



Adoption of Social Networking Sites among Pakistani University Students: A Case of Face-Book

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Abstract

Since birth of Social Networking Sites (SNSs), these attracted millions of users from all around the world. The SNSs have changed the communication ways of people from more traditional to modern approaches. This study aims to examine diffusion and adoption of Facebook.com among Pakistani university students using Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA) with an extension of Theory of Planned Behavior (TPB). The study used stratified random & pre-tested questionnaire based on 5-point Likert scale to record answers. Structural Equation Modeling using AMOS Graphics 20.0, reliability statistics and descriptive statistics were used to illustrate & analyze collected data. The findings indicate surprising outcomes about no significant impact of perceived enjoyment, perceived ease of use, news, and attitude factor of TAM and TRA found on intention to use Facebook. Perceived usefulness & social norm proved to be the most important factors. With the help of these findings, marketers and advertisers can better develop their marketing strategies and advertising campaigns, e.g. especially viral marketing. The insufficient sample confined area and dependence of findings on prior tested theories of TAM impose limitations on the generalizability of findings

Keywords: Social networking sites, Technology adoption model, Theory of reasoned action

Introduction

From the day of introduction of Social Networking Sites (SNS), sites such as

Facebook, MySpace, and Twitter have attracted millions of users across the world, and a large proportion of these users have incorporated SNSs in their routine lives. Kim *et al.* (2011) have discussed that the way of communication of people has completely changed from traditional to dynamic, helping users to connect with friends, chipping in

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discussion forums, sharing interests with people, developing personalized blogs and assisting users to find a social network. In fact, researchers have demonstrated massive potential of benefiting from data generated electronically by online users. The SNSs facilitate users in exchanging digital information, such as pictures, videos, blogs, https and SMS among users of common benefits such as university or college fellows, work groups, friendship and family (Sledgianowski and Kulviwat, 2009).

The SNSs demonstrate high diffusion, wide recognition and a large number of features providing modern communication styles to their users. The major SNSs include Facebook, MySpace, Friendster and Twitter, with MySpace having over 200 million users (Thill and Bovee, 2011). Lampe *et al.* (2007) discussed that SNSs specifically evolve shared environment and out of the ordinary interests like students contexts at universities and colleges. Students use SNSs generally to stay in contact, to communicate, and acting as “secret agent” of their friends. The SNSs are still emerging in Pakistan, so the central objective of this study is to examine the adoption of new mediums of communication and information technology (IT) among university students in a developing country like Pakistan.

Literature and Background

Students’ Use of Facebook

Before having formal discussion on Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA), it is

essential to discuss trends and usage rate of Facebook of students. Facebook is the most famous SNS for college students, and, a study showed that 85% to 99% of college students use Facebook (Matney and Borland, 2009). It is essential to report here that while analyzing the adoption and usage of technology, students are categorized on the bases of racial, gender and socioeconomic status (Cooper & Weaver, 2003). And only one published research has been found (Hargittai, 2008b) on ethnic, gender, and socio economic characteristics between users and non-users of SNSs which elaborated that; students having parents with college degree used Facebook more than the students having parents with no proper college/university degree. However, there has been limited research conducted on outcomes of Facebook use, where some researches inspected the relationship between Facebook use and psychological consequences which provides basis for the verification of TRA.

Theoretical Background

The SNSs facilitate users to create profile on websites, post information on these sites, communicate and share information with each other online (Kaplan and Haenlein, 2010). Past studies also discussed SNSs as online “community” having connections of relationships such as family/friends and building new relationship with other people on the bases of activities, romance and professional networking. Facebook, Linkedin and Twitter are the websites that come into mind when an individual thinks about social websites in his/her evoked set.

Facebook is the largest among other social websites aimed to connect family, friends and business people, and, the users can develop their profiles showing network information and list of friends. Mark Zuckerberg, a Harvard student, found Facebook in 2004 with successful acceptance at Harvard and also endorsed it to Stanford and Yale University. In a short span of time, Facebook was accepted and adopted by United States and Canadian college students. After successful adoption in schools, colleges and universities of English speaking world, it was decided in September, 2006 to make Facebook available to public. Now Facebook has become the most famous social network website.

