Using TAM Model To Measure The Use Of Social Media For Collaborative Learning

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Abstract— **The social media have all generations of Internet users, becoming a prominent communications tool and found to be facilitating teaching and learning by collaborative learning, the part of sharing and collaborating activities among students and between students and the lecturers appear to be very important. From this point, social media appear very helpful in building academic groups to achieve better academic performance of students. It is then, the purpose of this study to provide a better understanding of how students are investing their skills in using their social media for collaborative learning and to examine factors affecting their use through theory of technology accept model (TAM) to improve collaborative learning that will improve the students' academic performance among students in University Technology Malaysia . the result in this study found that university students needs to take a more interactive role in creating a collaborative learning environment and constructing "communities of practice" among students with peers and , faculty, rather than just wasting time.**

I. INTRODUCTION

The researchers build on the perspective that social media derive from an information technology innovation and thus investigate the determinants of adoption collaborative learning of such platforms from an adoption of collaborative learning between students. Although several theories have been proposed to explain the adoption of innovations and collaborative learning among peers /new products [1], the technology acceptance model (TAM) [2], successfully explains the adoption of different information technology instruments [3]. According to Davis et al. (1989), this model predicts the likelihood of a new technology being adopted within a group of individuals or organizations. Since its origin, TAM and its revisions have been applied to a variety of technologies.[4&5] conducted meta-analysis studies in this area and confirmed that TAM explains the adoption of numerous technologies, ranging from software packages to various online services. Thus, the purpose of the research is twofold. First, we expect to confirm the level of usage of Facebook and analyses several characteristics of social media users. Second, we aim to examine the relevance of TAM within the context of a new technological platform, as is the case of social media. Given that most technologies studied so far consist of work-related tools, this will constitute a test of this model in a different context and contribute to the understanding of adoption determinants of social media network.

While social media, such as Facebook and to a lesser extent twitter, raise significant interest in the practitioners' community in terms of their educational impact, especially as a communication tool, academic research in this area is still in its infancy. Studies addressing social media network from a educational perspective have just begun to find importance education for collaborative learning, in particular concerning determinants of adoption of social media.

II. RELATED WORK

A. social media and education

Definitions of social networks in research literature shows that although some studies focused on structural characteristics of these tools such as the profiles, uploading photographs, comments, writing on walls, and friends' lists. Some others focused on communication and collaboration.

Ease of use, allowing for rapid updating, analyzing and sharing continuously increasing information stemming from our daily life, establishing spontaneous relationships, supporting informal learning practices by means of interaction and communication, and facilitating delivery of education are explained as the reasons why social networks such as Facebook, MySpace, Friendster, Youtube, and Flickr are adopted and accepted rapidly although they had originally emerged for sharing photos, personal information, videos, profiles and content [6&7]. Thus, using social networks in an academic performance context is attractive for these young users, will be given a chance to acquire new knowledge through subliminal, effective and smooth learning processes while taking part in enjoyable interactive situations mediated through interesting and motivating tools and content [8&9].

Facebook is being considered as an educational tool because of its beneficial qualities such as enabling peer feedback, goodness of fit with social context, and interaction tools [10]. Because most Facebook users are between 18 and 25 years old, they mostly are university students [11]. Hence, it can easily be deduced that it can be a useful educational tool especially by providing active participation and collaboration.

On the other hand, how and for which purposes these tools will be used in educational contexts is still awaiting researchers' interest. In the related studies it is argued that Facebook and other social networks facilitate informal learning because of their active role in members' daily

lives. Social network sites support collaborative learning, engage individuals in critical thinking, enhance communication and writing skills through activating members work in personalized environments [6&12]. In addition to these,[13] claim that social networks are pedagogical tools because people can use them for connectivity and social support, collaborative information discovery and sharing, content creation and knowledge and information aggregation and modification.

B. Technology acceptance model

The TAM builds on the theory of reasoned action (TRA) [14]. TRA has its roots in social psychology and attempts to explain why individuals engage into consciously intended behaviors. The simplicity of this theory and its ease of use make it very popular and well suited to many research settings in which prediction of behavior is the major purpose of the researcher in this research to improve collaborative learning among students in higher education in Malaysia.

In TAM, a user's motivation to adopt a new technology can be explained by three constructs: perceived ease of use (PEU), perceived usefulness (PU) and intention to using of social media for collaborative learning (Figure 1). Both PEU and PU are beliefs impacting on intention to use social media, whereas PEU has also a direct influence on PU [2]. A later development of TAM included the BI to use as a new variable that would be directly influenced by PU and intention to use social media [15].

