Business Students' Continuance Intention toward Blackboard Usage: An Empirical Investigation of UTAUT Model

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Abstract

The use of Blackboard in the traditional education systems is gaining its popularity in the public Saudi universities. Therefore, this research aims to investigate this phenomenon within a special emphasis on Business students at King Saud University (KSU). This study is based on unified theory of acceptance and use of technology (UTAUT) to examine students' pursuit intention toward Blackboard usage, including the influential role of satisfaction in technology acceptance and use. The research data were gathered through an online survey of 170 Business students where the participation was voluntary. In addition, the structural equation modeling (SEM) was used to test the overall efficacy of UTAUT model and the mediating relationship among variables within the effect of satisfaction. The results indicate that satisfaction plays an essential role on the predication of continuance intention as an independent and mediating variable. However, performance expectancy, effort expectancy, and superior influence have no direct significant impact on continuance intention.

Keywords: Blackboard, continuance intention, effort expectancy, LMS, performance expectancy, satisfaction, Saudi Universities, superior influence, UTAUT

1. Introduction

In the twenty first century, information technology (IT) and information systems (IS) have tremendously impacted the strategic management of the learning ecology at the higher learning institutions (Amirkhanpour, Kaufmann, & Garcia-Gallego, 2014) through the utilization of the adequate types of learning platforms (Alfadly, 2013; Male & Pattinson, 2011). Therefore, the adoption of an appropriate learning management system (LMS) becomes an absolutely vital decision for each educational institution (Male & Pattinson, 2011). Accordingly, an LMS is simply defined as "web-based technology which assists in the planning, distribution, and evaluation of a specific learning process" (Asiri, Mahmud, Abu Bakar, & Ayub, 2012; Gray, 2013).

Indeed, the academic environment has characterized by a gigantic and accumulative effect of information and communications technologies (ICTs) enhancing the manageability of the learning procedures more sufficiently and effectively (Lwoga & Komba, 2015). An LMS obviously facilitates and supports the administrative and technical features that are customized according to educational process requirements (Male & Pattinson, 2011) for both educators and pupils. Thus, many universities have lavishly invested on their information systems (Mouakket & Bettayeb, 2015), in order to come up with a knowledge-based society. In addition, the LMS would probably promote the greener practices by reducing the amount of used papers (Rodi, Kohun, & DeLorenzo, 2013).

Albeit that LMS was initially designed to cope with long-distance learning adopters to create a medium of communication (Basioudis, De Lange, Suwardy, & Wells, 2012), it has prominently grown as a famous means for the face-to-face education lately (Rodi et al., 2013). In light of that, many studies conducted to illustrate the acceptance and use of LMS where the educational institutions depend highly on either online or virtual learning methods (Alfadly, 2013; Al-Malki, AbdulKarim, & Alallah, 2015; Asiri et al., 2012; Bellaaj, Zekri, & Albugami, 2015; Lwoga & Komba, 2015).

Recently, the adoption of LMS at the state universities has recently found favor with a face-to-face education in Saudi Arabia. As a result, the utilization of ICTs tools such as Blackboard (Alharbi & Drew, 2014) is no longer

restrictive to long-distance education purposes. Indeed, few conducted studies revealed students' satisfaction and continuance intention of using Blackboard in the context of traditional learning mode in public Saudi universities. Therefore, this study attempts to cover this void by examining the overall efficacy of unified theory of acceptance and use of technology (UTAUT) under that situation. In fact, the success of information systems such as Blackboard relies heavily on the extents to which end users accept and perceive its constructive advantages (Asiri et al., 2012).

2. Research Objectives

This study hence, attempts to figure out the major determinants of satisfaction and how they form students' continued intention to use Blackboard through two stages that explained in research objectives:

1)   To predict the impact of performance expectancy and effort expectancy on intention to continued usage of Blackboard as it mediated by satisfaction.

2)   To examine if the relationship among UTAUT direct determinants and satisfaction can directly predict the intention to continued usage of Blackboard.