Related Theories

Most of studies investigated adoption of information technology by three models: the TAM suggested by Davis (1989), TRA suggested by Fishbein and Ajzen (1975), and TPB recommended by Ajzen (1991). Most of studies explain information technology adoption and acceptance used TAM. The human attitude towards intention to use technology is expressed by TAM. TAM inferred two key variables, perceived usefulness and perceived ease of use, effect attitude of an individual to perform some task. According to TAM, perceived ease of use is defined as degree of perception of easy use of system, while perceived usefulness refers to degree users perceive the use of technology to develop their performance.

The human behavior has been extensively explained by this theory inferring that

attitude can explain behavioral intention on the basis of subjective norm and behavior. The subjective norm holds perception that individual is influenced by people around him/her about performing a behavior and the attitude is the positive or negative feelings about executing a behavior. Ajzen (1991) proposed TPB, an extension of TRA but having conditions that sometimes individual does not have full control on his/her behavior. The TPB believes that the key factor is behavioral intention in human behavior and it is affected by subjective norm, attitude in the direction of behavior, and perceived behavioral control.

Research Model

The TAM also considers influences of external variables on use of technology (Hong *et al.*, 2001). Moreover, this study integrates some additional elements such as subjective norm, perceived enjoyment, self efficacy, news, snoop, and information receiving which will better explain to determine intention to use social networking sites.

Perceived Usefulness, Perceived Ease of Use and Attitude towards Usage:

TAM conjectured two major determinants, perceived usefulness and perceived ease of use, effect attitude of an individual. Perceived usefulness refers to degree users perceived that use of technology develop their performance in using a system. Tornatzky and Klein (1982) illustrated that past researches related to innovation adoption found significant role of perceived

usefulness in using IT. Furthermore, perceived usefulness played a mediating role for perceived ease of use on use of technology (Agarwal & Prasad 1999; Jackson *et al.*, 1997). Numerous studies have been found showing a positive direct relationship of behavioral intentions on behavior (Hung *et al.*, 2003). In summary, behavioral intention is result of social norm and attitude towards. Perceived ease of use defined as degree of perception of easy use of system defined in TAM. Most of past studies found that the perceived ease of use influenced, either directly or through perceived usefulness, the behavioral intention (Venkatesh, 1999; Yi & Hwang, 2003; Hu and Bentler, 1999). A study conducted on internet banking in Tunisia proved that perceived ease of use and perceived usefulness are interrelated and attitude of Tunisian consumers (Wadie and Lanouar, 2012). Moon and Kim (2001) determined the significant relationship between both, perceived usefulness & perceived ease of use. Attitude is a major determinant of behavioral intention, develops individual's beliefs about a particular behavior. Bobbitt & Dabholkar (2001) and, Dishaw & Strong (1999) argued that attitude has a direct positive effect on someone's intentions to use new technology.

Social Norm, Snoop and News:

Ajzen and Fishbein (1980) defined social norm as the perception of a person that people who are near to him/her will not show some behavior in question. A study conducted in Malaysia, concluded that social norm found to be the most significant factor

that describe mobile banking usage (Amin *et al.*, 2007; Nysveen *et al.*, 2005). Furthermore, the technology acceptance and online consumer behavior has been measured by TRA and TPB. Therefore, social norm is suggested as major construct of behavioral intention towards using Facebook. In Tunisia, it has been founded that social norm played a vital role in intention development towards using internet banking (Wadie, 2011).

Facebook allows users to develop a web page which contained personal information, like gender, hometown, relationship status, contact information, birthday, political & religious affiliations, physical addresses, school & college qualifications, and it also contained information about users' interest about music, movies, dramas, books. After entering information on profile page, users are permitted to make friends, making requests to join Facebook for developing relationships. Users can update their information and user can snoop or spy on Facebook by getting information from postings and profiles. The snoop pulls users towards Facebook around the world. Users receive updates from friends and other people, categorized in two characteristics: "News Feed" for all users and "Mini-Feed" appears on a particular user. News Feed generate all stories of activities of friends in the whole day, whereas, Mini-Feed refers to individual's change in profile and applications.

