Empirical Analysis of Social Media Technologies Adoption And Usage in Higher Education in Oman

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ABSTRACT

This paper examines the impact of social media technologies adoption by the higher education academics in Oman. Researchers have tested and suggested different constructs to validate the impact of social media technologies in educational settings. Therefore in this paper, authors used constructs – utilitarian values, social influence, gender, and work experience to study the perception of the full-time academics' on the incorporation of social media technologies for teaching and learning purposes. In this study, authors used a survey to collect the sample from 180 full-time lecturers at one of the higher education colleges under the ministry of manpower, Oman. This paper uses descriptive statistics, reliability analysis to determine Cronbach's α and regression analysis. The undergoing analysis and findings of this study can be used as the recommendations by the faculty members on social media technologies adoption for educational, learning and teaching practices. This research perhaps the leading attempt to use utilitarian values and social values considered by the lecturers on social media technologies in an academic culture and settings of the developing country in the Middle East (Oman).

Keywords: Social media technology, Higher education, Utilitarian values, Social value, Gender, Work experience.

INTRODUCTION

Social media technologies such as Facebook, Twitter, YouTube, Instagram, and Google+ have become an integral part of our society. However, the adoption and use of these different platforms are solely based on one's priority and awareness. According to statista.com, 2016, social media platforms usage has been mounting rapidly. In a report published by Statista.com, 2016, more than two billion internet users are now active social media users. Many organizations such as academics, insurance, banking, or healthcare encourage employees with social media technologies (SMTs). They believe that using SMTs help employee to gain in work-related activities, develop connections with their clients and co-workers, share ideas and resources, and last but not least brush-up their knowledge and skills (Behringer and Sassenberg, 2015; Zhang et al., 2015; Cao et al., 2012). In several past studies, researchers examined the role of SMTs in education. According to these studies (Sharma et al., 2016; Sobaih et al., 2016; Lytras et al., 2014; Liu, 2010; Barbour and Plough, 2009), SMTs empower teachers (instructors) and students with innovative idea generation, swift communication, and collaborative developments.

As we studied the existing literature, we found that the there is a number of studies focusing on students' perception of SMTs use and adoption in academics. A very few studies (Sobaih et al., 2016; Al-Aufi and Fulton 2015; Saleem et al., 2015) addressed the viewpoint of the faculty members or teachers (as participants) on the management of social media technologies for learning and teaching purposes in educational institution in the developing countries, especially in the Middle East. Therefore, in this study, we aim to examine the potential future trends and the perception of higher education instructors on SMT adoption for learning and teaching purposes. The following research questions are designed to achieve the objective of this study:

RQ1. What social media tools do instructors use at the workplace?
RQ2. Is there any association between gender and SMT use for academic learning purposes?
RQ3. What factors influence instructors to adopt SMTs for learning and teaching purposes?

> **Background**

Social media platforms have been accepted and used widely by teachers and students for learning purposes (Ellison and Boyd, 2013). The researcher studied the use of social media and its use for the communication between teachers

and students in higher education (Dyson et al., 2015; Sugimoto et al., 2015). The adoption of social media platforms allows students to share academic resources, collaborate with other scholars, develop a communication channel, and improve critical thinking skills for learning purposes. This adoption can be utilized as an informal tool to enhance the scope of learning (Sharma et al., 2016; Sobaih and Moustafa, 2016). Past studies investigated the fusion between social media technology and higher education. For instance, Roblyer et al. (2010) examined students' and teachers' viewpoint about the adoption of social media tools in education. The study showed that students were more inclined towards the use of SM tools than the instructors for the academic activities. In contrast, Hung and Yuen (2010) found that social media technology can be utilized by the instructors for developing a sense of group learning among students in higher education. Likewise, the study by Wheeler et al. (2008) showed that social media tools for students' educational activities helped in alleviating the anxiety level of the students.

> ### *Utilitarian value for social media technology use at work*

Holbrook and Hirschman (1982) classified utilitarian values as the user behaviour for using information systems, and information and communication technologies. In other words, Utilitarian value (UV) – "is referred to the degree to which employee perceives using social media to be a useful and effective means" (Voss et al., 2003). Past studies proposed a model to examine perceived utilitarian usefulness (PUU) of the multipurpose information system such as instant messengers (IMs) adopted by employees at work (Gu et al., 2010). The results highlighted the positive significance of UV on user's intention to use instant messengers for work purposes. A similar study on social networking platform (LinkedIn, Facebook, YouTube, and etc.) showed that utilitarian characteristics SNS play a significant role in employees' entertainment or job search activities (Brecht et al., 2012). Researchers (Leftheriotis and Giannakos, 2014) use impactive, helpful, functional, necessary, and practical as UV indicators. The results showed that UV influence employees to adopt SMTs for work-related tasks. In light of above-stated studies, this study considered similar indicators to examine the impact of these indicators on instructors' SMTs adoption at a workplace. Thus, the following hypothesis is formulated:

H1: Utilitarian value (UV) of SMT is positively and significantly influences instructors' adoption of SMTs at a workplace.