3. Problem Statement

This study is mainly conducted in Business College (BC) at King Saud University (KSU) in order to investigate the effectiveness of UTAUT model in discovering students' pursuit usage of Blackboard within a face-to-face learning method. Prior studies disclosed that LMS usage in Saudi universities is still underdeveloped stages, in the other word; it has not been satisfactorily exploited (Alshammari, Ail, & Rosli, 2016). In this case, it seems that there is a gap between the advance technical tools provided by LMS and the efficient utilization of them (Adzharuddin & Ling, 2013) in case of Saudi universities. According to Pretorius (2010) this discrepancy can be attributed to the lack of the strategic directions from the university management especially if LMS still in the early adoption phase.

As an illustration, KSU lectures have recently experienced a migration from using the faculty websites to the use of Blackboard. This dramatic shift particularly in the early stages, involves a sort of resistance on shaping students' perception of the amount of the efforts required to be a competent user to engage in Blackboard usage (Taylor & Todd, 1995; Venkatesh, Morris, Davis, & Davis, 2003). As it described in their studies Calli et al. (2013) and Lin et al. (2016); the level of user satisfaction can affect the intentional behaviors of the user's decision either to sustain or cease the use.

4. Importance of the Study

This study contributes an extended model of UTAUT where the integration of satisfaction reinforces and motivates the intention of sustained usage of Blackboard. In addition, the context of traditional education in Saudi Arabia hopes to add a value where the researches here are scant.

The findings of this study can assist university management in considering the factors that affect Business students' satisfaction to continued using Blackboard for long-run. Besides, findings might be used to address similar situations especially after deploying new information systems.

5. Literature Review

This research focuses on understanding of the major factors influencing BC students' continuance intention to use Blackboard. For this reason, the research model of this study is developed based on UTAUT model. This theory is preferred over other acceptance technology models, in view of its sophisticated, comprehensive and exhaustive insights (Lwoga & Komba, 2015; Venkatesh et al., 2003). Thus, UTAUT evolves from the consolidation and integration of a variety constructs of these eight theories: the Theory of Reasoned Action, the Technology Acceptance Model, the Motivational Model, the Theory of Planned Behaviors, a combined TBP/TAM, the Model of PC Utilization, Innovation Diffusion Theory, and Social Cognitive Theory (Lwoga & Komba, 2015; Venkatesh et al., 2003; Williams, Rana, & Dwivedi, 2015).

Previous studies of lecturers and students intention to pursue LMS usage in Saudi Arabia emphasized developing TAM and extended TAM models in e-Learning context (Alharbi & Drew, 2014; Alshammari et al., 2016; Asiri et al., 2012). Interestingly, Bellaaj et al. (2015) have conducted a research basing on UTAUT in the context of the virtual learning to examine students' intention toward LMS usage in the University of Tabuk in Saudi Arabia. As a result, few studies exploited the importance of UTAUT model for addressing the technology usability and acceptance in traditional education context.

According to Venkatesh et al. (2003), the model of UTAUT consists of essential variables (performance expectancy, effort expectancy, social influence, and facilitating conditions) that have considerable impacts in

predicting user's intention and behaviors pertaining to technology acceptance and use. By the same token, there are secondary variables such as (gender, age, experience, and voluntariness) moderating the relationship between the major constructs and behavioral usage intention.

The original model of UTAUT has experienced some modifications to match the norms of the traditional education in Saudi context. First of all, the exclusion of facilitating conditions from the model because KSU normally belongs excellent IT infrastructures to improve and enhance its students' capacity for learning. Besides that, it provides a reliable Internet Wi-Fi along with the abundance of computer laps for both staff and students. Equally important, the majority of BC students possess their own personal laptops. Ultimately, facilitating conditions does not have a direct affect to behavioral intention (Bellaaj et al., 2015).

Furthermore, the second change is the incorporation of satisfaction to the model of UTAUT in which some studies indicates the importance of satisfaction in determining the continuance use of LMS (Mouakket & Bettayeb, 2015; Ramayah & Lee, 2012). Thirdly, a minor adjustment by decomposing (social influence) to (superior influence) which adequately reflects students' perception toward their lecturers of using Blackboard (Taylor & Todd, 1995). Simultaneously, it excludes the peer influence (i.e. other students' perception) which particularly has no effect in the continuance use intention in this state (Taylor & Todd, 1995).