Perceived Enjoyment, Information Receiving and Perceived Computer Self-Efficacy: According to TAM, perceived

enjoyment refers to the degree of enjoyment an individual feels in using a particular system, irrespective of results of use. Previous studies about internet and e-commerce revealed that TAM along with perceived enjoyment determine users' adoption of particular system, and explained perceived enjoyment positively affected users' attitudes towards system (Bruner and Kumar, 2005; Dabholkar, 1996; Moon and Kim, 2001). It has been found that perceived enjoyment positively affected individual's behavioral intentions in use of blogs (Van der Heijden, 2003; Hsu and Lu, 2004). Present study focuses on interest in using Facebook and enjoyment student perceived in using Facebook.

Monsuwe *et al.* (2004) defined "perceived computer self-efficacy" as individual's confidence about his/her ability to use multiple computer applications. Computer self efficacy has given greater importance in previous studies and individual reaction towards information technology is affected by computer self efficacy (Compeau & Higgins, 1995; Chan & Lu, 2004). The proved relationship has been found between perceived ease of use and computer self efficacy (Igarria & Iivari, 1995).

In order to investigate the relative factors, technology acceptance model has been used to measure the central phenomenon in two aspects. First, on the bases of self efficacy, perceived enjoyment, subjective norm, information receiving and snoop. Second, on the bases of age, gender, possession of a Facebook account, frequency of using

Facebook account and purpose of Facebook account.

Research Hypotheses

Based on previous studies / findings, following hypotheses have been developed:

H1. *Perceived Usefulness and Perceived Ease of Use*; There is an association between perceived usefulness of Facebook and perceived ease of use of Facebook.

H2. *Perceived Usefulness and Attitude*; The higher perceived usefulness will lead to positive attitude towards using Facebook.

H3. *Perceived Ease of Use and Attitude*; The higher degree of ease of use, the higher the attitude of using Facebook.

H4. *Perceived Ease of Use and Intention to Use*; There is a positive relationship between perceived ease of use and intention to use Facebook.

H5. *Attitude and Intention to Use*; There is an association between attitude towards Facebook and intention to use Facebook.

H6. *Social Norm and Acceptance*; There is a positive relationship between social norm and students' acceptance of Facebook.

H7. *Snoop and Perceived Usefulness*; The increase in snoop will increase perceived usefulness of Facebook for students.

H8. *News and Perceived Usefulness*; Perceived enjoyment will positively affect perceived usefulness of Facebook.

H9. *Perceived Enjoyment and Perceived Usefulness*; Perceived usefulness of Facebook positively affected by.

H10. *Information Receiving and Perceived Usefulness*; Information receiving will

positively affect perceived usefulness of Facebook.

H11. *Perceived Self Efficacy and Perceived Ease of Use*; Perceived self efficacy will positively affect perceived ease of use of Facebook.

Research Objectives

No study has been found in Pakistan regarding determinants of intention to use Facebook among university students. The study aims to determine the factors which deem vital to adoption and use of Facebook among Pakistani students. The study believes that Facebook is most suitable and most important SNS website for current research as it is most famous and extensively used SNS among university students. This study aims to attain following objectives:

- To investigate the effect of factors of TAM and TRA on attitude and intention to use Facebook among Pakistani university students.
- To determine relative importance attached to all factors.
- To determine strength of association among these factors.
- To inspect feasible implications to marketers and advertisers to design marketing strategies based on findings of study.
- To make addition to existing knowledge so that researchers use the findings for other group of users and explore other factors which affect adoption of information technology.

