European Journal of Sustainable Development (2024), **13**, 4, 328-340 ISSN: 2239-5938
Doi: 10.14207/ejsd.2024.v13n4p328

Shifting Boundaries of Marketing Management in E-Commerce: A Study through TAM (Technology Acceptance Model)

By Dr.Yahya Manna

ABSTRACT:
This research tries to investigate the adoption of information technology and its constituents by the customers while making decisions to buy any product from the market utilising TAM. Many political and business related changes are being made in the context of marketing management. In the past 20 years, every domain of management has seen a transformation. Text explosion and information, information, technology and advancement in transport and communication revolutionised every domain of management marketing management which was regarded as the cost for the management is now regarded and recognised at the strategic level. The marketing managers are now enjoying high status in the corporate world. Traditionally, the field of marketing management was dependent on mass media and broadcast media, but with the advent of social media and the access of Internet to almost more than 50% of the consumers in every industry has transformed the field of marketing management.
This change was recognised by many authors and researchers around the globe and there is a need to research from customers perspective that how easily consumers are adopting technology in decision making, For the assessment Technology Acceptance Model (TAM) was utilised. The data was collected from (n=138) marketing managers, the data was analysed by the use of SPSS 22.0 for descriptive analysis and for regression analysis and structural modelling method was applied. The finding suggest the technology acceptance model is highly applicable to marketing activities and some of its constituents rank high when it comes to make a decision to buy any product by the customer. However Attitude of using does not have any direct impact on Intention to use.

Keywords: Marketing Managers, Status of Marketing managers, SEM, Lisrel 9.0., information technology, marketing activities.

1. Introduction

The transformation in the field of marketing management and this upliftment of status for marketing managers is characterised by the advancement of information, technology, and the inclusion of technology in the field of marketing activities. Traditionally, marketing management was recorded as a combined function relies upon 4Ps of marketing that is place, price, promotion, and product. This was the corporate mantra for the marketing managers to succeed in any market. They need to be very focused when it comes to product management, they need to be extra cautious while deciding the price of the product and supply chain and logistic steam has to look after that how to transport this product to the most suitable market in the world and in case the business is domestically situated, they are concerned with the transportation of the product and reaching the customer in a minimum possible time (Collins et al., 2006, Bailey, 1983). The

[1]Department of Management and Marketing, Applied College, Jazan University

promotional activities were carried out by the marketing executives and the team includes on ground level, sales executives, and at a strategic level marketing managers. The marketing managers takes decision regarding all four Ps of marketing on the feedback received by the people working on the ground Rusu et al. 2015: Wielky et al. 2017, Bechawati et al., 2003). The promotional activities were carried out by sales executives or sales. Promotion activities are being completed by introducing many new and lucrative offers to the customers. When it comes to informing the customers about the product. Print media was used initially and the product reach the customers through newspapers and magazines, but with the advancement in electronic media, 80% of the marketing activities were carried out through electronic media and television becomes its mouthpiece. Before the advancement information technology, these are the main constituents of any marketing team working in any part of the world.

However, with the advancement of information technology, technology, business world has developed quicker communication channels and over the period of time. Transportation was also made quicker with these two advancements. The birth of quick channels of communication and transportation happens and the world has witnessed the birth of social media in the field of communication, and more quicker means of transport in the field of transport management (Bhattacherjee, 2001, Devaraj et al., 2002). With this shift and transformation in the area of marketing management, the marketing activities has been changed tremendously and the new market management has built its on Internet based marketing channels. The change in communication channels and logistics transformed all forms of marketing strategies. The promotional strategies are now aligned with social media platforms, targeting millions and millions of customers through one webpage. As far as pricing strategies are concerned, now, the pricing is very transparent and the customer is aware about prices of a product offered by different companies. The contribution of logistics influence the transportation strategies in the area of marketing management. The quicker transportation channels, help companies to make available their products, before time to any market in the world. Due to the emergence of technology, it has been noted that every product revised itself in a short span of time, this change help companies to adapt and customise products according to the needs of the customers as quickly as possible. The role of technology cannot be neglected as far as the appearance and the content of the product is concerned. The world's markets are becoming increasingly interdependent and interconnected due to the rise of an open global economy, the globalization of consumer preferences, and the creation of an international commerce network. According to Lou and Cavusgil (2002), businesses should build their marketing strategies in such a global setting around three main dimensions: (1) standardization-adaptation, (2) configuration-coordination, and (3) strategic integration. In accordance with Sudharshan (1995), had advocated that the constituents of all these dimensions were changed due to advancements in technology.