5.1 Performance Expectancy

Performance expectancy defined as the extent to which students believe that using Blackboard will enhance the learning outcomes through achieving splendidly impressive and preferable accomplishments in their coursework. According to Venkatesh et al. (2003), this scale is representing a similar function of these constructs: "perceived usefulness in (TAM), extrinsic motivation in (MM), job-fit in (MPCU), relative advantage (IDT), and outcome expectations in (SCT)". Building on the past studies, there is a significant positive relationship between performance expectancy and continued intention to use LMS in both voluntary and mandatory situations (Bellaaj et al., 2015; Isalm, 2011; Lwoga & Komba, 2015). In addition, according to Cheok and Wong (2015) and Lwoga (2014), perceived usefulness in TAM has a direct influence on satisfaction. Thus the more the students think that the outcomes achieved from using Blackboard are the most favorable, the more likely they are satisfied and that ultimately leads to pursuit usage of it in the long-run (Calli et al., 2013).

5.2 Effort Expectancy

Effort expectancy defined as the extent to which students perceive a considerable level of either ease or difficulty associated with Blackboard usage. Obviously, the effort expectancy acknowledged parallel functions of these following constructs: "perceived ease of use (TAM), complexity (MPCU), and ease of use in (IDT)" (Venkatesh et al., 2003). Previous studies displayed that there is a significant positive relationship between effort expectancy and continued intention to use LMS particularly in the early stages of technology adoption (Bellaaj et al., 2015; Lwoga & Komba, 2015), however, Isalm (2011) reported an opposing result to these mentioned studies. As it for the work of Cheok & Wong (2015), perceived ease of use in TAM is a major predictor of students' satisfaction. Therefore, the more the students feel that the usage of Blackboard is facile for them, the more likely they will be satisfied and that eventually leads to sustained usage of it in the course of time (Calli et al., 2013).

5.3 Superior Influence

Superior influence defined as the powerful and directive impact of lectures whom urging and motivating students to use Blackboard. According to Taylor and Todd (1995), social influence can be divided into three referent groups: peer, superior, and subordinate influences. Hence, this study just pays an attention to the superior influence; it excluded the other types of referent groups. In fact, superior influence which is part of social influence is partially referred to these constructs: "subjective norms in (TRA), social factors in (MPCU), and image in (IDT)" (Venkatesh et al., 2003). Prior studies indicate that there is a positive relationship between social influence and continued intention to use LMS (Isalm, 2011; Lwoga & Komba, 2015), while another study proved a negative relationship between them (Bellaaj et al., 2015).

5.4 Satisfaction and Continued Usage Intention

In this study, continued usage intention defined as how long the students intend to use Blackboard in the current situation and the long-run. Meanwhile, satisfaction is defined as students' emotional considerations about the benefits of Blackboard that lead to pursuit usage in the future. According to Cheok and Wong (2015), satisfaction in the context of adopting e-Learning systems is still under-investigation level. Under this respect, there are few researches conducted to illustrate the end-users' satisfaction acceptance of Blackboard under face-to-face learning in Saudi Arabia. Reviews have showed that end-user' satisfaction has a significant direct impact on continued intention to use technology (Lwoga, 2014; Tella, 2011). Building on the work of Cheok and Wong

(2015) satisfaction can be used as a mediator and as Mouakket and Bettayeb (2015) mentioned: that satisfaction is used as a salient independent variable to predict continuous usage directly.

6. Research Hypotheses Development

Based on the previous literature review and contrary to the previous studies that used single hypothesis (Bellaaj et al., 2015; Lwoga & Komba, 2015; Isalm, 2011), this study postulated students' sustained intention toward Blackboard usage through the use of multiple hypotheses:

H1. There is a significant statistical impact at the level of significance (α≤0.05) for (Performance Expectancy and Effort Expectancy) on Intention to Continued usage as mediated by the Satisfaction within the Business students at KSU.

H2. There is a significant statistical impact at the level of significance (α≤0.05) for (Performance Expectancy, Effort Expectancy, Superior Influences and Satisfaction) on Intention to Continued usage within the Business students at KSU.

