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Research Article

Application of Technology Acceptance Model and Trust in Determining Purchase Intention: A Case of Facebook Influence

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Abstract: The extensive acceptance of Facebook to communicate and connect has given rise to understand the user behavior and is elementary in developing and implantation of new technologies. The approach that is empirically used is Technology Acceptance Model. TAM is a common method to explain the acceptance behavior of various information and communication system. TAM predicts the intention and acceptance of technology. This study explores the determination of purchase intention influenced by Facebook. The influence of Facebook applying perceived usefulness, perceived ease to use and trust is observed with primary data set of 275 users of Facebook assembled from a web-based questionnaire survey. The results exhibited by the TAM model proposed for the study rejects all the null hypothesis. Based on existing literature, explains the influence of Facebook on purchase intention. This paper can be a base for policy makers and marketers to gain better understanding of user's behavior.

Key words: Facebook, TAM, Trust

1. INTRODUCTION

Past couple of years have witnessed unusual growth in technological advancement and assuming Facebook as one of the promotional tools that can tonic consumers intention to purchase has become a prominent issue. This has given arise to the need for recognizing the elements that support target audience behavioral intention. Except Facebook, there is no any social platforms that allows analysis and monitoring of companies' participation in network and enables to measure the impact of social media strategies in business [8].

The working-class people busy in their work-life and familiar with the use of modern information technology are seen majority (57.3 percent) of the online shoppers from the age group of 20-30 years [28]. The internet penetration rate in Nepal is expected to be more than 55.6 % in 2020 (Internet World Stats, 2020 "https://www.internetworldstats.com/stats3.htm") and 10.52 Million Facebook users accounting to 34.6 % of entire population. The majority of Facebook users are Male (60.4%) and largest user aged ranged 25-34 (NapoleonCat "https://napoleoncat.com/stats/facebook-users-in-nepal/2020/01"). A study conducted in Kathmandu by Rana [21] reveals that Facebook marketing triggers the respondent to make a purchase of product/service. She even adds that the respondent only sometime relieson information available on Facebook. However, the use of Facebook to influence purchase intention in Nepal is still unsearched. Nepal is observing rapid increment in mobile phone user. The mobile phone users in 2020 are 48.25 Million, an increment of 7.6% from previous year. Nepalese online shoppers prefer online shopping to save time, followed by the service quality delivered by the online shopping company [28]. Customers of

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of Nepal require prompt information regarding price, benefits, offers and deals. This clearly defines, Nepalese customers can be pursued using Facebook.

A study conducted by Coelho *et al.*, reveal that consumer and companies take Facebook page as most favorable feature and companies are recognizing the need of content and responding the needs of customers' in networks [7]. However, Facebook advertisement has positive while Facebook environment has negative effect on the buying behavior of young consumers in Pakistan [23].

TAM model has significant and positive influence in consumer purchase intention [24]. Among all the theories, the TAM is considered as the most parsimonious and powerful theory in explaining the technology usage behavior [29]. TAM is successful model in regard to intention because number of studies have been conducted on online behavior applying TAM [25]. The success of online services not just depend on the benefits but the level of trust the customers have on the system [2]. People are influenced by Word of Mouth and opinion given from the people they know in Facebook affects the buying behavior with no care about the Brand image [24]. The people don't rely in Facebook because of trust issue. In developed countries, the integration of TAM and Trust to determine the purchase intention has be greatly studied but no study has been conducted in under-developed countries like Nepal. Thus, this research contributes to better understand the relationship of trust and TAM in context of Biratnagar, the capital city of Province No. 1, Nepal.

The overall purpose of this study can be divided into two folds. First, it aims to test the influence of Facebook purchase intention applying TAM in Biratnagar. There are various studies conducted applying TAM such as Health information system [22], e-learning [6] and online retailing [16]. For the first objective, we use both the exploratory variables of the model. However, there are various studies that have extended the model using various constructs such as Subjective norms, reliability [10], mobility, connectedness, security [19] and belief, attitude, performance [26]. Therefore, the second objective of the study is to revise the TAM model with additional Trust construct.

