A Motivational Model for Facebook Acceptance by University Students

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ABSTRACT

As social networking websites become more and more widespread there is an increasing interest to analyze and explain their usage. Facebook is a web-based service that is very popular among university students. In this paper a motivational model is presented that explains Facebook acceptance by university students with two key factors: perceived usefulness and perceived enjoyment. The results show that perceived enjoyment is a stronger determinant than perceived usefulness.

Author Keywords

Facebook, motivational model, TAM, structural equation modeling.

ACM Classification Keywords

D.2.2: Design tools and techniques. H5.2 User interfaces.

INTRODUCTION

Social networking websites in general and Facebook in special are interactive environments that are supporting communication, collaboration, exchange of information / resources, and self-advertising. Facebook gained a lot of popularity in the last decade and is widely used by university students [10, 23].

Several studies showed that social networking websites are both useful [2, 16, 17, 20] and enjoyable [18, 19]. Since for many users Facebook became part of their everyday life there is an increasing interest to explain its acceptance.

Motivation plays an important role in the acceptance of information technology by influencing both the actual use and the intention to continue using the system in the future [7]. The motivational model explains the technology acceptance with two key drivers: extrinsic motivation and intrinsic motivation. While the former is instrumental, being goal oriented, the latter is hedonic, being related to pleasure and inherent satisfaction created by a specific activity [8, 24].

Although many authors mention that social networking websites are enjoyable interactive environments, relatively few approaches exist to measure the perceived enjoyment by university students interacting on Facebook.

In this paper a motivational model for the acceptance of Facebook by university students is presented that explains the intention to use it in the future with two key factors: perceived usefulness (extrinsic motivation) and perceived enjoyment (intrinsic motivation).

The rest of this paper is organized as follows. In the next section we present the theoretical background and model conceptualization. Then the empirical validation of the model and the estimation results are discussed. The paper ends with conclusion and intention of future work.

THORETICAL BACKGROUND AND HYPOTHESES

Motivation and technology acceptance

The motivational model takes its roots from self-determination theory that highlighted two main forms of motivation: extrinsic and intrinsic. Deci et al. [9] show that intrinsically motivated behaviors are the prototype of self-determination: people engage in activities for their own pleasure and satisfaction.

A well-known model aiming to explain and predict technology acceptance on a large variety of technologies is TAM (Technology Acceptance Model), developed by Davis [6], and Davis et al. [7]. TAM focused on two main drivers, perceived ease of use and perceived usefulness that determine the intention to use a technology. In further studies the motivational model was adapted to technology acceptance by adding the perceived enjoyment as an intrinsic motivation to use a technology [8].

In the context of technology acceptance, the extrinsic motivation was conceptualized as perceived usefulness, defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" [6]. Intrinsic motivation was conceptualized as perceived enjoyment, defined as "the extent to which the activity of using a specific system is perceived to be enjoyable in its own rights, aside from any performance consequences resulting from system use" [8].

Perceived usefulness relates to the extent to which the users perceive that external characteristics of a system will aid them in performing a task or a set of tasks. Perceived usefulness is considered to have a positive direct effect on the behavioral intention and on the attitude towards using a system. Potential adopters develop a positive attitude and are willing to further use if they observe that the system delivers positive outcomes with regard to their job performance [7].

Perceived enjoyment is also able to significantly influence the intention to use since users who experience pleasure or enjoyment are more likely to form a positive attitude and intention to use it than others [8, 14, 18].

Usage of Facebook in educational contexts

Brown & Adler [4] pointed out that Internet is able to support and expand various aspects of social learning where knowledge is created socially through discussion with others. Social learning means meeting, active participation, critical thinking, information and content sharing [4, 23].

Understanding the usage of social learning technologies is needed for a modern school that seeks to adapt the teaching strategies to student's lifestyle [2]. Mazman & Usluel [20] investigated Facebook adoption for educational use. Their findings show that the perceived usefulness has a significant influence on the adoption of Facebook.

The use of Facebook in university contexts creates social capital which in turn can bring many benefits for users [10, 12, 17, 21]. In a previous work, a multidimensional model was proposed that is capturing more accurately the bridging social capital embedded in the Facebook network of a university student [22].

Lampe et al. [17] investigated the usefulness of Facebook as information source. Their study shows how FB users convert the social capital in information (another form of capital).

As Deci et al. [9] pointed out, motivation and educational outcomes are closely related. They argued that promoting self-determination in the forms of intrinsic motivation and autonomous internalization is beneficial for both the individual and the society [9].

Lin & Lu [19] employed a motivational model to analyze why people use social networking websites. They found that perceived enjoyment is the main driver of the continuation intention. Lee et al. [18] explored the perceived community value of Facebook and found that the experiential value was the most important outcome of information sharing in a social network.