7. Research Methodology

7.1 Data Collection Method and Sampling Frame

To empirically evaluate the hypotheses and the efficacy of UTAUT model, the questionnaire was electronically distributed to BC students during the academic year of 2016-2017. The participation in this study was voluntary and 122 out of 170 students completed the survey. Thus, the rate of the valid response was almost about 72 per cent. The targeted population for this study was the students of BC at KSU. With this in mind, the sample was restricted to undergraduates who at least completed two levels after Preparatory Year Program (PYP). In addition, trainees and graduates were excluded because they do not have an intention to continued usage of LMS. However, the logical reason behind the exclusion of fresh students is that they do not have sufficient experiences in using LMS. Therefore, the survey has a filtering question to ensure the adequacy of each respondent characteristics corresponding to previous criteria. Ultimately, the data were collected according to the random simple sample method.

7.2 Instrument Design

The questionnaire scales were adopted from previously different tested surveys (refer to appendix). Three constructs (performance expectancy, effort expectancy, and continuous intention) were all adapted from the instrument of (Lwoga & Komba, 2015) along with necessary changes in wordings. In fact, Lwoga and Komba (2015) depended in previous studies which referred to these three constructs as follows: (1) The four items of performance expectancy were originally adapted from Tselios et al. (2011) and Venkatesh et al. (2003). (2) The five items of effort expectancy were originally adapted from (Tselios et al., 2011; Venkatesh et al., 2003; Wang & Shih, 2009). (3) While the six items of continued intention were originally adapted from (Lin & Wang, 2012; Masrom, 2007; Venkatesh et al., 2003). In addition, the four items measured superior influence were taken from the work of (Taylor & Todd, 1995). Eventually, three items measured satisfaction were taken from (Lee, 2010). In addition, the questionnaire was translated into Arabic language to ensure students better comprehension. Furthermore, to ensure that Arabic survey having accurate scales equivalent to English ones, a group of professional translation experts reviewed it.

The questionnaire consisted of 29 items that segmented into two basic parts. The first part consisted of 24 items pertaining to the previous five constructs and they were all assessed according to five point Likert Scales ratings from (1) strongly disagree to (5) strongly agree, with a mid-point (3) undecided considering the state of uncertainty. The second part consisted of 5 scales about demographic information (gender, age, Business college departments, Blackboard usage frequency, and Blackboard experience usage) as it shown in table (1).

8. Data Analysis and Results

8.1 Descriptive Data

According to table (1), the overall valid respondents total was ($n = 122$), in which female comprised 60.7% ($n = 74$) and male comprised 39.3% ($n = 48$). The average age of respondents ranged from 21 to 22 indicating 53.3% of students' total ($n = 65$). Apparently, it represented that Business Administration ($n = 41$) and Economy ($n = 30$) achieved the highest response among BC students where the rate was 33.6% and 24.6% respectively. The average rate of Blackboard frequency usage among respondents ranged from few times a week to few times a month thus, the general rate was (about 27%) which is not heavily usage. Finally, almost 37% of students' experiences with Blackboard ranged from 1 to 2 years.

Table 1. Demographic analysis

		Frequency	Percent
Gender	Male	48	39.3
	Female	74	60.7
Age	18- 20 years	45	36.9
	21-22 years	65	53.3
	23 years and above	12	9.8
Business College Departments	Business Administration	41	33.6
	Marketing	29	23.8
	Finance	9	7.4
	Accounting	13	10.7
	Economy	30	24.6
Blackboard Usage frequency	Once in 3 month	15	12.3
	Once in 2 month	6	4.9
	Once in a month	19	15.6
	A few times a month	32	26.6
	A few times a week	33	27.0
	About once a da	9	7.4
	Several times a day	8	6.6
Blackboard Experience Usage	Six months	11	9.0
	Six months - one year	15	12.3
	One-two years	45	36.9
	Two- three years	37	30.3
	Three years and More	14	11.5
Total		122	100%

8.2 Data Analysis for the Measurement Model

In order to ensure the reliability of the instrument, internal consistency reliability through Cronbach's alpha test is used. As it for the work of Hakstian and Whalen (1976), Cronbach's alpha with 0.7 considered to be an acceptable level of internal reliability. Therefore, the higher the values of Cronbach's alpha indicate the more reliable the instrument. As it can be noticed, the values in table (2) are ranged from 0.72 to 0.85 and the overall reliability value was 0.81 which considered an acceptable reliability level.