1.1. Social Networking

Social networking sites have been defined as "a networked communication platform in which participants (1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-provided data; (2) can publicly articulate connections that can be viewed and traversed by others; and (3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site" [12] and include sites such as Twitter, Facebook, and Instagram. SNSs permit users to share personal information, receive and send messages, be connected online with friends regardless of geographic distance, share photos, videos, and bookmarks, join groups, conduct business, and become educated [15]. My space and Facebook are common SNSs for interactions among all people, and the most common SNS used by students is Facebook [17].

1.2. Facebook

Facebook is the most popular social networking sites with wide range of information, from personal history to social connections often revealing about their preference and pattern of activity [14]. Facebook allows user create visible profiles with minimum profiles requiring age, gender, date of birth, email address as well as can add basic facts about themselves [4]. The principal reason behind the use of Facebook is to gain and present information [3]. Facebook is primarily used for two social needs (1) need to belong and (2) need for self-presentation. These need act independently and are influenced by cultural, social-demographic and personality traits [18].

1.3. Technology Acceptance Model

The Technology acceptance model (TAM) was designed on the basis of Theory of reasoned action with an aim of understanding the acceptance and use of new information technology and system by recognizing the factors that successfully drives company's information system and adaptability with work station [9]. TAM is model that explains behavior intention and use of technology comprising of several variables (perceived usefulness, perceived ease to use, attitudes towards technology) and has been extensively used with extended variables such as self-efficacy, subjective norms that facilitate the conditions for technology use [25]. TAM has been most influential model for technology acceptance with primarily two important factors that influence individual intention to use technology: perceived usefulness and perceived ease to use [5].

The core construct of TAM is Perceived usefulness as "the degree to which a person believes that using a particular system would enhance his/her job performance" [9]. In the TAM model, perceived usefulness is the immediate indicator of behavior intention of use of technology interest [20]. There are various studies that shows the positive and significant effect of perceived usefulness of intention [1].

On the other hand, perceived ease to use, is the degree to which a person believes that using a specific system would

be free of effort [9]. In this paper, perceived ease to use the concept of user believing that their use of Facebook is free of effort. Scholars suggested that perceived ease of use affects adoption based upon the nature of the task to be performed [13]. Higher the perceived ease to use higher will be the intention to use [11]. A study conducted by Park *et al*., confirms that perceived usefulness and perceived ease to use are the key predictors for TAM. As a model for technology acceptance, TAM has been used by various researcher [20]. With numerous literatures in this area, technology acceptance model has been a theory that is most widely used to explain an individual's acceptance of an information system [27].

1.4. The conceptual framework

Based on the Technology Acceptance Model by Davis, the conceptual framework was developed as presented in Fig. 1.

2. METHODOLOGY

Questionnaire was developed and used as an instrument for data collection. A total of 313 questionnaire were distributed at a random basis in Biratnagar. That data was than analyzed using SPSS version 26. Descriptive analysis, Reliability analysis and Regression analysis were the performed in the data.

To investigate the revised TAM model, a total 18 items were generated. Of the 18 items, four items measure Perceived usefulness, four items Perceived ease to use, four items measure trust and three items measure intention to use. A five-point Likert scale was used, where 1= strongly disagree and 5= strongly agree, to identify the response of each items and some demographic items were included with different measurement scales. The final sample size was 275.

3. DATA ANALYSIS AND RESULTS

3.1. Descriptive Analysis

A total of 275 respondent from Biratnagar participated in this study. Major respondents were Male (74.5%), between the age range of 26-35 years (56.7%), unmarried (56.7%) studying Masters and above (59.6%) earning Rs. 60,001 and above and employed (60.7%).

Majority of respondent used Facebook for 2 hours (32%) and their usage frequency was daily (94.2%). The basic reason behind the use of Facebook was to contact with family and friends (56%) as people are influenced by Word of Mouth and opinion given from the people, they know in Facebook affecting the buying behavior but don't care about the Brand image [24]. The data is presented in the Table 1.