This new discipline comes into existence known as e-commerce. E-commerce offers all the marketing activities and services with the comfort of home to all the customers throughout the world (Malpuru, 2011). The researchers tries to investigate the constituents of this new marketing management built on e-commerce and tries to find out the

implications of technology acceptance among customers (Rusu et al. 2015: Wielky et al. 2017), As field of marketing management has transformed into digital marketing management, therefore, there is a need to investigate the constituents and antecedent of marketing management in the field of e-commerce from consumer's perspective to aware companies about the importance and the utility of Internet based communication channels and social media in the field of marketing management. The constituents and determinant of this new information based marketing management in the context of business activities was assessed through TAM (Gefen, 2000). The constituents and determinants of traditional marketing management were different and the constituents and the pillars of marketing management in the era of Internet, social media, and new communication channels is totally different (Gefen, 2003a, 2003b). Therefore, this research tries to investigate the adoption of information technology and its constituents by the customers while making decisions to buy any product from the market.

Therefore, this research tries to find out that:

1. The change in the field of marketing management with the advent of information, technology in marketing and adoption of technology through TAM.
2. To review the literature in the field of traditional marketing management and manage and digital marketing management.
3. To explore the concepts responsible for defining adoption of digital marketing management channels in today's world.
4. To develop a scale to measure elements of TAM in the field of e-commerce.
5. To analyse the responses and interpreting the results and putting forth some recommendations for e-commerce companies and researchers pertinent in the area of Digital marketing management adoption.

2. Theoretical Background

The e-commerce industry is expanding rapidly and has gained international recognition. Its brief life had a significant impact on modern business practices; this period has been called the "information revolution" (Collins et al., 2006). The lives of both customers and dealers are undoubtedly changed by changes in these sectors. Companies will ultimately vanish if they don't adjust to the newly emerging circumstances, claim Kumar et al. (2011). The advancement of information and communication technology has brought about a transformation in business interactions. Previously, consumers were passive receivers of marketing material as they had to accommodate the information asymmetry that favoured sellers (Maglio et al., 2009). This whole scenario altered with the advent of digital media. According to Erumban et al. (2006) and Jai Arul et al. (2011), consumers may learn a great deal about items and firms with more ease than ever before by searching and verifying information.

Consequently, it is almost impossible for a successful seller to avoid actively participating in new communication channels. It's crucial to get oneself oriented in this new technological era and use these new features to your benefit as a corporation. The evolution of marketing throughout history demonstrates that some strategies and viewpoints have endured and are still relevant today. Some, however, have vanished or are

only used in certain circumstances due to the demands of customers, the competitive market, and the company's growth (Vančk et al., 2011). The article covers the transition from conventional to contemporary marketing in addition to providing a definition of marketing. Rusu et al. (2015), Wielky et al. (2017), and Tullis et al. (2013) have all made it quite clear that the digital revolution is having an impact on modern marketing, leading to a significant increase in purchasing power, a wider variety of goods and services, more information available about almost anything, easier contact, order submission and acceptance, or comparison shopping. The adoption of technology in e-commerce has been widely studied through the Technology Acceptance Model (TAM), originally introduced by Davis in 1986. Since its inception, TAM has undergone multiple revisions and extensions by various researchers to better capture the evolving technological landscape. One significant extension is TAM2, which incorporates additional variables such as subjective norms, image, job relevance, and other contextual factors. As technological advancements and business environments further evolved, Venkatesh introduced TAM3 in 2002, which added constructs like perceived enjoyment, usability, and computer anxiety, among others, to account for a more comprehensive understanding of user acceptance. Additionally, the Unified Theory of Acceptance and Use of Technology (UTAUT) model was developed to consolidate and build upon these variations, integrating a wide range of factors influencing technology adoption. Numerous studies have drawn upon these models to explore the various determinants of technological acceptance in different contexts. However, this research focuses on validating the foundational TAM framework in light of the shifting dynamics of marketing management and technological adoption among online consumers. While acknowledging the limitations of the basic TAM, this study confines its analysis to the original model to maintain clarity and precision in exploring the core constructs relevant to e-commerce adoption.