Table 2. Cronbach's alpha value

Constructs	Cronbach's alpha value
Performance expectancy	0.75
Effort expectancy	0.79
Superior influences	0.85
Satisfaction	0.72
Continued usage intention	0.72
Total	0.81

8.3 Hypothesis Testing

To examine the research hypothesis structural equation modeling (SEM) was used. SEM is a collection of statistical models that seeks to explain relationships among multiple variables was used in this study as a main analysis method. It enables researchers to examine interrelationships among multiple dependent and independent variables simultaneously (Hair, Anderson, & Tatham, 2006). The measurement was performed using the SEM approach based on AMOS v.23software. Thus, the figure (1) shows that the research proposed model with path analysis.

As shown in Table (3), the constructs' CR is above 0.7 which demonstrated a good composite reliability. As well as, within table (3), it can be seen that the standardized path coefficient for the impact of all research variables. The results present that there is a significant statistical impact for (performance expectancy and effort expectancy)

on continued usage intention through the mediating variable (satisfaction). In addition, the results prove that there is no direct statistical significant impact for (performance expectancy, effort expectancy and superior influences) on continued usage intention. However, there is a direct statistical significant impact for satisfaction on continued usage intention.
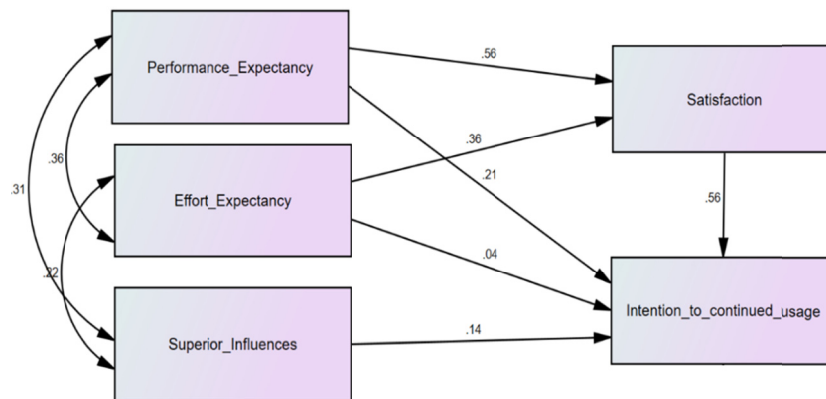

Figure 1. Research Model.

Moreover, the independents variables together explained ($R2 = 0.62$) from the dependent variable variance. On the other hand, satisfaction explained ($R2 = 0.59$) from the dependent variable. Accordingly, table (4) presents the correlation between independent variables (performance expectancy, effort expectancy and superior influences). The correlation between these variables is ranging from (0.216) to (0.363) which indicates that there is no strong relation between them.

Table 3. Standard regression weights

			Estimate	S.E.	C.R.	P
Satisfaction	<---	Performance expectancy	.563	.076	9.011	***
Satisfaction	<---	Effort expectancy	.357	.084	5.723	***
Continued usage intention	<---	Performance expectancy	.208	.092	2.655	.008
Continued usage intention	<---	Effort expectancy	.041	.087	.615	.539
Continued usage intention	<---	Superior influences	.143	.063	2.440	.015
Continued usage intention	<---	Satisfaction	.556	.084	6.433	***

*** P value less than 0.05.

Table 4. Correlations between independent variable

			Estimate
Performance expectancy	<-->	Effort expectancy	.363
Effort expectancy	<-->	Superior influences	.216
Performance expectancy	<-->	Superior influences	.314

9. Discussion and Study Findings

This study investigated students' satisfaction and continuance intention to use Blackboard under the traditional education conditions at KSU. According to Adzharuddin and Ling (2013) and Alshammari et al. (2016), in order to enhance students using Blackboard, it is crucial to comprehend the major factors affecting their perception about technology acceptance. As shown in table (5), hypothesis one was totally supported while the hypothesis two was partially supported.