Methodology

Data Collection & Analysis Instrument

Stratified random sampling was used for this study which consisted of two hundred thirty six respondents, which were students of University of Engineering and Technology Lahore, University of Punjab Lahore, GC University Faisalabad, University of Agriculture Faisalabad, and COMSATS Institute of Information Technology Sahiwal. The respondents included sixty-nine percent male and Thirty One percent female students. The data was collected from university undergraduate and postgraduate students who were users of Facebook. The study implied structured and pre-tested questionnaire based on five-point Likert scale to collect data.

The questionnaire consisted of forty-five elements related to adoption and use of Facebook and five demographic questions concerned to age, gender, possession of a Facebook account, frequency of using Facebook account and purpose of Facebook account. For perceived usefulness, perceived ease of use, self efficacy, perceived enjoyment, attitude, social norm and intention to use Facebook, the respondents were asked to answer on a five point scale ranging from “Strongly Disagree = 1” and “Strongly Agree = 5”. Whereas, for information receiving, news and snoop, the respondents were asked to use five point Likert scale ranging from “Never use = 1” to “Very often = 5”. The data was collected from respective universities in May, 2013. The study used Structural Equation

Modeling (SEM) using AMOS, Model Fit Indices for Model Fit. Reliability analysis and descriptive statistics were conducted to demonstrate demographic characteristics and Facebook use of respondents.

Measurement of Constructs

The measurement used in this study was adopted from past studies. Four items for perceived usefulness and attitude each, and three items for perceived ease of use and intention to use were measured by adopting items from Cheng *et al.*, (2006), and Lai and Li, (2005). Computer self efficacy was measured using 10 items adopted from Compeau and Higgins (1995) and subjective norm containing three items adapted from Wu and Chen (2005). Perceived enjoyment was measured using 3 items, snoop containing three items, and news containing two items respectively adopted from

measurements of Watanyoo and Wornchanok, (2011). The demographic variables such as gender, age, qualification, possession of Facebook account, purpose of Facebook account, frequency of visit of Facebook account were adopted from Roblyer *et al.* (2010).

Data Analysis and Results

Descriptive Statistics

The age group of 22-24 years has major proportion in total 236 respondents. The mean age was 20 with standard deviation of 1.20. With increase in age, the percentage in total respondents decreased. The majority (82%) of students claimed to have a Facebook account, with minority (18%) did not have a Facebook account which justified need to conduct research on resistance to adoption of Facebook.

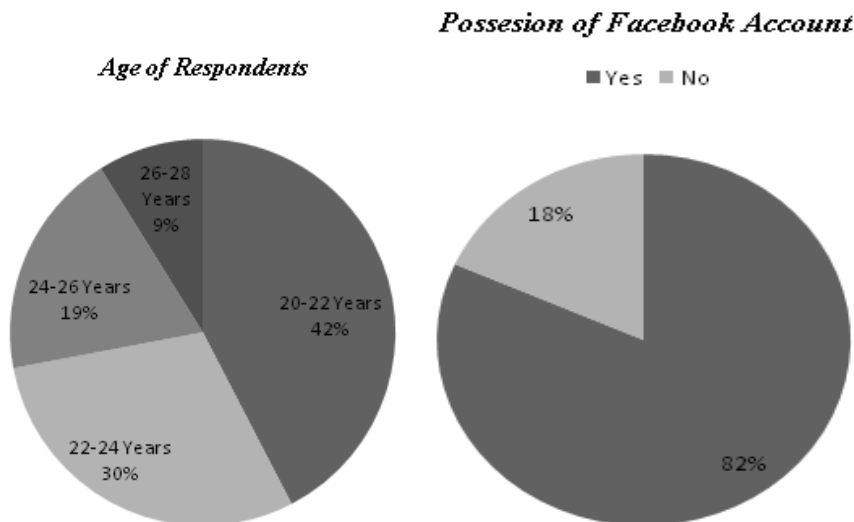


Figure 1: Age of Respondents

Figure 2: Possession of Facebook Account

The undergraduate students hold the major part of respondents with 71%, and remaining 29% are postgraduates. Most of respondents open their Facebook account once per day, followed by “2-5 times per day” and “6-10 times per day”. Our survey results indicated that there are three major reasons behind joining of Facebook by students. The element of “To make friends” went ahead from other elements. The other major reasons are “To communicate”, “to be

known”, and respondents do not consider “for enjoyment” element in using Facebook. The students of undergraduate classes are greater than students of postgraduate classes. The undergraduate students with high frequency of use have more self efficacy but postgraduate students are more affected by social norms. Female students were proved to be less expert of using Facebook and more influenced by social norms than male students.