2.1. Technology Acceptance Model (TAM)

TAM is a traditional and popular model utilised for the assessment of technology adoption (Venkatesh & Davis, 2000). Many newer models developed but due to its simplicity and documentation in the literature has made this model very acceptable in research. However in some cases it lacks value statistically. Therefore, this research aims to determine the degree to which the corpus of literature already in existence represents the considerable and cumulative validity of TAM. In specifically, we conduct CB SEM analysis to synthesize the current evidence on TAM in online shopping. Through the integration of current empirical data, our goal is to get a deeper understanding of how TAM is applied to various technologies in their whole. Compared to individual research, we will be able to investigate the relationships between the TAM components with a larger sample size. We anticipate that the outcomes of this research will serve as a standard for TAM testing in the future studies. In addition to its possible theoretical contributions, CB SEM analysis on TAM is important for the practice of marketing management (Kim, 2001). Managers may more effectively intervene to increase technology adoption or use by having a better awareness of the substantive antecedents to user acceptance.

Benbasat and Zmud (1999) and Robey and Markus (1998) both pointed out that IT administration requires guidelines. In addition to using a strict methodology that is best

suited to their goals, Researchers should also provide research that is useful and consumable for practitioners. Academic research has a wide range of potential applications in practice. " research based on Theory of Reasoned Action and its ex- tensions, such as the Theory of Planned Behavior, to the study of internet based channels adoption, implementation, and use," as mentioned by Benbasat and Zmud (1999, p. 9) is an effective example. According to them, "it does become possible to synthesize this literature" if a significant amount of research has been done on a particular topic (Benbasat and Zmud, 1999, p. 9). The "research community produce cumulative, theory-based, context rich bodies of research," they advised as a result. This research appeal for "rigor and relevance" is, in a way, addressed by the present study. This paper's outline is as follows. First, we examine the TAM literature and point out significant contradictions and disparities in the research so far. Next, we provide the outcomes of our analysis based on 138 chosen sample and explain how we gathered and documented the sample of empirical data. We wrap up our study with a discussion of its shortcomings and some recommendations for more research.

3. Methodology

In management research, TAM is widely applied model for the assessment of adoption of online shopping channels in the field of marketing management. According to TRA, attitudes are influenced by beliefs, and intentions result in conduct. Accordingly, the following constructs were added by Davis (1986, 1989) to the original TAM (see Figure 1): Using Intention to use e commerce channels as the dependent variable and PEOU, PU and AU as three independent variables, Davis (1989) carried out a number of studies to verify TAM. It was discovered that there was a significant correlation between PU, PEOU, AU and IUEC in terms of self-reported current consumption as well as self-predicted future usage. Therefore, the following hypotheses were framed:

H01: Perceived usefulness (PU) has a direct and positive influence on intention to use e commerce in online shopping.
H02: Perceived ease of use (PEOU) has a direct and positive influence on intention to use e commerce in online shopping.
H03: Attitude towards usage (AU) has a direct and positive influence on intention to use e commerce in online shopping.