Obviously, hypothesis one indicated the powerful impact of satisfaction as a mediator on the relation between the independent variables (performance expectancy and effort expectancy) and the dependent variable (continuous usage intention). Prior studies showed that perceived usefulness (performance expectancy) had a strong

influence in satisfaction (Calli et al., 2013; Lwoga, 2014; Mouakket & Bettayeb, 2015; Weng, Tsai, & Weng, 2015) which undoubtedly advocate the findings of this study. On contrary, Calli et al. (2013) research displayed that perceived ease of use (effort expectancy) had no significant impact on satisfaction where they identified the factors contributing to the students' satisfaction. In a consistent manner with this study, Weng et al. (2015): found that perceived ease of use (effort expectancy) in e-learning programs in training had significant impact on the level of employees' satisfaction from six large corporations in Taiwan. Thus, the level of difficulty and ease would be crucial respect for LMS users to be competent in knowing how e-learning device can be operated (Male & Pattinson, 2011).

Unexpectedly, the results of hypothesis two revealed that the major determinants of UTAUT showed no direct impact on continued intention of usage. Thus, the second hypothesis was partially supported. Therefore, the findings of this study represented some differences and similarities to prior studies. Performance expectancy, for instance, was found to be a major determinant of continuance use in conducted studies in Tanzania (Lwoga & Komba, 2015) and in Saudi Arabia (Bellaaj et al., 2015). Basically, that contradicted with the obtained results of this study because students may believe that the usage of technology in the context of face-to-face education have not influenced their performance in coursework.

Effort expectancy, in like manner, revealed a positive relationship to continuous usage intention in both studies of (Bellaaj et al., 2015; Lwoga & Komba, 2015). In fact, the result of this study was inconsistent with the prior studies due to cumulative experiences of user-friendliness with technology over time. In reality, this can be interpreted correspondingly to finding of Venkatesh et al. (2003), that considered the impact of effort expectancy may diminished on course of time and become insignificant as the situation of this study. Similarly, Islam (2011) found that perceived ease of use (effort expectancy) had no significant impact on sustained usage which really was supported to the finding of this study.

Superior influence which is part of social influence revealed a controversial issue. In fact, some studies advocated our finding (Bellaaj et al., 2015) that social influence had no significant impact on intention to continuous usage. In addition, subjective norms (social influence) in the work of both (Lee, 2010; Taylor & Todd, 1995) found to have significant impact of subjective norms on continuance intention. Nevertheless, Lwoga and Komba (2015) work: reported that the professors' perception about the usage of LMS strongly influenced students intentional behaviors.

Last but not the least, the impact of satisfaction as an independent variable in continuance intention was totally fitted well in the model of UTAUT. Prior studies that incorporated satisfaction in extended TAM model (Alharbi & Drew, 2014; Weng et al., 2015) found that it had a strong predictor of intention to continuous usage. Therefore, it can be inferred the crucial and influential role of satisfaction as both mediator and independent variable to predict continuance intention.

Table 5. Hypothesis results

Hypothesis	Suppoting
H1 There is a significant statistical impact at the level of significance (α≤0.05) for (Performance Expectancy and Effort Expectancy) on Intention to Continued usage as mediated by the Satisfaction within the Business students at KSU.	Supported
H2 There is a significant statistical impact at the level of significance (α≤0.05) for (Performance Expectancy, Effort Expectancy, Superior Influences and Satisfaction) on Intention to Continued usage within the Business students at KSU	Partially supported

Eventually, the UTAUT model accounted about 62 % of the variance explained in continuance intention. This result is relatively higher comparable to past studies. For instance, the study of Lwoga and Komba (2015) that conducted at Mzumbe University showed that the independent variables explained just 41% of intention to continued usage. In addition, Bellaaj et al. (2015) reported just 52% of explained variance, however, Venkatesh et al. (2003) overall UTAUT scored 69% of explained variance which is the most practical and reliable one.