> ### *Technology acceptance constructs and investigations*

Existing literature clearly showed that technology acceptance theories and models, used for investigating the impact of SMTs, successfully proved the validity of the various constructs. Many researchers used different constructs and proposed various technology acceptance models. The most popular model known as Technology Acceptance Model (TAM) proposed by Davis et al. (1989) introduced two new constructs – PU (perceived usefulness) and PEOU (perceived ease of use) to determine user's intention for information systems acceptance. Venkatesh and Davis, (2000) formulated a new unified model known as Unified Theory of Acceptance and Use of Technology (UTAUT). The model was based on four key determinants - PE (performance expectancy), EE (effort expectancy), SI (social influence) and FC (facilitating conditions). UTAUT (Venkatesh and Davis 2000) has been used in many past studies for validating the UTAUT determinants for technology acceptance. Findings of those studies (Milosevic et al., 2015; Decman, 2015; Sanchez et al., 2014; Gruzd et al., 2012) used SI construct along with other constructs as one of the key factors to examine its impact on social media technology adoption for educational activities. In this present study, Social influence (SI) is referred to the degree to which an instructor recognizes the importance of social media technology adoption derived from the perceptions of other instructors and motivation to use SMTS at the workplace. Therefore, the following hypothesis is developed:

H2: Social influence (SI) is positively and significantly related to the instructors' SMTs adoption at a workplace.

RESEARCH METHODOLOGY

> ### *Participants and questionnaire*

As the key objective of this research is to examine SMTs adoption at a workplace, a survey instrument is distributed in one of the seven higher education colleges of technology (CoT) under Ministry of Manpower (MoM), Sultanate of Oman. The questionnaire was designed to collect data from the full-time lecturers (position as per the MoM rules and regulations) working in different academic departments which include - Information and Technology, Engineering, Business Studies, and English Language Center. In this study, we used the convenience sampling

method. More than 210 paper-based questionnaires were distributed to all the departments and recollected after one week time. Out of 210 surveys, 180 completed and valid surveys were used for the analysis purpose.

➢ *Variables measurement*

The survey includes total four sections. Section (A) was designed to collect demographic information of the lecturers such as gender, age, education level, and teaching experience. Section (B) – , designed to obtain information on the use of SMTs at a workplace (how often they use SMT for teaching and learning purposes, do they use SMT to communicate with friends, colleagues or students, and frequency of SMT use at the workplace. Section (C) comprised of five UV indicators (impactive, helpful, functional, necessary, and practical) to measure SMT use by instructors at workplace (Voss et al., 2003; Leftheriotis and Giannakos, 2014) and section (D) consisted questions identify the social influence impact on instructors' use of SMT at their workplace (Venkatesh and Davis, 2000)**.**

The section (B) was measured on four-item scale ($\alpha=0.79$, M= 3.7, S.D. = 1.05). Section (c), utilitarian values (UV) ($\alpha=0.92$, M= 3.9, S.D. = 0.91) measured on a five-item scale for each value. Section (D) was measured on a three-item scale ($\alpha=0.88$, M= 3.2, S.D. = 1.10). All the scales were measured using a 5-point Likert scale and the composite measures were calculated as an average of the multi-item scales.

➢ *Sampling*

In this study, 180 valid samples of instructors were used for the analysis. The summary of demographic details is given in Table 1.

Table 1. Demographic details of the respondents.

Variables		Frequency	Percent
Gender	Male	123	68.3
	Female	57	31.7
Age	under 30 years	7	3.9
	30-40 years	76	42.2
	over 40 years	97	53.9
Educational level	Bachelors	23	12.8
	Masters	121	67.2
	Doctorate	36	20.0
Teaching Experience	0-5 years	12	6.7
	5-10 years	40	22.2
	over 10 years	128	71.1

PROPOSED WORK

The findings of this study, in order to address the research questions of this study, are as follows:

➢ *Findings*

RQ1. What social media tools do instructors use at a workplace?
The findings of this study showed that YouTube is the highly preferred tool used by the instructors followed by Facebook, Wikipedia, and Google plus. Besides the popular SMT tool, instructors also preferred other SMT at a workplace. The descriptive analysis of SMT tools preferred by the instructors is given in Table 2.