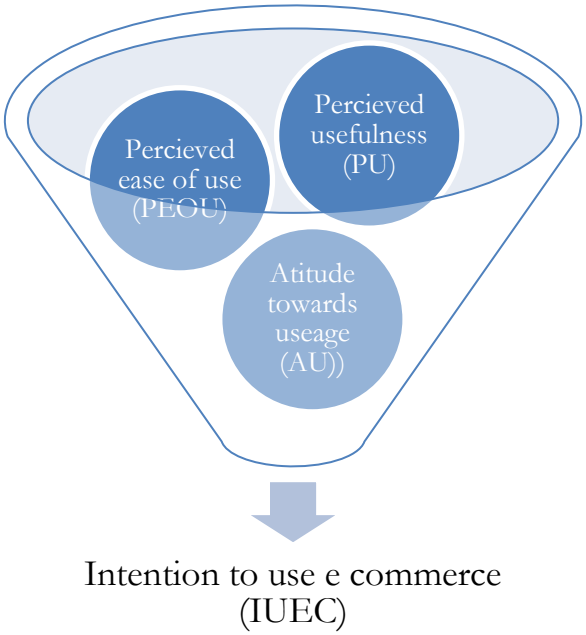

Fig 01: Conceptual model
Source: Prepared by Author

The data was collected from the customers engaged in online shopping, more than 50% of the customers belongs to a salary class and remaining respondents were either students, self-employed or freelancers. The people were chosen from the above mentioned groups as they are the earning member of the family and has the authority to make decision making while doing online shopping. Secondly, the respondent, were educated as most of the people were graduates and well verse with the Internet and use of social media accounts for online shopping.

The sample chosen is proper for the study conducted in the context of technology acceptance as stated by many authors (Klassen and Jacobs, 2006). The data was collected and preliminary analysis was carried out, which includes testing for normality of data through skewness and kurtosis (George & Mallery, 2010, Malhotra and Dash, 2012), descriptive statistics and assessment of common method bias. The results of all these assessments are given as under:

Table 01: Showing Normality of Data

Scale	**Loadings Range**	**GFI**	**Skewness**	**Kurtosis**
PU	0.70-0.71	0.97	-1.127	-0.332
PEOU	0.53-0.61	0.88	-1.282	-0.612

AU	0.57-0.63	0.92	-0.287	0.552
IUAC	0.59-0.63	0.89	-0.327	-0.412

Normality of data was insured as the skewness and kurtosis values were in acceptable ranges (refer Table 01). The acceptable skewness and kurtosis ranges for a normal distribution should be between -2 and +2. The mean values and standard division of the data represent no significant differences in responses given by the respondents. The assessment of common method bias through principal component analysis was carried out, Harmans single factor test ensured that 10 factors emerged 59.329 variance reported and it was insured that there is a proper variance in the data. Majority of the responses were not loaded on a single or couple of factors as shown in Table 02. In this manner common method bias was ensured in the research. After the preliminary testing measurement model was assessed.

Table 02: Showing Total Variance through principal component Analysis

Total Variance Explained									
Components	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	3.960	13.199	13.199	3.960	13.199	13.199	2.902	9.675	9.675
2	3.254	10.848	24.047	3.254	10.848	24.047	2.889	9.631	19.306
3	1.735	5.784	29.831	1.735	5.784	29.831	1.863	6.210	25.516
4	1.627	5.423	35.254	1.627	5.423	35.254	1.661	5.537	31.053
5	1.310	4.367	39.622	1.310	4.367	39.622	1.600	5.334	36.387
6	1.295	4.315	43.937	1.295	4.315	43.937	1.570	5.234	41.621
7	1.261	4.202	48.139	1.261	4.202	48.139	1.552	5.172	46.794
8	1.161	3.870	52.008	1.161	3.870	52.008	1.329	4.429	51.223
9	1.133	3.778	55.786	1.133	3.778	55.786	1.275	4.251	55.474
10	1.063	3.543	59.329	1.063	3.543	59.329	1.156	3.855	59.329
Extraction Method: Principal Component Analysis.									

4. Results and Discussion

4.1. Measurement model Assessment

In the assessment of measurement model unidimensionality, reliability and validity of the data was ensured. For the assessment of unidimensionality, confirmatory factory analysis (CFA) was carried out so that is, it can be ensured that the items framed in the questionnaire should measure the same construct for which they are supposed to be framed. This can be done on the basis of factor loadings. The factor loading value should be greater than 0.4 of each item to be loaded on its assigned construct. As shown in figure

02, all the items were properly loaded on their assigned constructs. In this manner, unidimensionality was ensured.