10. Theoretical and Practical Implications and Limitations

The findings of this study can contribute theoretical perspectives through the extended model of UTAUT in two ways: first, the successful effect of incorporation of satisfaction in the overall UTAUT model. No doubt that satisfaction fits well in mediating the relationship between independent variables (performance expectancy and effort expectancy) and the dependent variable (intention to continued usage). In like manner, satisfaction also, as

an independent variable, was found to be the most influential predictor of continuance intention to use and acceptance of technology even more than the other direct determinants of the original model theory. Under those circumstances, the overall efficacy of UTAUT achieved a very reliable validation in the context of face-to-face education.

Secondly, it is known that UTAUT core constructs depend on utilizing high loading items from each measurement, thus decomposing of some constructs would assist in avoiding such risk (Islam, 2011). As it done in the work of Taylor and Todd (1995), the decomposition of constructs helps in better understanding different situations. Therefore, it is crucial to take this into considerations when conducting any study about intentional behaviors. In this study, use of superior influence differed greatly from peer influence.

As it for practical implications, the findings of this study can help university management in identifying of what shaped students' continuance usage. Thus, satisfaction was found to be the most important factor that should be given loading attention. In addition, university management should consider other factors that pertinent to quality, since that performance expectancy, effort expectancy, and superior influence were not significant in determination of continued usage. Furthermore, findings might be used to address similar situations particularly after deploying new information systems.

Moreover, this study has several limitations due to constraints of time and financial resources. First, the sample was just representing BC students where it excluded the participation of other KSU colleges, thus, it would be a quite hard to generalize the results of this study within the other colleges. Second, superior influence was not mediated by satisfaction to examine the overall impact of satisfaction on UTAUT model. Third, this study also did not use moderator variables (gender, age, experience, and voluntariness) to make some differentiation basing on them. Fourth, this study did not take into account the facilitating conditions which really have an impact in the UTAUT model as whole.

11. Conclusion and Future Studies

This study attempts to explain the overall UTAUT model validation in investigating students' intention to continued usage as it mediated by satisfaction. The results indicated the influential role of satisfaction as both an independent and mediating variable. In addition, the direct determinants of UTAUT found to be not effective in predicting intention to continuous usage of Blackboard. The study was conducted at KSU within BC students in the context of face-to-face education. The findings revealed that prior conducted studies had partially different results in virtual learning method (Bellaaj et al., 2015). Therefore, the context of the traditional education added a value to this study where the findings are completely different.

Future studies suggested several topics should be taken into account: first, conducting an extended model of UTAUT to investigate the impact of (information quality, system quality, services quality, and instructor quality). Second, conducting comparative studies to contrast LMS usage within different contexts like face-to-face classes and virtual classes. Third, Mediating all core constructs with satisfaction to figure out whether it fits in the model as whole. Fourth, decomposing each construct to several sub-constructs to examine the precise effect of each construct.

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Appendix

Construct	Symbol	Questionnaire Items
Performance expectancy	PE1	Using Blackboard would enhance my effectiveness in learning
	PE2	Using Blackboard would increase my productivity in my coursework
	PE3	The Blackboard provides some good functions to help me complete my learning tasks
	PE4	The use of Blackboard will enable me/enables me to accomplish academic tasks more quickly
Effort expectancy	EE1	My interaction with the Blackboard would be clear and understandable
	EE2	It would be easy for me to become skillful at using the Blackboard
	EE3	I would find the Blackboard easy to use
	EE4	Learning to operate the Blackboard easy for me
	EE5	Overall, I find Blackboard easy to use
Superior influence	SI1	My professors would think that I should use Blackboard
	SI2	Generally speaking, I want to do what my professors think I should do
	SI3	I have to use Blackboard because my professors require it.
	SI4	Generally speaking, I want to do what my professors think I should do
Satisfaction	S1	I am satisfied with the performance of Blackboard
	S2	I am pleased with the experience of using Blackboard
	S3	My decision to use Blackboard was a wise one
Continued usage intention	CUI1	I intend to continue using the Blackboard for knowledge gathering
	CUI2	I intend to continue using the Blackboard for knowledge construction
	CUI3	I intend to continue using the Blackboard for knowledge sharing
	CUI4	I intend to continue using Blackboard for my coursework in this semester
	CUI5	I will frequently use the Blackboard in the next semesters
	CUI6	Overall, I intend to continue using the Blackboard