Determinants of Greek students' intention to use Facebook for academic purposes

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Abstract

Even though Facebook is now one of the most popular social media sites for college students, its affordances are rarely utilized for educational purposes. Limited studies have been conducted about the usage of Facebook and most of them mainly explore the acceptance of the academic usage of Facebook by students, using the technology acceptance model (TAM), without using multivariate analysis. Moreover, previous studies have scarcely investigated factors such as trustworthiness and perceived enjoyment. Data were collected from 128 Greek students from the department of Early Childhood Education at the University of Athens. The study applied the TAM to examine the factors that affect students' behavioral intention to use Facebook for academic purposes. Particularly, it investigated the influence of four external variables on the original factors of the TAM for a better understanding of students' intentions to utilize Facebook in their studies: a) Perceived self-efficacy, b) Social influence, c) Trustworthiness, and d) Perceived Enjoyment of Facebook. All constructs showed a high level of internal consistency reliability and satisfactory discriminant validity. Partial Least Squares and SEM (PLS-SEM) application indicated all these external factors affect the Greek students' intention to use Facebook for academic purposes. The analysis supported that this TAM version is an excellent adaptation to the factors which determine the students' behavioral intention to use Facebook and explained 60% of the total variance of the specific intention. The constructs of Perceived Use, Attitudes, Trustworthiness and Perceived Enjoyment have a direct effect on Behavioral Intention, while Perceived Ease of Use, Perceived Self-Efficacy, and Social Influence, affect Behavioral Intention indirectly. Implications and limitations are discussed.

Keywords: Higher education, Technology acceptance model, Trustworthiness, Perceived Enjoyment.

1. Introduction

Social networks are utilized more and more in our daily lives and consider very popular mainly among young people (Athanassopoulos et al., 2021). Particularly, students consider Facebook as a very important medium that helps them adapt to their academic life in a faster and more enjoyable way (Athanassopoulos et al., 2021; Cheung et al., 2011). Students use Facebook in their studies for academic purposes such as, to exchange information on various topics, related to the university itself, lectures, studies, academic activities, and their daily life (Athanassopoulos et al., 2021; Manesis & Papavenetiou, 2019).

Regarding the students' intention to use Facebook for academic purposes limited studies have been conducted worldwide using the technology acceptance model (TAM) (Davis et al., 1989). Some of the previous studies include specific external factors such as social influence and perceived self-efficacy (Mazman & Usluel 2010; Sanchez et al., 2014; Wadie & Lanouar, 2012). Other studies in a low degree include factors such as trustworthiness and perceived enjoyment (Rauniar et al., 2014; Tiruwa et al., 2018). In Greece, few studies have been conducted about the usage of Facebook mainly exploring the acceptance of the academic usage of Facebook by students, using the technology acceptance model (TAM) (e.g. Manesis & Papavenetiou, 2019) without to use of multivariate analysis. Moreover, the previous studies have scarcely investigated factors such as trustworthiness and perceived enjoyment (Rauniar et al., 2014; Sharma et al., 2016; Tiruwa, et al., 2018). Therefore, this paper comes to fill this gap as well as provide insights into the factors that explain the Greek students' intention to use Facebook for academic purposes.