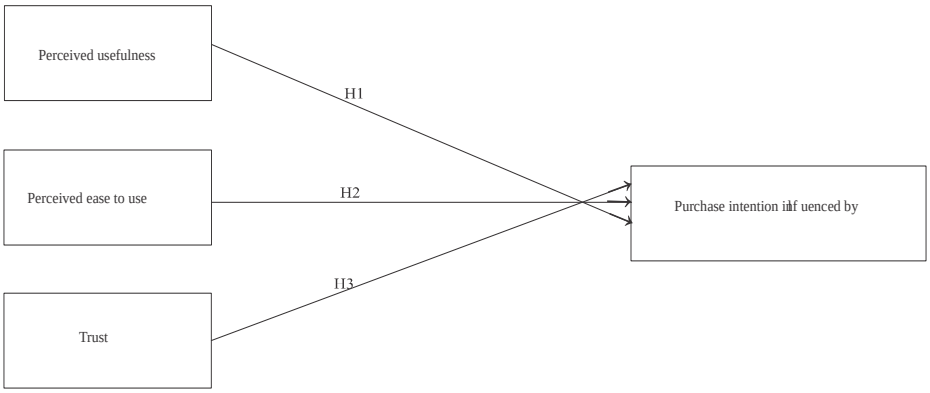

Fig. 1. Conceptual framework

Table 1. Background profile of the respondents

Description		Frequency	Percentage
Age	15-15	76	27.6
	26-35	156	56.7
	35 and above	43	15.6
Gender	Male	205	74.5
	Female	70	25.5
Marital Status	Married	119	43.3
	Unmarried	156	56.7
Education Status	Up to Intermediate	13	4.7
	Bachelors	98	35.6
	Masters and above	164	59.6
Occupation	Employed	167	60.7

Table 1. Continue

	Unemployed	10	3.6
	Self-Employed	49	17.8
	Student	49	17.8
Income	Less than 15,000	54	19.6
	15,001 to 30,000	52	18.9
	30,001 to 45,000	43	15.6
	45,001 to 60,000	61	22.2
	60,001 and above	65	23.6
How long do you use Facebook?	Less than an Hour	74	26.9
	2 hours	88	32.0
	3 hours	38	13.8
	4 hours	22	8.0
	4 hours and above	53	19.3
What is your Facebook use frequency?	Daily	259	94.2
	2-4 times a week	11	4.0
	Once a week	5	1.8
Why do you use Facebook most for?	To keep contact with family and friends	154	56.0
	For entertainment	57	20.7
	To get news	45	16.4
	To follow brands/companies	5	1.8
	To strengthen professional network	14	5.1

Table 2. Reliability and validity of scales

Constructs	Cronbach's Alpha
Perceived Usefulness	0.842
Perceived Ease of use	0.732
Trust	0.858

Table 3. Multiple Regression Analysis

Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.809	0.173		4.673	0.000
PU	0.140	0.059	0.163	2.374	0.018
POEU	-0.011	0.071	-0.011	-0.150	0.881
T	0.637	0.063	0.543	10.093	0.000

Dependent Variable: Purchase Intention
Adjusted R Square: .377

Table 4. Hypothesis test

Hypothesis	p value	Remarks
H1: There is no significant relationship between perceived usefulness and purchase intention.	0.018	Rejected
H2: There is no significant relationship between perceived ease of use and purchase intention.	0.881	Fail to Reject
H3: There is no significant relationship between trust and purchase intention.	0.000	Rejected

3.2. Reliability and Validity of Scales

To test the reliability, Cronbach Alpha coefficient was used. To check the reliability of scales coefficient must be above 0.70. The general alpha coefficients are found as perceived usefulness (0.842), perceived ease to use (0.732) and trust (0.858). According to this result, it is possible to say that research has a good degree of reliability (Table 2).

3.3. Multiple Regression Analysis

According to Standardized Coefficients Beta, trust is the most important exploratory factor for purchase intention and is the second important factor. Perceived ease to use has no significant effect on purchase intention. The regression coefficients are accepted at 0.05 significance level. The adjusted R square shows that 37.7% independent variable defines dependent variable.