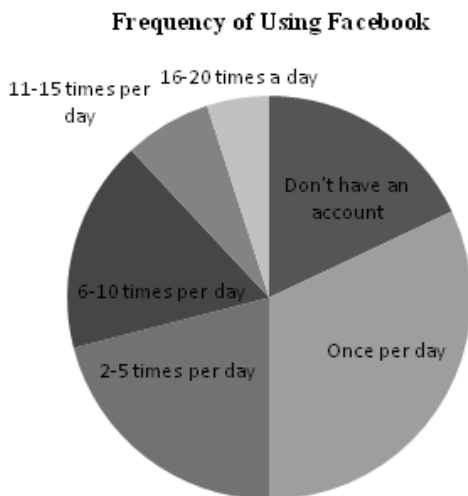


Figure 3: Frequency of Use of Facebook

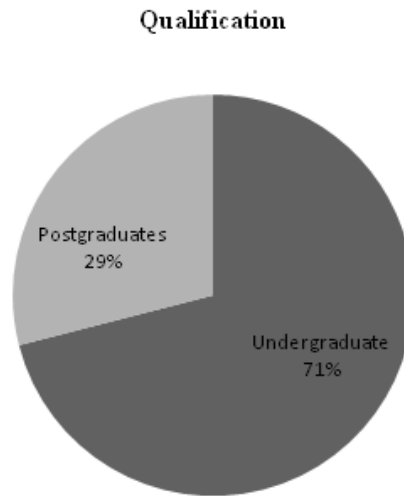


Figure 4: Qualification of Respondents

Reliability Statistics & Results

All the constructs used in study showed reliability of “>0.70” which is considered highly reliable. The perceived ease of use, news, intention to use and attitude has highest reliability scores with 0.927, 0.854, 0.815 & 0.801 respectively. Perceived

usefulness, information receiving, snoop & social norm showed reliability figures of 0.794, 0.792, 0.788 & 0.775 respectively. The self efficacy and perceived enjoyment were the followers with scores of 0.711 & 0.709 respectively.

Table 1: Reliability Statistics

Construct	Cronbach Alpha (α)
Perceived Usefulness (PU)	0.794
Perceived Ease of Use (PEOU)	0.927
Intention to Use (INT)	0.815
Attitude (ATT)	0.801
Self Efficacy (SE)	0.711
Social Norm (SN)	0.775
Perceived Enjoyment (PE)	0.709
Snoop (SNO)	0.788
News (NEW)	0.854
Information Receiving (IR)	0.792
Overall Reliability	0.773

The perceived usefulness is positively affected by information receiving and snoop with ($\beta = 0.15$ & $p = .000$) & ($\beta = 0.22$ & $p = .000$) and on the contrast, News has moderate negative and perceived enjoyment exert a strong negative impact on perceived usefulness with ($\beta = -0.11$ & $p = .000$) and ($\beta = -0.75$ & $p = .000$) respectively. The strong positive relationship has been proved ($\beta = 0.85$, $p = .000$) between perceived usefulness and perceived ease of use. On the contrary, perceived usefulness has moderate effect on attitude and attitude, surprisingly, has no impact ($\beta = 0.00$, $p = .000$) on intention to use Facebook. Henceforth, social norm has a strong influence ($\beta = 0.97$, $p = .000$) on intention to use Facebook and computer self efficacy influence ($\beta = 0.65$, $p = .000$) the

perceived ease of use. The SEM is used to examine relationships between constructs and also states different co-efficients related to each other. The obtained Goodness of Fit Indices (GFI) is 0.80 but recommended is “> 0.90”. The suggested Root Mean Square Error of Approximation (RMSEA) is between 0.05 and 0.08 but obtained value of RMSEA is 0.09 which impose limitations on goodness of model. Notwithstanding, Incremental Fit Index (IFI), Relative Fit Index (RFI), Normed Fit Index (NFI), and Comparative Fit Index (CFI) hold values of 0.876, 0.834, 0.90 and 0.89 against recommended value of “> 0.90”. However, the model is considered to be fit because of values of incremental indices.