2. Conceptual model of students' behavioral intention to use Facebook for academic purposes

Figure 1 is shown the conceptual model that was investigated in this study, which is a visual representation of constructs of interest and how they connect. Analytically, all these constructs and the hypotheses (direct arrows) are discussed following. The technology acceptance model (TAM) was designed by Davis and his colleagues (Davis et al., 1989) to explain and predict the likelihood of new and innovative technologies being adopted by individuals. TAM is adopted in this study to reveal students' perceptions of Facebook usage for educational purposes. It includes perceived ease of use (PEOU), and perceived usefulness (PU) as the major factors that influence users' behavioral intention (BI) to use innovative technology. PEOU has a direct impact on PU regarding technology (Lavidas et al., 2019; Parissi et al., 2019). Both PEOU and PU influence the users' attitude (ATT) toward using a technology (Lavidas et al., 2019). PU and ATT have a direct impact on BI (Lavidas et al., 2019;). Perceived self-efficacy (PSE) refers to one's belief in one's ability to succeed in specific situations under specific circumstances (Bandura, 2010; Lavidas et al., 2019). The term PSE in this study concerns users' beliefs in their abilities regarding the academic use of Facebook. PSE could affect students' technology adoption of Facebook for educational purposes and learning management systems (Lavidas et al., 2022). Hence, PSE has a direct impact on PU and PEOU, and therefore indirectly affects the BI to use Facebook in education. Social influence (SI) regards the degree to which a student considers that the people who are important to him/her, such as friends and peers, think that he/she should use a new system (Venkatesh et al., 2003). The term SI in this study is defined as the extent to which the students' perceived expectations from relevant others to use Facebook in their studies. Students are influenced by the opinion of their peers regarding their usage behavior. Therefore, SI has a direct impact on PU and ATT (Lavidas et al., 2019). Trustworthiness (TW) is defined as the degree to which an individual believes that the exchange of information and data which finds on Facebook, regarding his/her studies, is relevant, objective, and reliable (Rauniar et al., 2013). TW should be the main factor in TAM for the educational use of Facebook since students must feel secure with their profile data, shared documents, and icons, to use Facebook for their studies-related activities (Rauniar et al., 2013). Hence, TW has a direct impact on BI. Perceived enjoyment (PE) refers to the feelings of delight and

pleasure a user has when using social network sites (Sledgianowski & Kulviwat, 2009). In social media, PE is considered a determinant of BI to use (Dumpit & Fernandez, 2017; Sledgianowski & Kulviwat, 2009). Moreover, social networking site users need to consider the structure of a specific site and an enjoyable experience to create and share educational material (Dumpit & Fernandez, 2017). Therefore, PE has a direct impact on BI.
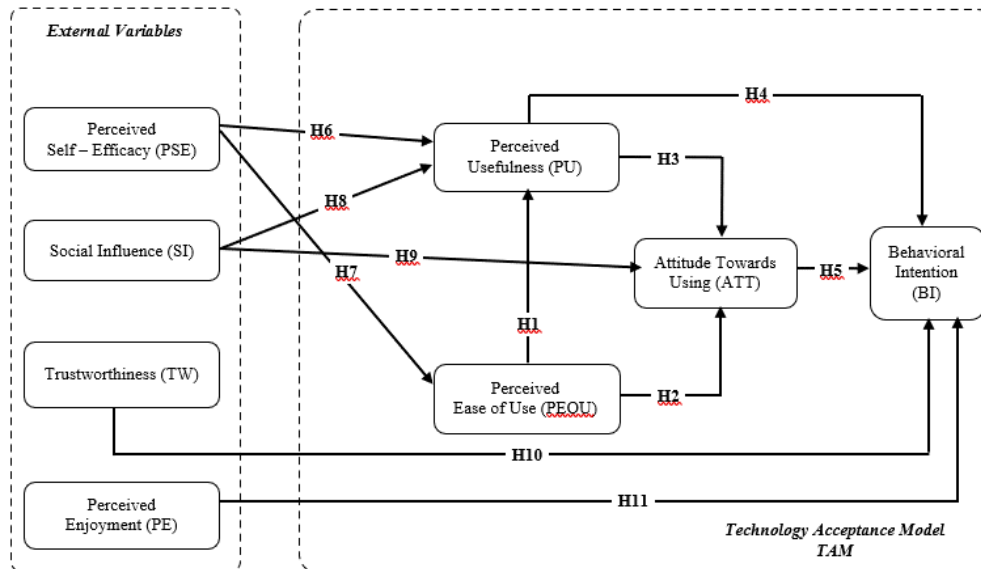

Figure 1. The conceptual model

Note: H1 to H11 are hypotheses regarding the direct effect among the constructs

3. Research objectives

This research aims to examine the factors that affect Greek students' behavioral intention to use Facebook for educational purposes. Particularly, we investigate the influence of four external variables on the original factors of the TAM for a more detailed comprehension of students' behavioral intention to use Facebook for academic purposes. The four external factors are a)Perceived self-efficacy, b)Social influence, c)Trustworthiness, and d)Perceived Enjoyment of Facebook.