According to the Table 3,1 Unit increase in trust increases the purchase intention by 0.637, 1 unit increase in perceived usefulness increase the purchase intention by 0.140 whereas, 1 unit increase in perceived ease of use decreases purchase intention by 0.011.

Based on the significance value of the regression analysis, H1 and H3 were rejected and we failed to reject H2 (Table 4).

4. DISCUSSION

Facebook has become a prominent social media because it provides ease in interactions, communication at large, social connection and entertainment to its users. The unparallel popularity of Facebook has given a rise to study its influence on purchase intention. Therefore, the present study has extended the TAM model to explain the influence of

Facebook on purchase behavior of people of Biratnagar. This paper provides contribution to area of Facebook influence on purchase intention. The result from regression analysis shows the effect of different construct on purchase intention and believe is a significant addition to the social media literature. Results have implications to policy makers, marketers and finally to future researchers.

H1 shows a positive relationship between perceived usefulness and purchase intention. It suggests that if the updated information, reminder on new arrivals and ease in tracking products/services is provided through Facebook can enhance the purchase intention. Therefore, marketers need to find ways to get in connection with the consumers. However, H2 shows a negative relationship between perceived ease to use and purchase intention warning the marketers that consumers find it cumbersome to search information in Facebook. Often customers get confused on what Brand page to look for products/ services. Thus, marketers should bring about changes in their Brand page and provide the platforms that helps them in easy search of authentic pages.

5. CONCLUSION

This research paper takes the support of Technology Acceptance Model and Trust to determine the influence of Facebook on purchase decision. Among the factors, perceived usefulness and trust positively influenced purchase intention whereas perceived ease to use showed negative influence on purchase intention. It indicates that perceived usefulness and trust are the predictors of purchase intention. Trust was found to be the strongest predictor to influence purchase intention followed by perceived usefulness.

Marketing managers should formulate requisite strategies and procedure to create a brand image in the mind of the customers. Messages and ads designed should be as such which can easily position the intended information. Marketers must focus on the influence of family, friends and relatives because they have influence on the buying behavior. Information about products and services should be easily available while searching for it and should be as required.

However, this study has a few limitations. First, since the survey was conducted within the geographical area of Province No.1 capital city Biratnagar, the results should be interpreted carefully, in context to generalization of Facebook users as a whole. Second, the sample size (n=275) represents fraction of the Facebook user in Biratnagar. Future researcher should focus on larger sample of Facebook users. Future researchers can use other social media sites for the study like Twitter, YouTube etc. In spite of these limitation, this study can be a base for future researchers, practitioners and educators by extending the current model in developing countries.

6. REFERENCES

[1] Anisur, M., X. Qi and T. Islam, 2016. Banking access for the poor: Adoption and strategies in rural areas of Bangladesh. J. Econ. Financial Stud., 4: 1-10.

[2] Beldad, A., M. de Jong and M. Steehouder, 2010. How shall I trust the faceless and the intangible? A literature review on the antecedents of online trust. Comput. Hum. Behav., 26: 857-869.

[3] Bonds-Raacke, J. and J. Raacke, 2010. MySpace and Facebook: Identifying dimensions of uses and gratifications for friend networking sites. Individual Differences Res., 8: 27-33.

[4] Boyd, D.M. and E. Hargittai, 2010. Facebook privacy settings: Who cares? FirstMonday, 5, 8.

[5] Charness, N. and W.R. Boot, 2016. Technology, Gaming, and Social Networking. Handbook of the Psychology of Aging, Schaie, K.W. and W. Sherry (Ed.). Academic Press U.S. pp: 389-407.

[6] Cheung, R. and D. Vogel, 2013. Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning. Comput. Educ., 63: 160-175.

[7] Coelho, J., H. Nobre and K. Becker, 2014. The impact of Facebook presence on brand image. Int. J. Technol. Marketing, 9: 320-332.