4.1.1. Reliability analysis

The reliability of the scale ensures that the measurement scales were reliable and their measurement tendency does not very by changing the context and respondents of the study. For the assessment of reliability, the popular method of calculating Cronbach's alpha was used. The Cronbach's alpha values should be greater than 0.7 then only reliability can be ensured. Apart from this construct reliability and variance extracted were also calculated and the values were in acceptable ranges. Therefore, it can be safely concluded that issues regarding reliability of the scales was not detected. The measures regarding chrome alpha constructor liability, and various extracted were given as under:

Table 03: Showing Measures of Reliabilities

Construct	Cronbach	CR	VE	VIF
PU	0.7	0.6	0.5	.987
PEOU	0.8	0.7	0.7	.956
AU	0.7	0.8	0.6	.987
IUEC	0.7	0.7	0.7	.934

4.1.2. Validity analysis

Validity refers to the tendency of the scale to be valid in the chosen research context. As the items were identified from the literature, it may be possible that these items become outdated in the research context. Therefore, validity was ensured. In this research, three kinds of validity was ensured. Convergent validity, content validity and discriminant validity. The content validity of the research instrument was ascertained by dividing the research instrument into sections, moreover, the language of the questionnaire was ensured to depict details about the research concepts which are being used in the research, ambiguity issues were not detected in the questionnaire. After the refinement of the questionnaire, the questionnaire was given to the academics and researchers and the comments were collected about the language and measurement technique used in the questionnaire. The comments for incorporated in the questionnaire and the content validity was ensured. This technique was followed in accordance with Hair et al., (2017). However, convergent validity can be ascertained in many ways. It can be a certain through the values and NFI values, the values should be more than 1.96 for a scale to be convergent. The results are given as under:

Table 04: Showing Measures of Convergent validity.

Construct	NFI	T values
PU	0.9	2.98-12.22
PEOU	0.9	8.99- 11.33
AU	0.9	2.45-4.44
IUEC	0.9	10.88-12.33

Discriminate and convergent validities were ascertained through inter item correlation technique given by Fornell and Larker, (1981). They advocated that if the mean or ranges of inter item corelation was found to be moderate. Discriminant validity can be ensured

for a particular research scale. The results of the validity analysis are given in Table 05 as below.

Table 05: Showing Measures of Convergent validity.

Construct	PU	PEOU	AU	IUEC
PU	1			
PEOU	0.833	1		
AU	0.732	0.345	1	
IUEC	0.745	0.452	0.546	1

4.2. Structural model Assessment

Analysing the measures of TAM on intention to use online channels for shopping was the goal of the current study. The goal of the study was to evaluate each research scale's influence on acceptance of technology among different groups of population. To gather primary data, a research instrument based on the study components was created following a thorough examination of the literature. The SEM capabilities of LISREL 8.80 were used to analyse the gathered data. After the assessment of measurement model, Structural model was assessed. Structural model with all independent and dependent variables was assessed. The findings pertaining to each construct were provided below in Fig 03.