Research model and hypotheses

The research model is presented in Figure 1. We hypothesized that the intention to continue using Facebook (INT) is influenced by two factors: perceived usefulness (PU) and perceived enjoyment (PE). Perceived usefulness is influenced by the perceived enjoyment [7].
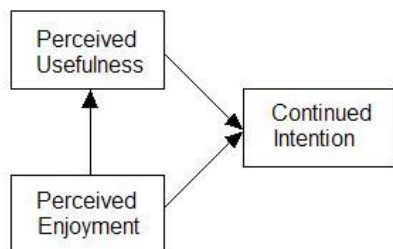

Figure 1. The research model

The following hypotheses are proposed in this study:

H1. Perceived enjoyment has a positive effect on the perceived usefulness (PE → PU).

H2. Perceived usefulness has a positive effect on the intention to continue using Facebook (PU →CI).

H3 Perceived enjoyment has a positive effect on the intention to continue using Facebook (PE →CI).

METHODS

Data collection and sample

In order to empirically test the model a questionnaire was developed in the context of a larger study focusing on Facebook use in an educational context. The variables of interest for this paper are presented in Table 1.

A total of 152 students (110 female, 42 male) from two universities in Lithuania were asked to answer questions related to demographics (age, gender), enrollment (university, faculty, year of study), FB usage (size of their FB network, frequency of use, minutes per day), and to evaluate items on a 7 points Likert-type scale.

Most participants are undergraduate (144) aged from 18 to 45 (M=23.47, SD=5.62), the majority (79%) being between 18 and 25 years old. The size of their social network varies from 10 to 1000 FB friends (M=280.38, SD=190.28).

Table 1. Variables

Item	Description	M	SD
PU1	Using Facebook I can better present myself	3,53	1,71
PU2	Using Facebook I can better present my university work to other people	4,13	1,67
PU3	Using Facebook I am better informed about events of interest in my university	5,06	1,62
PU4	Using Facebook I get useful information from university people	4,99	1,41
PU5	Using Facebook I have better access to university related materials	4,74	1,59
PU6	Using Facebook I stay in touch with my colleagues from home	4,96	1,76
PE1	I have fun using Facebook	4,45	1,66
PE2	Using Facebook is enjoyable	4,63	1,53
PE3	Using Facebook is entertaining	4,45	1,64
PE4	Using Facebook is pleasant	4,39	1,50
CI1	I intend to continue using Facebook in the future	5,46	1,36
CI2	It is likely that I will continue using Facebook in the future.	5,55	1,28
CI3	I will regularly use Facebook in the future.	4,95	1,54

The constructs were operationalized by using and / or adapting existing scales in the literature [5, 8].

Analytical procedures

Data analysis was carried out using the SPSS 16.0 for Windows. Structural Equation Modelling (SEM) with AMOS 7.0 software was applied to test the model. Testing was carried out in accordance with a two-step approach [1, 3] including measurement and structural models.

ANALYSIS AND RESULTS

Descriptive statistics

All mean scores except the mean of PU1 are greater than 4.0 (neutral), showing a positive perception regarding the motivation and the intention to continue using Facebook in the future.

The standard deviations ranged from 1.28 to 1.76, indicating a fairly narrow spread of scores around the

mean. Both univariate and multivariate outliers were searched in the data set and since none of the cases appeared to be extreme, all the data were kept for analysis. Data normality was investigated in terms of skewness and kurtosis. The values were all within the recommended level [13], supporting the moderate departure from normality for all variables.

Measurement model

Based on an analysis of relevant research [13], the following goodness-of-fit measures were used in this study: normed chi-square (χ^2/df), Tucker-Lewis index (TLI), comparative fit index (CFI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA). In summary, to support model fit it is desirable to exhibit: the normed chi-square should be less than 3, TLI and CFI should exceed 0.95, SRMSR should be less than 0.05, and RMSEA should be less than 0.05 and its 90% confidence interval to be not excessively wide.

The results for initial measurement model show a range of fit results that are indicative for a poor model fit. We examined the standardized residuals and the modification indexes [3]. Two items, PU1 and PU6, were eliminated. As it could be observed, the rest of four items are related to the university life and the students' university work.

The modified measurement model fits acceptable with the data. Although the χ^2 test is significant (χ^2=89.58, df=41, p=0.000), the other fit indices indicated a good fit with the data: χ^2/df=2.185, TLI=0.850, CFI=0.963, SRMR=0.057, RMSEA=0.089 and its 90% confidence interval is fairly narrow (i.e., 0.064-0.114).

