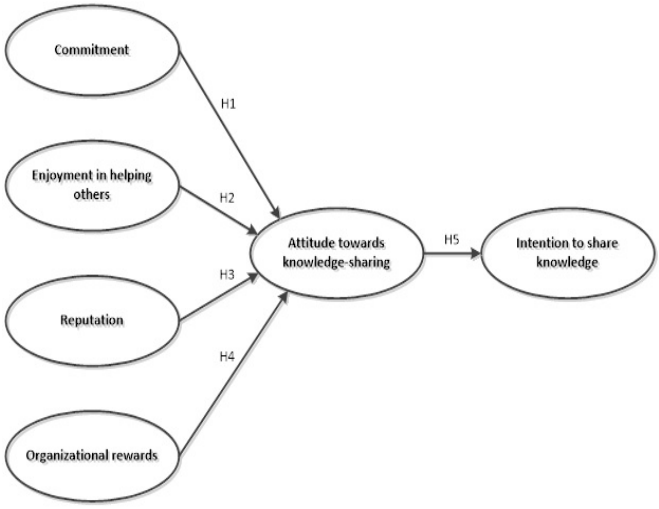

Fig. 3. Knowledge Sharing Model [13]

From the model of research above, was tested 5 hypotheses:

H1: Commitment positively influence attitude towards knowledge sharing
H2: Enjoyment in helping others positively influence attitude towards knowledge sharing
H3: Reputation positively influence attitude towards in knowledge sharing
H4: Organizational Rewards positively influence attitude towards knowledge sharing.
H5: Attitude towards in knowledge sharing positively influence intention towards knowledge sharing

The research model formulated with multiple regression model with the following formula:

$$ATKS=\beta_1 COMM+\beta_2 EIHO+\beta_3 REPT+\beta_4 OGR+\varepsilon$$

After conduct research for the formula above, furthermore using the simple regression, this research conduct the correlation between independent variable attitude towards in knowledge sharing and dependent variable intention towards knowledge sharing.

$$ITKS=\beta_1 ATKS+\varepsilon$$

There are total of 490 respondents consisting from 34 majors from one private university, which filled in complete from the total of 600 respondents were invited.

IV. RESULT AND DISCUSSION

A. Data Analytics

As the first step of research, data tested with correlation test to determine the variables are valid.

TABLE I. CORRELATIONS TEST RESULT COMMITMENT VARIABLE

Correlations

		COMM1	COMM2	COMM3	COMM4	COMM5	COMM6	TOTALCOMM
COMM1	Pearson Correlation	1	.504**	.324**	.574**	.549**	.487**	.764**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	490	490	490	490	490	490	490
COMM2	Pearson Correlation	.504**	1	.386**	.461**	.439**	.397**	.718**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	490	490	490	490	490	490	490
COMM3	Pearson Correlation	.324**	.386**	1	.283**	.343**	.317**	.586**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	490	490	490	490	490	490	490
COMM4	Pearson Correlation	.574**	.461**	.283**	1	.706**	.555**	.816**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	490	490	490	490	490	490	490
COMM5	Pearson Correlation	.549**	.439**	.343**	.706**	1	.522**	.808**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	490	490	490	490	490	490	490
COMM6	Pearson Correlation	.487**	.397**	.317**	.555**	.522**	1	.744**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	490	490	490	490	490	490	490
TOTALCOMM	Pearson Correlation	.764**	.718**	.586**	.816**	.808**	.744**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	490	490	490	490	490	490	490

**. Correlation is significant at the 0.01 level (2-tailed).

TABLE II. CORRELATIONS TEST RESULT ENJOYMENT IN HELPING OTHERS VARIABLE

Correlations

		EIHO1	EIHO2	EIHO3	EIHO4	TOTALEIHO
EIHO1	Pearson Correlation	1	.616**	.313**	.325**	.718**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	490	490	490	490	490
EIHO2	Pearson Correlation	.616**	1	.373**	.387**	.760**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	490	490	490	490	490
EIHO3	Pearson Correlation	.313**	.373**	1	.697**	.790**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	490	490	490	490	490
EIHO4	Pearson Correlation	.325**	.387**	.697**	1	.800**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	490	490	490	490	490
TOTALEIHO	Pearson Correlation	.718**	.760**	.790**	.800**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	490	490	490	490	490