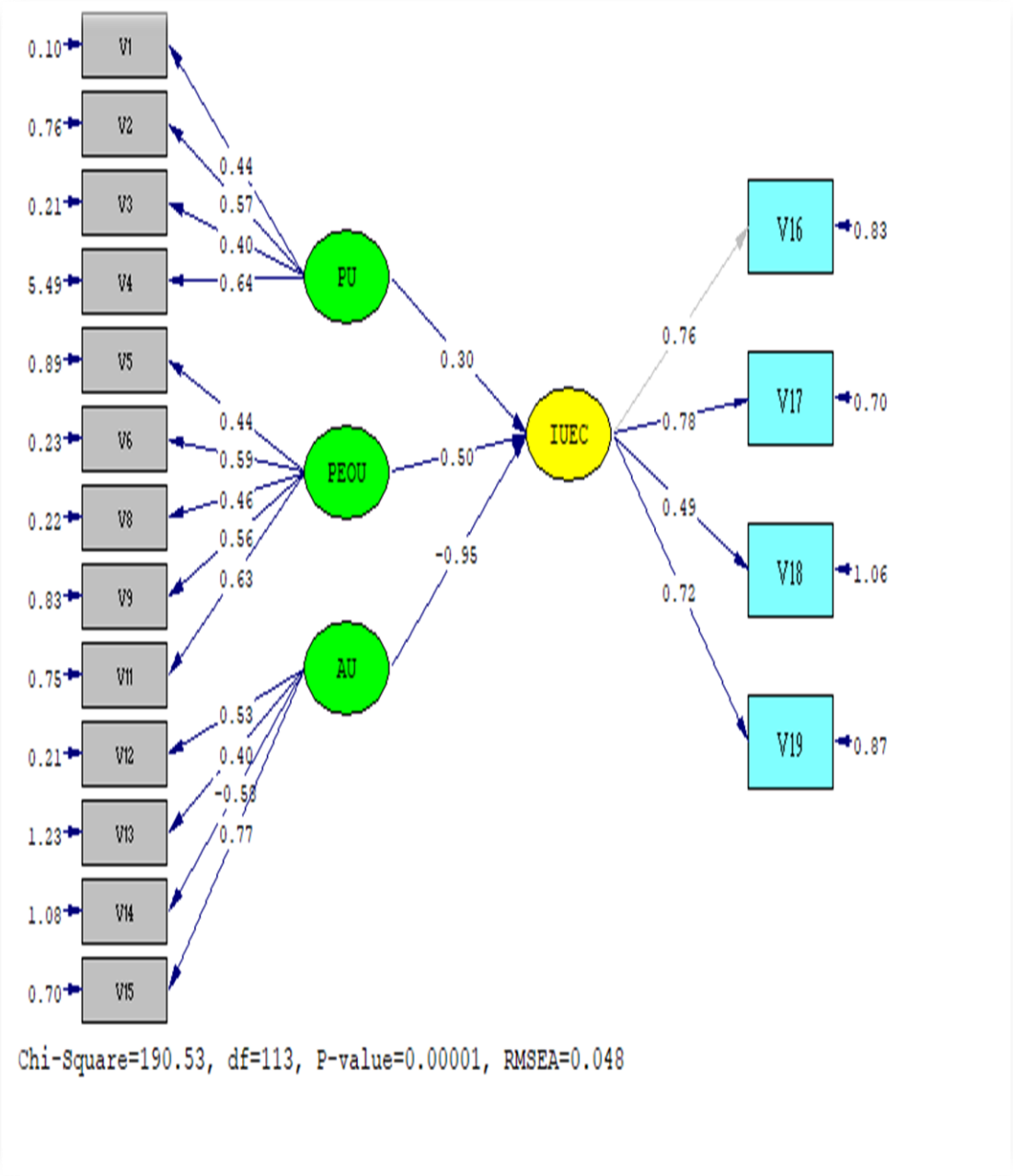

Fig 02: Showing Structural Model

The estimates of the structural model shows significant relationship between PU and PEOU (0.30 and 0.50), Thus H01 and H02 were accepted. However the estimate from AU to IUEC was found to be negative (-0.95) and thus H03 was not accepted.

6. Conclusion, Implications for future research

This research was conducted to assess the shifting boundaries or extended antecedents of marketing management in the era of e commerce (Koch, et al., 2011). Advancement in Information technology has transformed every domain of business (Ahmad, 2019). This advancement in marketing management has impacted the shopping behaviour of many consumers especially in the context of e commerce. This study utilises TAM for this assessment. The measurement scales were developed on the foundations of TAM (Davis, 1987). Independent variables i.e. PU, PEOU and AU were hypothesized to influence IUEC.