We examined the convergent and discriminant validity of the model using the procedure outlined by Fornell and Larcker [11].

All standardized item loadings were statistically significant (t-values > 1.96). The item reliability (R^2) values are above the suggested standard of 0.50 [13], with exception of PU2 (0.40). Cronbach's alpha values are acceptable for all three constructs (see Table 2). The composite reliability (CR) values ranged from 0.862 to 0.939. These values are above the minimum level of 0.70 [13], indicating an adequate reliability. The values of average variance extracted (AVE) are all above the minimum level of 0.50 [13], ranging from 0.613 to 0.804, confirming convergent validity.

The discriminant validity of constructs was examined through the squared correlations test [11]. The results in Table 2 show that the square root of the AVE for each construct is greater than the correlations involving the construct thus provides evidence of adequate discriminant validity.

Table 2. Results of discriminant validity

	Alpha	CR	AVE	PU	PE	CI
PU	0.855	0.862	0.613	**0.783**		
PE	0.935	0.939	0.795	0.330	**0.891**	
CI	0.917	0.924	0.804	0.363	0.585	**0.897**

Notes: The bold diagonal numbers are the square root of AVE

Structural model

A structural equation modeling (SEM) was carried on to test the fit between the research model and the data. The structural model presented in Figure 2 shows the standardized path coefficients, the item loadings, and the explained variance (R^2) for the dependent variables.

The analytical results showed that PE has a significant positive influence on PU (β=0.33, p<0.001) so H1 is supported. Both PU and PE have a significant effect on CI (β=0.19, p<0.001, respectively β=0.52, p=0.018), providing support for hypotheses H2 and H3. The path coefficients show that the perceived enjoyment has the most important contribution to the continued use.
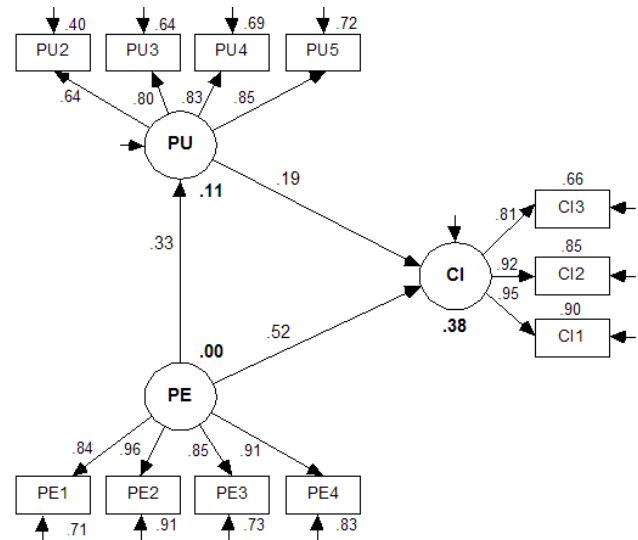

Figure 2. The structural model estimation results

The model explained 38% of the variance in the continued intention to use Facebook (R^2=0.38).

DISCUSSION

This study found that for university students in Lithuania the perceived enjoyment is a stronger determinant of Facebook adoption than the perceived usefulness. The findings confirm the results of other studies that found that Facebook is perceived as an enjoyable environment [18, 19].

As many authors pointed out, websites have a dual nature being both utilitarian and hedonic. For systems perceived as mainly hedonic, the perceived enjoyment is a stronger predictor of the behavioral intention to use than perceived usefulness [14]. The findings of this study confirm the nature of Facebook as mainly hedonic.

At the same time it is obvious that Facebook is very popular among university students. Having in mind that university students are strong users of social networking websites is important to find some effective ways of using FB for academic purposes. For, example, the research carried out in Turkey showed that FB can be effectively applied in distance learning [21].

However, the main problematic and unclear issue remains how Facebook can enhance student learning outcomes [15]. For this purpose it is necessary to reconsider the existing approaches of work with students. In this regard,

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the motivation of students for using Facebook should be exploited for stimulating the acquisition of new knowledge, improvements of individual learning abilities, and active participation.

CONCLUSION AND FUTURE WORK

The main contribution of this study is a theoretically grounded and empirically validated motivational model, measuring the contribution of extrinsic and intrinsic motivation to the continued use of Facebook by university students. Model estimation results are revealing that the perceived enjoyment is the main driver of Facebook usage for Lithuanian university students.

There are inherent limitations of this work since the study is exploratory. The sample used in this study is small, at limit for SEM requirements. The students came from only two universities and few faculties.

Future work will focus on refining and extending the scale, in order to analyze external variables that are influencing the Facebook adoption. Then the evaluation instrument will be administrated in at least five universities from two countries in order to analyze the influence of cultural factors.

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