**. Correlation is significant at the 0.01 level (2-tailed).

TABLE III. CORRELATIONS TEST RESULT REPUTATION VARIABLE

Correlations

		REPT1	REPT2	REPT3	TOTALREPT
REPT1	Pearson Correlation	1	.560**	.556**	.817**
	Sig. (2-tailed)		.000	.000	.000
	N	490	490	490	490
REPT2	Pearson Correlation	.560**	1	.648**	.867**
	Sig. (2-tailed)	.000		.000	.000
	N	490	490	490	490
REPT3	Pearson Correlation	.556**	.648**	1	.870**
	Sig. (2-tailed)	.000	.000		.000
	N	490	490	490	490
TOTALREPT	Pearson Correlation	.817**	.867**	.870**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	490	490	490	490

**. Correlation is significant at the 0.01 level (2-tailed).

TABLE IV. CORRELATIONS TEST RESULT ORGANIZATIONAL REWARD VARIABLE

Correlations

		OGRW1	OGRW2	OGRW3	TOTALOGRW
OGRW1	Pearson Correlation	1	.776**	.693**	.910**
	Sig. (2-tailed)		.000	.000	.000
	N	490	490	490	490
OGRW2	Pearson Correlation	.776**	1	.722**	.921**
	Sig. (2-tailed)	.000		.000	.000
	N	490	490	490	490
OGRW3	Pearson Correlation	.693**	.722**	1	.886**
	Sig. (2-tailed)	.000	.000		.000
	N	490	490	490	490
TOTALOGRW	Pearson Correlation	.910**	.921**	.886**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	490	490	490	490

**. Correlation is significant at the 0.01 level (2-tailed).

TABLE V. CORRELATIONS TEST RESULT ATTITUDE TOWARDS KNOWLEDGE SHARING VARIABLE

Correlations

		ATKS1	ATKS2	ATKS3	ATKS4	TOTALATKS
ATKS1	Pearson Correlation	1	.610**	.562**	.580**	.806**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	490	490	490	490	490
ATKS2	Pearson Correlation	.610**	1	.683**	.610**	.858**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	490	490	490	490	490
ATKS3	Pearson Correlation	.562**	.683**	1	.626**	.861**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	490	490	490	490	490
ATKS4	Pearson Correlation	.580**	.610**	.626**	1	.842**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	490	490	490	490	490
TOTALATKS	Pearson Correlation	.806**	.858**	.861**	.842**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	490	490	490	490	490

**. Correlation is significant at the 0.01 level (2-tailed).

TABLE VI. CORRELATIONS TEST RESULT INTENTION TOWARDS KNOWLEDGE SHARING VARIABLE

Correlations

		ITSK1	ITSK2	ITSK3	ITSK4	ITSK5	TOTALITSK
ITSK1	Pearson Correlation	1	.660**	.473**	.528**	.433**	.808**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	490	490	490	490	490	490
ITSK2	Pearson Correlation	.660**	1	.489**	.556**	.527**	.840**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	490	490	490	490	490	490
ITSK3	Pearson Correlation	.473**	.489**	1	.539**	.528**	.748**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	490	490	490	490	490	490
ITSK4	Pearson Correlation	.528**	.556**	.539**	1	.524**	.793**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	490	490	490	490	490	490
ITSK5	Pearson Correlation	.433**	.527**	.528**	.524**	1	.745**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	490	490	490	490	490	490
TOTALITSK	Pearson Correlation	.808**	.840**	.748**	.793**	.745**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	490	490	490	490	490	490

**. Correlation is significant at the 0.01 level (2-tailed).

From table 1 until 6 we can see that the result for all variables in this research are valid. The value of result test is above 0.202 (based on r-table) so all questions used represent the varible and valid.

B. Measurement Model

Initial testing was conducted to determine the variable Commitment, Enjoyment in Helping Others, Reputation does indeed affect Attitude towards in knowledge sharing.

TABLE VII. MULTIPLE REGRESSION RESULT (MODEL 1)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.054	.157		6.711	.000
	AVGCOMM	.132	.043	.125	3.044	.002
	AVGEIHO	.466	.047	.430	10.012	.000
	AVGREPT	.063	.038	.079	1.681	.093
	AVGOGRW	.073	.029	.112	2.469	.014

a. Dependent Variable: AVGATKS

After observing the variable affected the attitude towards in knowledge sharing, the next step is measuring the influence of Attitude towards in knowledge sharing on Towards Knowledge Sharing Intention:

TABLE VIII. SIMPLE REGRESSION RESULT (MODEL 2)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.889	.136		6.551	.000
	AVGATKS	.634	.039	.588	16.061	.000

a. Dependent Variable: AVGITSK

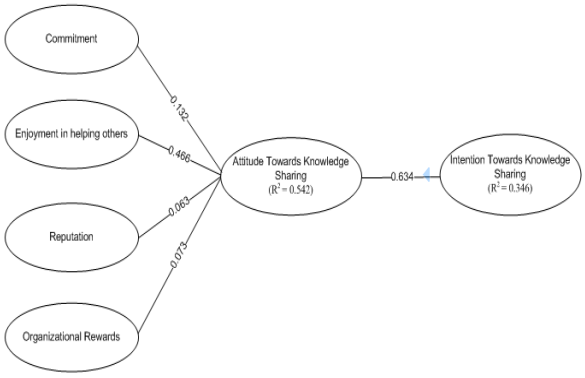

Fig. 4. Result of Measurement Model of Research

According to hypothesis 1, Commitment positively influence attitude towards in knowledge sharing. From table 7, it shown that the level of significance *p* value of the variable was 0.002, it shown that the level of significance *p* value <0.05, so the hypothesis 1 can be accepted or significant.

According to hypothesis 2, Enjoyment in helping others positively influence attitude towards in knowledge sharing. From table 7, it shown that the level of significance *p* value of the variable was 0.000, which means significant p value <0.05, so the hypothesis 2 can be accepted or significant.

According to hypothesis 3, stated that Reputation positively influence attitude towards in knowledge sharing. From table 7, it shown that the level of significance *p* value of the variable was 0.093, which means is not significant, because p value > 0.05, so the hypothesis 3 can not be accepted or rejected.

According to hypothesis 4, stated that Organizational Rewards positively influence attitude towards in knowledge sharing. From table 7, it shown that the level of significance *p* value of the variable was 0.014, which means significant p value < 0.05, so the hypothesis 4 can be accepted or significant.

According to hypothesis 5, stated that Attitude towards in knowledge sharing is influence intention towards knowledge sharing. From table 7, it shown that the level of significance *p* value of the variable was 0.000, which means significant p value < 0.05, so the hypothesis 5 can be accepted or significant.

According to the regression result, we make comparison through discussion with previous research from every hypothesis:

H1. *Commitment positively have an influence on the attitude towards knowledge sharing.*

The results of hypothesis testing against H1 shows that the significance p value of 0.002 where values below the limit of allowable error is 0.05. The results are consistent with previous studies conducted by (Tan & Ramayah, 2014) where

the commitment was significantly affects a person's desire to do knowledge sharing.[14]

H2. Enjoyment in helping others in a positive influence on the attitude towards knowledge sharing.

H2 hypothesis testing result showed that the significance p value of 0.000 where values below the limit of allowable error is 0.05. The results are consistent with previous study, whereby when someone had the pleasure and enjoy the experience while making knowledge sharing, then that will happen next is going to make seseroang have attitude accustomed to sharing knowledge possessed.[14],[15]

H3. Reputation is a positive influence on the attitude towards knowledge sharing.

H3 hypothesis testing result showed that the significance p value of 0.093 where the value is above the limit of allowable error is 0.05, but if the margin of error allowed is 0.1, then this measurement can accepted. The results of this study are not consistent with previous studies which the reputation apparently has no influence on a person's attitude to knowledge sharing. However, study states that there is no significant relationship between increased reputation attitude towards knowledge sharing.[16],[17]

H4. Organizational Rewards positively have an influence on the attitude towards knowledge sharing.

H4 hypothesis testing result showed that the significance p value of 0.014 where values below the limit of allowable error is 0.05. The results are consistent with previous studies where the reward influence the attitude to knowledge sharing. Relating to the research conducted by the authors, the reward in question is an increase in the value of academic as well as awards from the lecturer. According to previous research extrinsic rewards-which can be a value-added (bonus point) - have significant relationship to knowledge sharing. The results of this study indicate that if the reward increases, the attitude of students to knowledge sharing will increase.[18]

H5. Attitude towards knowledge sharing is a positive influence on Intention Towards Knowledge Sharing

Results of testing hypotheses against H5 shows that the significance p value of 0.000 where values below the limit of allowable error is 0.05. The results are consistent with previous studies whereby when a person has an attitude to knowledge sharing it will automatically have the desire to make knowledge sharing.