The user of social media network PU refers to the prospective user's belief that adopting a given technology will contribute to a better performance. PEU refers to the degree to which an individual expects no physical and mental difficulties in adopting the technology at hand [2&16].

Specifically, PEU shows how much effort an individual needs to effort in using an information technology. PU and PEU are, therefore, the two relevant beliefs for determining intention to use social media for improve the collaborative learning among universities students. Besides its direct impact on attitude, the TAM model postulates a positive direct impact of PEU on PU. This is justified insofar as PEU contributes to a better performance, as effort saved due to ease of use may enable the individual to accomplish more tasks.

TAM has been shown to explain adoption behavior of different information systems and technologies [4&5] for meta-analysis studies considering the exponential growth of social media network use. As [17] claim, after doing a comprehensive literature review, it is necessary to conduct more empirical research on the use of Facebook as an educational tool. along these lines, [18] states that, before we can realize the benefits of technology, we must better understand how our students use it via TAM.

III. METHODOLOGY

The data for this study was collected by way of a survey questionnaire administered on 80 Undergraduate and postgraduate students during the October /2013. The age-range of the respondents was between 18 to 36. The sample consisted of 31 males and 49 females. Students were instructed in the survey to offer information about their experiences and impact of using social media on collaborative learning through technology accepts model (TAM) a quantitative approach and give the students the questionnaire in UTM library was used to draw the data for this research.

Step1: Respondents

In this research 80 set of questionnaires was randomly distributed to Undergraduate and postgraduate students of the Universiti Teknologi Malaysia. SPSS application (Version-20) was used to analyze the data. The instrument used for this study was designed based on the objectives of the study. It was piloted and the Cronbach's alpha of the reliability and validity of the instrument was put at .813. This is acceptable and the instrument has met the reliability requirement for the study.

Step 2 Data Collection Procedures

A five-point Likert scale (1 for strongly disagree to 5 strongly agree) was applied in this study. The questionnaire was fine-tuned with reference to a pilot study carried out with students, and tested before-hand, examines the students' opinions about the use of social media on collaborative learning through technology accept model (TAM) theory in Malaysian higher education. A questionnaire consisting of 17 items was designed, following minor revisions to the layout; the survey was administered at the end of the semester (October, 2013). Each participant was provided with a questionnaire and a brief background to the research.

The table on appendix shows the 17 items used to measure the constructs included in our framework. Was measured Perceived ease of use, and Perceived usefulness was measured using a subset of four items from [6&19], intention to use social media was measured using five items from [20], and finally, Collaborative learning was measured using four items adapted from, [21].The letters PEU perceived ease of use, letters PU perceived usefulness, letters IU intention to use social media, and letters CL collaborative learning.

IV. CONCEPTUAL FRAMEWORK AND HYPOTHESES

The expended technology acceptance model in acceptance of social networking media the extended technology acceptance model (TAM) uses information systems theory to describe how users come to accept and utilize a technology. TAM variables include perceived usefulness, perceived ease of use and attitude to determine one's intention to use the technological tool.

This research purpose for a brief discussion on the contents in the suggested framework for The Impact of Social Media use on collaborative learning among university students through technology accept model (TAM) theory , at Universiti Teknologi Malaysia. However, this research finds that social media integration relates to the collaborative learning among students, the variables observed to be used of social media, in this study are: perceived ease of use (PEU) and perceived usefulness (PU). Influence collaborative learning through Intention to use social media "mediator" because the dependent variable, are the students' perception as the independent variable.

Easy to use

Social media network provides various opportunities among which enabling communication, collaboration, information sharing and enjoyment all of which are suggested as important factors influencing Facebook's adoption. For the purposes of this study, usefulness is defined as the perception formed by the belief that using a particular system enhances individuals' performance while claiming that this particular innovation is better than its precursors [22]. The TAM assumes that students are likely to adopt a new technology to the extent that they believe it would help them to improve performance their study and the degree to which an individual believes that using a new technology would be free of cognitive effort ease of use [23]. [16] Suggests that perceived usefulness has a direct effect on behavioral intention over and above attitude, whereas perceived ease of use has an influence on attitudes and behavior.

[24] pointed out that the constructs included in the TAM can be applied to a variety of computer technologies; however, an integrated model or extended model can make it possible to provide more explanatory power than the original model alone [25]. With respect to the TAM and social media, [26] developed the extended TAM model to social media network services including three external variables such as social identity, altruism and tele-presence and found that tele-presence was the most significant factor contributing to the use of social network services.