Table 2: SMT tools preferred by the instructors

SMT Tools use at Workplace		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	You Tube	55	30.6	30.6	30.6
	Facebook	25	13.9	13.9	44.4
	Wikipedia	29	16.1	16.1	60.6
	Googe+	59	32.8	32.8	93.3
	Others	12	6.7	6.7	100.0
	Total	180	100.0	100.0	

RQ2. Is there any association between gender and SMT use for academic learning purposes?
As the second research question of this study is to examine the relationship between gender of the instructors and SMT use for academic learning purposes. The results showed that there was no significant association between SMT for academic learning purposes and gender since $\chi^2(4)$= 1.962 and p >0.05 (See table 3)

Table 3: Gender and SMT association

GENDER and SMT for Academic & Learning Crosstabulation

		SMT for Academic & Learning Purposes					Total
		Strongly Disagree	Disagree	Satisfactory	Agree	Strongly Agree	
GENDER	MALE	6	11	25	52	29	123
	FEMALE	2	5	8	24	18	57
Total		8	16	33	76	47	180

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.962[a]	4	.743
Likelihood Ratio	1.980	4	.740
N of Valid Cases	180		

a.1 cells (10.0%) have expected count less than 5. The minimum expected count is 2.53.

RQ3. What factors influence instructors to adopt SMTs for learning and teaching purposes?
Another key aim of this study is to investigate the factors that influence instructors' SMT adoption for academic activities. For this purpose, we proposed two hypotheses H1 and H2.
Our findings showed that the beta coefficients (B) value of UV mean is 0.634 and p<0.05 which indicates that there is a positive and significant relationship between UV and SMT use at work (SMUW). Also, the beta coefficient (B) value of SI mean is 0.141 and p<0.05 which indicates that there is a positive and significant relationship between SI and SMT use at work (SMUW). Thus H1 and H2 supported. See table 4 and 5.

Table 4: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.707	.236		2.995	.003
	UVmean	.643	.061	.614	10.533	.000
	SImean	.141	.049	.169	2.891	.004

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.693[a]	.481	.475	.60179

a. Predictors: (Constant), SINFLNCmean, UVmean

CONCLUSION

The main objective of this study is to examine the use and adoption of social media technologies by higher education instructors in the technical college in Oman. There are three key research questions of this study. The first research question is disposed to investigate what SMT tools instructors prefer at their workplace. The findings showed that YouTube is the most preferred SM tool followed by Facebook, Wikipedia, and Google plus. The second research question is designed to identify the association between instructors' gender and SMT use for academic learning purposes. The results showed that there is no significant relationship between specific gender and use of SMT at a workplace. In simple words, SMT use at a workplace is not gender biased. The third and the most important research question of this study is to determine the independent factors (UV and SI) that impact instructors' SMT use for learning and teaching purposes. The results showed that both UV and SI have the significant and positive impact on social media technologies use for learning and teaching purposes. In other words, use of SMT allows instructors to share academic contents with their students and/or colleagues, engage students in their courses, and access to teaching and learning material posted by other educators on social media platforms (Abdelraheem et al., 2015; Sobaih et al., 2016; Al-ufi and Fulton, 2015; Liu, 2010).

The further analysis of the results showed that social influence (SI) is another key factor followed by the UV motivating instructors to use the SMTs for academic activities. In other words, instructors' use of SMTs for educational activities is determined by the recommendations of co-instructors (Sharma et. al., 2016). The findings of this study can be used as the key commendations for the academics, administration, and policymakers that SMT use for educational purposes can work like a buttress of educational institutions and help in improving the overall educational, learning and teaching practices.

REFERENCES

Al-Aufi, A., and Fulton, C. (2015). Impact of social networking tools on scholarly communication: a cross-institutional study, *The Electronic Library,* 33(2), 224-241.

Barbour, M. and Plough, C. (2009). Social networking in cyberschooling: Helping to make online learning less isolating, *TechTrends*, 53(4), 56-60.

Behringer, N., and Sassenberg, K. (2015). Introducing social media for knowledge management: Determinants of employees intentions to adopt new tools, *Computers in Human Behavior*, 48, 290-296.

Brecht, F., Eckhardt, A., Berger, C., and Guenther, O. (2012).Corporate career presences on social network sites: an analysis of hedonic and utilitarian value, *In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* , 2441-2450.