V. CONCLUSION

From the result of this study, we can conclude that commitment, happiness, enjoyment of knowledge sharing experience, and rewards from lecturer to the students can increase students' willingness to do the knowledge sharing. The happiness and enjoy the experience of knowledge sharing, will cause a person gains particular attitude to always share his/her knowledge to other people. On the other hand, the attitude to do knowledge sharing, will automatically trigger a person to do knowledge sharing. So, the important point for trigger the students to do knowledge sharing.

In this research, we also can conclude that students reputation is not affected the desire to do knowledge sharing. It means to increase students' willingness to do knowledge sharing, University can facilitates media for students to do knowledge sharing, and also lecturer can give additional points for students.

REFERENCES

[1] Ghadirian, H., Ayub, A. F., Silong, A. D., Bakar, K. B., Mohammad, A., & Zadeh, H. (2014). Knowledge Sharing Behavior among Students in Learning Environments: A Review of Literature. *Asian Social Science* , Vol. 10 No. 4.

[2] Ong, H.-B., Yeap, P.-F., Tan, S.-H., & Chong, L.-L. (2011). Factors Influencing Knowledge Sharing among Undergraduate Students: A Malaysian Perspective. *Industry and Higher Education Journal* , 133-140.

[3] Mallasi, H., & Ainin, S. (2015). Investigating Knowledge Sharing Behaviour in Academic Environment. *Journal of Organizational Knowledge Management* .

[4] R. Sari and M. Karsen, "An empirical study on blended learning to improve quality of learning in higher education," *2016 International Conference on Information Management and Technology (ICIMTech)*, Bandung, Indonesia, 2016, pp. 235-240.

[5] Paulin, D., & Suneson, K. (2012). Knowledge Transfer, Knowledge Sharing and Knowledge Barrier - Three Blurry Terms in KM. *The Electronic Journal of Knowledge Management* , 81-91.R. Nicole, "Title of paper with only first word capitalized," J. Name Stand. Abbrev., in press.

[6] Jonsson, A. (2008). A Transnational Perspective on Knowledge Sharing: Lessons Learned from IKEA"s Entry Into Rusia, China and Japan. *The International Review of Retail, Distribution and Consumer Research* , 17-44.

[7] Alam, S., Abdullah, Z., Ishak, N., & Zain, Z. (2009). Assessing Knowledge Sharing Behaviour among Employees in SMEs: An Empirical Study. *International Business Research* , Vol. 2 No. 2, Pp 115-122.

[8] Venkateswarlu, D. N. (2014). Blended Learning. International Journal of Multidiciplinary Educational Research, ISSN : 2277-7881, Volume 3 - May 2014 , 310 - 317.

[9] Naiker, B., Archer, W., Vaughan, N., Matus, T., Garrison, R., Dyjur, P., et al. (2011). *Innovative Practice and Research on Blended Learning.* Canada: Collaboration for Online Higher Education and Research.

[10] Allen, E. S. (2007). Blending in : The Extent and Promise of Blended Education in the United States. United States: Sloan-C.

[11] Bourke, D. B. (2010). *Getting Started with Blended Learning.* Gold Coast , Australia: Griffith University.

[12] Passerini, K. (2008). Evaluating Learning Management Systems. *Web-Based Education and Pedagogical Technologies* (pp. 159-182). Hershey, Pennsylvania, United State: IGI Global.

[13] Elis, R. K. (2009). *A Field Guide to Learning Management Systems.* America: American Society for Training and Development (ASTD).

[14] Tan, C. N.-L., & Ramayah, T. (2014). The Role of Motivators in Improving Knowledge Sharing Among Academics. *Information Research Journal* , Vol 19 No. 1, March.

[15] Ghadirian, H., Ayub, A. F., Silong, A. D., Bakar, K. B., Mohammad, A., & Zadeh, H. (2014). Knowledge Sharing Behavior among Students in

Learning Environments: A Review of Literature. *Asian Social Science*, Vol. 10 No. 4.

[16] Khalil, D. T., Atieh, D. K., Mohammad, D. A., & Bagdadlian, E. F. (2014). Examining the Social and Technical Factors Influencing School Teachers Knowledge Sharing Intentions in a Teachers Online Professional Community. Electronic Journal of Knowledge Management ,Volume 12 (Issue 3), 157-165.

[17] Mallasi, H & Ainin, S. (2015). Investigating Knowledge Sharing Behaviour in Academic Environment Journal of Organizational Knowledge Management.

[18] Shoemaker, N., & F, S. (2014). Can Universities Encourage Students' Continued Motivation For Knowledge Sharing And How Can This Help Organizations? Journal of College Teaching & Learning , Vol 11 (Number 3), 99-114.