Usefulness

An important factor influencing adoption of social media network is the combination of that specific user's technical skills and his or her competence in the peculiar features of Facebook such as photo and file uploading and downloading, profile editing, and using the menus. In this study, ease of use is defined as "using Facebook features easily and managing the overall Facebook content without much effort" [22]. The TAM assumes that students are likely to adopt a new technology to the extent that they believe it would help them to improve performance their study (usefulness), In addition, [27] also created the modified TAM model incorporating synchronicity, involvement and user flow to predict the attitude and intention to use Cyworld Given the wide adoption of the extended TAM model in innovative technology.

According to [28], was study includes the critical mass construct, which is assumed to have an influence on the adoption of social media by meeting planners. However, while adding the critical mass construct to TAM model, the study does not just aim to extend the model to a new technology, but it also seeks to find how meeting planners' perceived critical mass of social media influences its adoption. Simply put, our proposed Social Networking Media Adoption Model (SNMAM) merges perceived critical mass directly and indirectly, perceived usefulness, ease of use and attitude toward to using an extended TAM model.

Intention of use social media

User intention to use social media towards the system in place is the key factors in building technology utilization models [29&15] All these theories/models are extended from the basic principles of TRA which believes that intention to use the system is the function of attitude towards individual behavior and subjective norms which was later extended to include perceived control and hence TPB [30]. Perceived enjoyment is considered as an important user's post-adoption belief that leads to increased levels of user satisfaction and continuance intention [31]. According [32] the researcher found that individuals who enjoy a web system will view their interactions with the system more positive and form a high behavior intention to use it.

Collaborative learning

Social Networking Tools such as Facebook may be used to develop new collaboration models. [33] concludes that the conversational, collaborative, and communal qualities of social media network enhance the learning process. Several studies explore the potential of Facebook as a learning resource that promotes collaborative and cooperative learning [34]. [34] Developed Facebook pages for four university courses to analyze student's

perceptions of Facebook as an interactive learning tool. Students in favor of using Facebook for academic purposes stated many reasons for the course Facebook page being an effective learning resource such as increased interaction and participation in discussions about course topics, and exposure to relevant media and learning materials.

However, some concern was raised about the need to keep updated with the course Facebook activity [34]. As social media network such as Facebook contains different categorical groups and communities, it provides opportunities for members to join new networks in a way to open up spaces for collaborative learning [35&36].

Facebook can promote collaborative models of learning, connect students and instructors, increase learners' motivational level, and create a more comfortable classroom climate [37]. In addition, Facebook can create strong communities of practice for teaching and learning that expand the learning process beyond the boundaries of a traditional classroom [17].

coefficient between the Intention to use social media and collaborative learning found to be a positively and significantly with value of 0.286 at significant level less than 0.05.

In line with the outcome of this study to understand students' collaborative learning by using social media in higher education, the following have been discovered: To acquire a general satisfaction of social media since it Encourages and facilitates student utilization of social media for collaborative learning, and boost the education and experience with students to improve academic performance. In terms of interactivity and collaborative among students on social media (easy to use) and acquired a higher percentage since it it to be simple for student to go over questions along with other students through collaborative learning by using of social media It is easy to networking and collaborative with them because it is the same age, class and education level.

	PE	PU	IU	CL
PE	1			
PU	0.377*	1		
IU	0.548**	0.369	1	
CL	0.641**	0.321	0.432*	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Fig.1. Conceptual framework
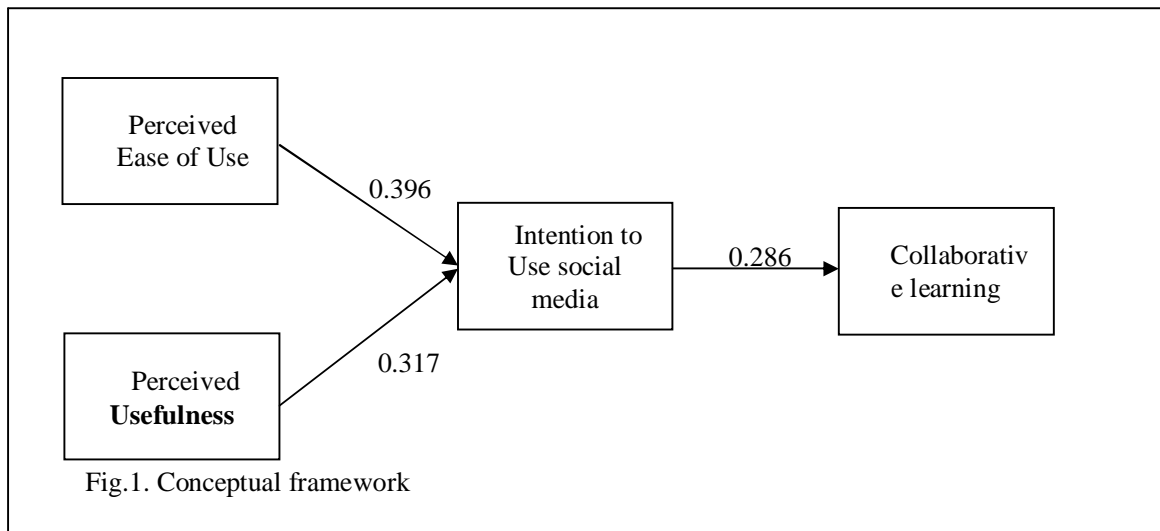
V. RESULT AND DISCUSSION