[8] Correia, P., M.I. García, R.Z. Gonzálezra and R.S. Contreras Espinosa, 2014. The importance of Facebook as an online social networking tool for companies. Int. J. Account. Inf. Manag., 22: 295-320.

[9] Davis, F.D., 1989. Perceived usefulness, perceived ease of use, and user acceptance ofinformation technology. MIS Q., 13: 319-340.

[10] Ducey, A. and M. Coovert, 2016. Predicting tablet computer Use: An extended technology acceptance model for physicians. Health Policy Technol., 5: 268-284.

[11] Elkhani, N., S. Soltani and M.A. Nazir, 2014. The effects of transformational leadership and ERP system self-efficacy on ERP system usage. J. Enterp. Inf. Manage., 27: 759-785.

[12] Ellison, N.B. and D. Boyd, 2013. Sociality through social network sites. The Oxford handbook of internet studies, Dutton, W.H. (Ed.). Oxford University Press, United Kingdom. pp: 151-172.

[13] Gefen, D. and D.W. Straub, 2000. The relative importance of perceived ease of use in IS adoption: A study of e-commerce adoption. J. Assoc. Inf. Sys., 1: 1-28.

[14] Golbeck, J., 2015. Facebook. Introduction to Social Media Investigation. A Hands-on Approach, Golbeck, J. (Ed.). Syngress Publishing, United State, pp: 65-84.

[15] Hinduja, S. and J. Patchin, 2008. Personal information of adolescents on the Internet: A quantitative content analysis of MySpace. J. Adolescence, 31: 125-146.

[16] Mckechnie, S., H. Winklhofer and C. Ennew, 2006. Applying the technology acceptance model to the online retailing of financial services. Int. J. Retail Distrib. Manage., 34: 388-410.

[17] Murray, C., 2008. Schools and social Networking: Fear or education?. Synergy Perspect. Local, 6: 8-12.

[18] Nadkarni, A., and S.G. Hofmann, 2012. Why do people use Facebook?. Personality Individual Differences, 52: 243-249.

[19] Park, E. and K.J. Kim, 2014. An integrated adoption model of mobile cloud services: Exploration of key determinants and extension of technology acceptance model. Telematics Inf., 31: 376-385.

[20] Park, N., M. Rhoads, J. Hou and K.M. Lee, 2014. Understanding the acceptance of teleconferencing systems among employees: An extension of the technology acceptance model. Comput. Hum. Behav., 39: 118-127.

[21] Rana, A., 2016. Facebook marketing and its influence on consumer buying behaviour in Kathmandu. J. Nepalese Bus. Stud., 1: 111-128.

[22] Riad, M., M.I. Jaradat, Z. Moh and S. Ziad, 2013. Applying the technology acceptance model to the introduction of mobile healthcare information systems. Int. J. Behav. Healthcare Res., 4: 123-143.

[23] Rehman, F., M. Ilyas, T. Nawaz and S. Hyder, 2014. How facebook advertising affects buying behavior of young Consumers: The moderating role of gender. Acad. Res. Int., 5: 395-404.

[24] Rehman, S., A. Bhatti, R. Mohamed and H. Ayoup, 2019. The moderating role of trust and commitment between consumer purchase intention and online shopping behavior in the context of Pakistan. J. Global Entrepreneurship Res.,

[25] Schepers, J. and M. Wetzels, 2007. A meta-analysis of the technology acceptance model: Investigating subjective norm and moderation effects. Inf. Manage., 44: 90-103.

[26] Shih, H.P., 2004. Extended technology acceptance model of Internet utilization behavior. Inf. Manage., 41: 719-729.

[27] Surendran, P., 2019. Technology acceptance Model: A survey of literature. Int. J. Bus. Social Res., 2: 175-178.

[28] Vaidhya, R., 2019. Online shopping in Nepal: Preferences and problems. J. Nepalese Bus. Stud., 12: 71-86.

[29] Venkatesh, V., 2000. Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. Inf. Syst. Res., 11: 342-365.