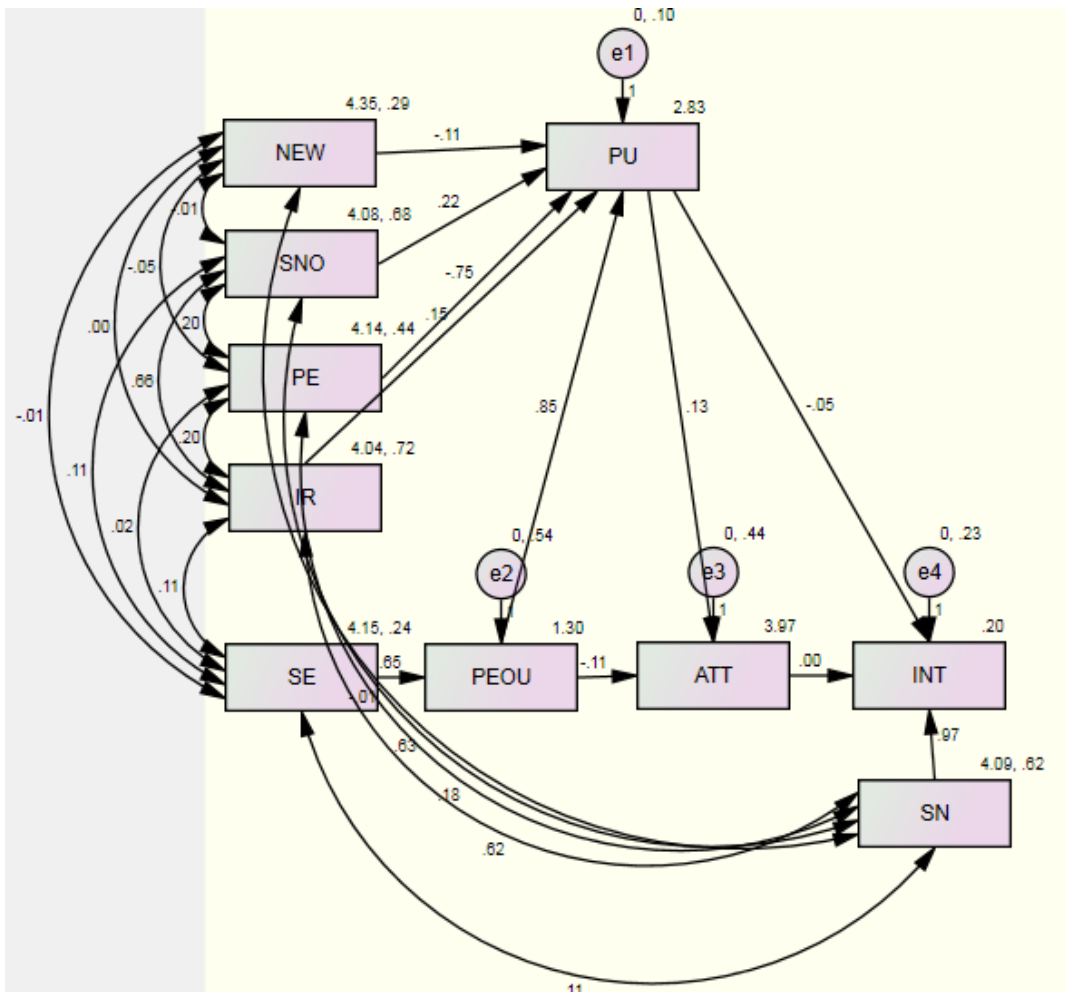


Figure 5: The Results of Structure Equation Modeling (SEM)