4. Methodology

4.1 Research procedure and sample

In this research, we follow a cross-sectional quantitative research method. The research was carried out in November 2019 with a convenient sample of 128 (127 females and 1 male) preschool University students from the National and Kapodistrian University of Athens. The distribution of participants' Age is, up to 19 (39.8%), 20-21 (46.1%), 22-23 (5.5%), 24-25 (2.3%), at least 26 (6.3%). The Google form was used to collect the students' responses, following the guidelines of Lavidas and Petropoulou et al. (2022), to increase the response rate Lavidas et al. (2022) found that participants were more likely to complete a survey if the survey should not take more than 10 min to complete. The participation in the study lasted approximately 8 minutes.

4.2 Research instrument

The questionnaire consisted of two parts; in the first part, we gathered demographical information about the students, such as gender and age. The second part of the questionnaire consisted of 25 statements (Table 1) adapted from previous work. Specifically, we utilized items for BI and ATT from Lavidas et al., (2022), items for

PU, PEOU, and SI from Sánchez et al., (2014), Items for PSE from Manesis & Papavenetiou, (2019), items for TW from Rauniar et al., (2014), and items for PE from Sharma et al., (2016).

4.3 Data analysis strategy

Partial Least Squares – SEM (PLS-SEM) is used in the R environment and the "plspm" package (Sanchez, 2013). The measurement model was examined first, and the structural model was tested afterward. Regarding the structural model, the direct path coefficients among constructs were tested.

5. Results

Table 1 shows the reliability and convergent validity indexes of the measurement model. For all constructs, Cronbach's Alpha, as well as Composite Reliability, exceed 0.7, so these constructs present a high level of internal consistency reliability (Raykov, 1997). Additionally, all the statements were loaded with significant values greater than 0.7 without cross-loadings as well as the variance that is explained by each construct (AVE) over 0.5 indicates a satisfactory convergent validity (Sanchez, 2013). Moreover, the Fornell-Larker criterion (1981) indicated satisfactory discriminant validity since the square root of each construct's AVE exceeds all correlations among constructs. The maximum correlation among constructs is 0.7.

Table 1. Descriptive statistics, and reliability and convergent validity indexes of the measurement model

	Mean (SD)	λ	a	CR	AVE
Behavioral Intention (BI)	**3.50**		.927	.954	.872
B1. I intend to use Facebook for educational purposes	**(.98)**	.929			
B2.I intend to use Facebook for educational purposes as often as possible.		.943			
B3. I intend to use Facebook for educational purposes in the future		.930			
Attitude Towards Using (ATT)	**3.16**		.881	.927	.807
ATT1. I like to use Facebook for educational purposes	**(.93)**	.880			
ATT2. I think it is worthwhile to use Facebook for educational purposes		.922			
ATT3. In my opinion, it is very desirable to use Facebook for educational purposes		.894			
Perceived Usefulness (PU)	**3.23**		.880	.926	.806
PU1. Facebook allows me to communicate with my colleagues in a short time period	**(.99)**	.906			
PU2. Facebook makes it easier to establish and maintain personal relationships		.907			
PU3. Facebook allows me to share more in a short time period.		.880			
Perceived Ease of Use (PEOU)	**3.47**		.803	.884	.717
PEOU1. I became a Facebook member with ease	**(.95)**	.868			
PEOU2. My interaction with Facebook is clear and understandable		.812			
PEOU3. I do not have any problems learning about Facebook features on my own		.859			
Perceived Self–Efficacy (PSE)	**3.52**		.822	.883	.655