Cao, X., Vogel, D. R, Guo, X., Liu, H., and Gu, J. (2012). Understanding the influence of social media in the workplace: an integration of media synchronicity and social capital theories, *In 45th Hawaii International Conference on System Science (HICSS),* 3938–3947.

Decman, M. (2015). Modeling the acceptance of e-learning in mandatory environments of higher education: The influence of previous education and gender, *Computers in Human Behavior*, 49, 272-281.

Davis, F. D., Bagozzi, R. P., andWarshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models, *Management science*, 35(8), 982-1003.

Dyson, B., Vickers, K., Turtle, J., and Cowan, S. (2015). Evaluating the use of Facebook to increase student engagement and understanding in lecture-based classes, *Higher Education*, 69, 303-313.

Ellison, N. B., and Boyd, D.(2013). Sociality through social network sites,*Oxford University Press*, 151-172.

Gruzd, A., Staves, K., andWilk, A. (2012),Connected scholars: Examining the role of social media in research practices of faculty using the UTAUT model, *Computers in Human Behavior*, 28(6),2340-2350.

Gu, J. C., Fan, L., Suh, Y. H., and Lee, S. C. (2010),Comparing utilitarian and hedonic usefulness to user intention in multipurpose information systems, *Cyberpsychology, behavior, and social networking*, 13(3), 287-297.

Holbrook, M. B., and Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun, *Journal of consumer research*, 9(2),132-140.

Leftheriotis, I., and Giannakos, M. N. (2014). Using social media for work: Losing your time or improving your work?, *Computers in Human Behavior*, 31,134-142.

Liu, Y. (2010). Social media tools as a learning resource,*Journal of Educational Technology Development and Exchange,*3(1), pp. 101-114.

Lytras, M. D., Mathkour, H., Abdalla, H. I., Yáñez-Márquez, C., and De Pablos, P. O. (2014). The Social Media in Academia and EducationResearch R-evolutions and a Paradox, *Advanced Next Generation Social Learning Innovation. J. UCS*, 20(15), 1987-1994.

Milosevic, I., Zivkovic, D., Arsic, S., andManasijevic, D. (2015). Facebook as virtual classroom–Social networking in learning and teaching among Serbian students, *Telematics and Informatics*,32(4),576-585.

Roblyer, M. D., McDaniel, M., Webb, M., Herman, J., and Witty, J. V. (2010). Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites, *The Internet and Higher Education,* 13(3), 134-140.

Sanchez, R. A., Cortijo, V., andJaved, U. (2014), Students' perceptions of Facebook for academic purposes, *Computers and Education*,70, 138-149.

Statista.com (2016). Leading social networks worldwide as of April 2016, ranked by number of active users",available at: www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/ (accessed *22 April 2016)*

Sugimoto, C., Hank, C., Bowman, T., andPomerantz, J. (2015). Friend or faculty: social networking sites, dual relationships, and context collapse in higher education, *First Monday*, Friend or faculty: social networking sites, dual relationships, and context collapse in higher education,20(3).

Sharma, S. K., Joshi, A., and Sharma, H. (2016). A multi-analytical approach to predict the Facebook usage in higher education, *Computers in Human Behavior,*55,340-353.

Sobaih, A. E., andMoustafa, M. (2016). Speaking the same language: the value of social networking sites for hospitality and tourism higher education in Egypt, *Journal of Hospitality and Tourism Education*, 28(1), 46-56.

Sobaih, A. E. E., Moustafa, M. A., Ghandforoush, P., and Khan, M. (2016). To use or not to use?Social media in higher education in developing countries, *Computers in Human Behavior*, 58, 296-305.

Venkatesh, V., and Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies, *Management science*, 46(2), 186-204.

Voss, K. E., Spangenberg, E. R., andGrohmann, B. (2003). Measuring the hedonic and utilitarian dimensions of consumer attitude, *Journal of marketing research*, 40(3), 310-320.

Vygotesy, L. S. (1992). Educational psychology, Florida: St. Luice Press.

Wheeler, S., Yeomans, P., and Wheeler, D. (2008).The good, the bad and the wiki: evaluating student-generated content for collaborative learning, *British Journal of Educational Technology*, 39(6), 987-995.

Zhang, X., Gao, Y., Yan, X., de Pablos, P. O., Sun, Y., and Cao, X. (2015).From e-learning to social-learning: Mapping development of studies on social media-supported knowledge management, *Computers in Human Behavior*, 51, 803-811.