Conclusion

After testing the TAM and TRA models, it is concluded that all factors in the suggested model have positive or negative effect except attitude, on intention to use Facebook. Social norm have strong affect on intention to use Facebook, confirming the previous. Perceived usefulness has not been verified to be a major determinant in investigating the intention to use Facebook. Most of hypotheses are not supported by data in Pakistan. The attitude to use of Facebook has been affected positively by perceived

usefulness. This finding validates finding of previous studies describing the significance of individual's perceived value of technology as a factor for adoption. There is a negative relationship between attitude and perceived ease of use of Facebook. The Pakistani students are not concentrated towards enjoyment of using Facebook and it has a strong negative influence on perceived usefulness of Facebook disconfirming past. The study inspects TAM and TRA but model has not been proved to be too good to explain the adoption of Facebook in Pakistan. Pakistani students prove more self

efficacy in using computer applications and it builds up their perception about Facebook of being easy. Pakistani students is widely affected by their society in acceptance of technology especially Facebook. The findings confirmed Ajzen (1991) extended TPB in Pakistan that students do not have absolute control on their intention to use and this intention affected attitude in reverse way. But findings validated the influence of social norm on intention which supported TPB. The findings of gender and qualification factors provided dissimilar results on frequency of use, computer self efficacy and qualification.

First of all, this study is initiative to check validation of TAM in a developing country and attempts to describe intention to use Facebook. Secondly, findings designate that attitude does not have a slight effect on intention to use. Conversely, social norm proved to be a most important determinant in adoption of Facebook. Thirdly, findings of this study will be of essence in depicting reasons causing to adoption of Facebook within context of educational institutions. Despite of all research of acceptance of SNS in universities all around the world, the research on university students' adoption of Facebook in Pakistan was completely uncovered and unexplored.

Implications

This study intends to recommend a framework to understand different factors of adoption of Facebook in Pakistan and SNS providers can enhance rate of adoption by

following guidelines obtained after findings of study. This study adds to theoretical literature, it emphasizes the role of perceived usefulness and ease of use as major factors on attitude towards using Facebook. The perceived enjoyment and news are no longer remaining important determinants effecting perceived usefulness. The perceived usefulness is also not a trustworthy determinant of intention to use. Furthermore, perceived usefulness is affected by information receiving and snoop. The study used TMA and TRA model to measure acceptance and adoption of only students and researchers can include others users of Facebook to generalize findings. The findings of study recommend important practical implications for SNS companies and companies aiming to use Facebook for marketing activities because it is mostly used SNS website by university students. The companies are changing their promotional activities from traditional to more dynamic approaches. Facebook can be used as advertising platform and to promote word-of-mouth marketing (WOMM). It also provides implications for conversion of WOMM to evangelism marketing. The users of Facebook will act as promoters and make emotional connections to products advertised on Facebook. The developers and marketers can use gender, qualification and computer efficacy factors in developing SNSs and advertisement purposes. The students with no Facebook account also grant implications for researchers to conduct research on areas related to technology resistance particularly SNSs adoption and resistance.

Limitations

The factors included in this research are not sufficient in exploring adoption of Facebook in Pakistan. The study relies on already widely tested theories i.e. TAM & TRA in other contexts. There could be other factors which have greater impact on adoption and have more influence on behavior of students regarding Facebook adoption. The ignorance of study about other groups of users imposes wider limitations on implications of findings. The study is limited to university students but trends of using Facebook are going to increase in school and college students which were not part of sample. The age group of respondents (18-22) does not provide foundations to generalize results to age groups below or above this selected group. The area covered for this study is limited to three cities while there could be probability of obtaining better and comprehensive results if study includes Islamabad and Karachi which are more metropolitan cities. The study is limited to three cities of Central Punjab and respondents are from almost same cultural and financial background. There is also no presence of different ethnic groups because students with different ethnicity have different attitude and behavior towards purchase and consumption of a product. The rural students in selected cities do not have an internet connection at home which limits the scope of study.

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