PSE1. I am good at using Facebook	**(.88)**	.856			
PSE2. I am confident that I can learn to use Facebook		.848			
PSE3. I am quick to learn about social media		.823			
PSE4. I can cope with the difficulties encountered in the use of Facebook		.701			
Social Influence (SI)	**3.14**		**.795**	**.880**	**.709**
SI1. I use Facebook because my friends recommended that I do	**(.88)**	.877			
S2. I pay more attention to the Facebook features used by my friends/contacts		.856			
S3. I use Facebook because many people I know expect me to use it		.792			
Trustworthiness (TW)	**2.75**		**.858**	**.914**	**.779**
TW1. I trust Facebook for the information on my profile	**(.86)**	.861			
TW2. Facebook provides security for my postings		.901			
TW3. Facebook provides security for my profile		.885			
Perceived Enjoyment (PE)	**3.62**		**.907**	**.942**	**.843**
PE1. I enjoy Facebook because it entertains me.	**(.97)**	.906			
PE2. I enjoy Facebook because it gives me the freedom to express my feelings.		.909			
PE3. I enjoy Facebook because it reduces my stress.		.939			

Note: λ=Factor loadings, a=Cronbach's Alpha, CR=Composite reliability, AVE=average variance extracted

Table 2 shows the path coefficients among constructs and their estimation by robust 95%-confidence intervals (Sanchez, 2013). Considering the confidence intervals, 9 out of 11 hypotheses that are presented in the conceptual model (Figure 1) were supported. Moreover, as a footnote in the table, you can see the R^2 or the coefficient of determination, which is the explained variance for each endogenous variable in the model.

Table 2. Structural model: Path coefficients and 95% confidence intervals with bootstrapping (2000 samples)

	Path Coeff.	95% CI	Results
H4: PU -> BI	.234	.077 - .404	Supported
H5: ATT -> BI	.210	.047 -.392	Supported
H10: TW -> BI	.324	.181 - .462	Supported
H11: PE -> BI	.166	.005 - .316	Supported
H3: PU -> ATT	.466	.301 - .630	Supported
H2: PEOU -> ATT	.113	-.070 - .266	Not Supported
H9: SI -> ATT	.317	.189 - .457	Supported
H1: PEOU -> PU	.674	.535 - .798	Supported
H8: SI -> PU	.139	.002 - .280	Supported
H6: PSE -> PU	-.014	-.156 - .136	Not Supported
H7: PSE -> PEOU	.496	.335 - .646	Supported

Note: Explained variance for each endogenous variable in the model: R^2(BI)=60%, R^2(ATT)=54%,

R^2(PU)=53%, R^2(PEOU)=25%

6. Discussion of results

This work applied the TAM to examine the factors that affect Greek students' behavioral intention to use Facebook for educational purposes. Particularly, it investigated the influence of four external variables: a) Perceived self-efficacy, b) Social influence, c) Trustworthiness, and d) Perceived Enjoyment of Facebook. Results support that this TAM version is a good adaptation to the factors which determine the students' intention to use Facebook for academic purposes. The total explained variance of BI is high (60%). Moreover, the constructs PU, ATT, TW, and PE have a direct effect on BI, while PEOU, PSE, and SI, affect BI indirectly.

The factor PSE presented a statistically significant direct effect (.496) on PEOU and an indirect effect (.119) on BI. The higher a student's ability to succeed in specific situations, the higher the student perceives Facebook use to be easy to apply in his/her studies, and the higher their intention to use it. Regarding the factor SI, it was observed a statistically significant direct effect (.139) on PU, a direct effect on ATT (.317) as well as an indirect effect (.113) on BI. The higher a student's influence by others, the higher the student perceives Facebook as useful for studies, and the higher their attitudes towards Facebook usage and the higher their intention to use it. Moreover, the factor TW presents a statistically significant direct effect (.324) on BI. The higher students who believe that the exchange of information and data which find on Facebook is reliable the higher their intention to use it (Rauniar et al., 2014). Finally, the factor PE presents a statistically significant direct effect (.166) on BI. The higher students' feelings of delight and pleasure when using Facebook the higher their intention to use it (Dumpit & Fernandez, 2017; Praveena & Thomas, 2014; Sledgianowski & Kulviwat, 2009).

Regarding the above factors that explain the students' intention to use Facebook for academic purposes, stakeholders should support social media trustworthiness and perceived enjoyment to increase the usage for academic purposes. However, the fact that students were asked to present their perceptions is an issue that usually leads to response biases (Lavidas & Gialamas, 2019; Lavidas et al., 2022). Future research needs to focus on a larger sample of students from various universities and disciplines as well as the usage of other social media to verify the findings of the current study.

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