The Fig.1 indicate that perceived ease of use positively and significantly with Intention to use social media ($\beta2 = 0.396$, $p < 0.05$) While perceived ease of use may improve the students' collaborative learning through Intention to use social media. Perceived usefulness positively and significantly with Intention to use social media was ($\beta3 = 0.317$, $p < 0.05$). The perceived usefulness found to be lower than perceived ease of use. The standardized beta

The table 1 show the relationship between the student collaborative learning (CL) with perceived ease of use (PEU), perceived usefulness (PU), and perceived enjoyment (PE) to Intention to use social media (IU) were analyzed. Table 1 shows the Pearson correlation coefficient at 93 % confidence level. The best correlation was found between the perceived ease of use (PE) and collaborative learning (CL) with intention to use social media (IU) with correlation coefficient of 0.641.

The moderate correlation was found between the intention to use social media (IU) and collaborative learning (CL) with correlation coefficient of 0.432. Finally the lower correlation was found between the perceived usefulness (PU) and collaborative learning (CL) with correlation coefficient of 0.321. In terms of the collaborative learning with perceived ease of use acquired a typical percentage when it comes to collaborative learning among students at University since it provides coalition and sharing of knowledge in the class and library by using of social media any time.

The Intention to use social media with social media usage and acquired a average percentage when it comes to collaborative learning between students at University. Since it helps make the students feel confident enough to presenting and use the social media by collaborative between peers, teachers and more engagement within the class. Finally, In terms of the students' collaborative learning with perceived usefulness of utilizing social media and acquired a lowest percentage sometimes not allowed to communicate with teachers or shy students, but are good since it improve students' academic performance in education with collaborative learning.

VI. CONCLUSION AND FUTURE WORK

In this study suggested TAM predictors to improve collaborative learning by Intention to use social media among students they are as follows with perceived ease of use (PEU) and perceived usefulness (PU).In the results acquired, it may be concluded that social media facilitates the collaborative learning and academic experience with the majority of the participants but need to more interactive and collaborative with peers and teachers. Unless will affect the use of social media negatively on the collaborative learning among students. We propose for future work more studies and addition of factors have an effect with collaborative learning to improve students' academic performance and taking into account demographic factors, a larger sample to clarify more and Find more elements to measure the factors that affect a student's academic performance through collaborative learning in higher education institutions this is in our search in the future.

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APPENDIX:

Perceived usefulness (PU)

PU 1 I believe that using social media is a useful learning tool.

PU 2 I feel that using social media will help me to learn more about my class.

PU 3 I believe that using social media enhance my effectiveness.

PU 4 I believe that using social media will improve students' satisfaction with collaborative learning.

Perceived ease of use (PE)

PE 1 I feel that using of social media will be easy.

PE 2 I feel that using social media will be easy to incorporate in my classroom.

PE 3 I feel that using social media makes it easy to reach peers.

PE 4 I feel that using social media makes it easy to reach teachers.

Intention to use social media (IU)

IU1 I intend to keep using of social media in the future.

IU 2 I intend to recommend my friends to using of social media in the future.

IU 3 I would not mind to switch over to another social media if it has better functionalities

IU 4 I intend to increase the use of my social media in the future

IU 5 Using the social media is part of how I express my personality with my peers.

Using social media for collaborative learning (CL)

CL 1 I felt that using social media for collaborative learning in my group was effective.

CL 2 I was able to develop research skills through peer collaboration.

CL 3 I was able to develop new skills and knowledge from other members in my group.

CL 4 Collaborative learning experience in the social media environment is better than in a face-to-face learning environment.