Regarding this assessment three Hypotheses were framed. H01 was accepted, which implies perceived usefulness (PU) has a direct influence on intention to use e commerce (IUEC) channels while purchasing, this finding corroborates with many researchers (McKinney et al., 2002; Otto et al., 2000; Sheppard et al, 1988). H02 was also accepted, which implies perceived ease of use (PEOU) has a direct influence on intention to use e commerce channels (IUEC) while purchasing, this finding corroborates with many researchers (Struab et al., 1995; Szaina, 1996; Szymanski et al., 2000). However, H03 was not accepted, which implies Attitude of use does not has a direct influence on intention to use e commerce (IUEC) channels while purchasing, this finding also corroborates with many researchers (Venkatesh and Morris, 2003; Woodroof et al., 1999; Warshaw et al., 1985).

The findings of the research suggest that perceived usefulness and perceive ease of use are important, while taking decisions regarding online purchase. However, attitude of usage was found to be non-significant as far as online decision taking was concerned. The research also highlights that perceived is of use influence significantly in adoption of technology by the customers. In this context, it becomes very important that companies should emphasise on designing user friendly channels for purchasing, comparing, payment, after sale service and feedback portals. The website design should be simple and unambiguous, the features regarding use of use should be introduced in all the purchasing portals. Secondly, a relatively less important factor was found to be perceived usefulness, this factor can be highlighted through the introduction of the demo videos showing utility of the product in promotional activities and on the web portal. To highlight the importance of the product usage, even a 30 seconds reel can be used as a promotional tool. This very simplify, the user experience and digital engagement will be enhanced.

The study employed technology acceptance model (TAM), this model was tested through structural equation modelling (SEM). To measure the constructs of TAM, a separate scale was developed for each construct. The develop scale more than refined and can be used for future researches. Secondly, by following the footsteps of this Research, the future researchers can explore the measures of TAM2, TAM3 and UTAUT model. Thirdly, the model developed in this study was applied on the respondents adopting technology in the field of e-commerce. However, the data from the respondents using financial technology can also be assisted in future researches. Fourthly. This research used single cross-sectional design, however, longitudinal research design will be more suitable for the assessment of change in the field of marketing management with the advent of information technology.

References

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice Hall.

Bailey, J. E., & Pearson, S. W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. Management Science, 29, 530-545.

Bechawati, N. N., & Xia, L. (2003). Do computers sweat? The impact of perceived effort of online decision aids on consumer's satisfaction with the decision process. Journal of Consumer Psychology, 13, 139-148.

Bhattacherjee, A. (2001). An empirical analysis of the antecedents of electronic commerce service continuance. Decision Support Systems, 32, 201-214.
Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13, 318-340.

Collins, C. J. and Smith K. G. (2006) "Information Technology, Workplace Organization,

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35, 982-1003.

Devaraj, S., Fan, M., & Kohli, R. (2002). Antecedents of B2C channel satisfaction and preference: Validating e-commerce metrics. Information Systems Research, 13, 316-333.

Doll, W. J., & Torkzadeh, G. (1988). The measurement of end-user computing satisfaction. MIS Quarterly, 12, 258-274.

Erumban, A. A. and Jong, S. B. (2006) "Cross-country differences in ICT adoption: A consequence of Culture?", *Journal of World Business*, Vol. 41, No. 4, pp. 302-314. ISSN 1090-9516. DOI 10.1016/j.jwb.2006.08.005.

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison- Wesley.

Gefen, D., & Straub, D. W. (2000). The relative importance of perceived ease of use in IS adoption: A study of e-commerce adoption. Journal of the Association for Information Systems, 1, 8.

Gefen, D., Karahanna, E., & Straub, D. W. (2003a). Inexperience and experience with online stores: The importance of tam and trust. IEEE Transactions on Engineering Management, 50, 307-321.

Gefen, D., Karahanna, E., & Straub, D. W. (2003b). Trust and TAM in online shopping: an integrated model. MIS Quarterly, 27, 51-90. 1006 *Rima Fayad and David Paper / Procedia Economics and Finance 26 (2015) 1000 – 1006*

J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. Journal of Consumer Research, 15, 325-343.

Jai Arul, G., Sanjeev, C. and Suyambulingom, C. (2011) "Implementation of Data Security in Cloud Computing", *International Journal of P2P Network Trends and Technology*, Vol. 1, No.1. pp. 112-127. ISSN 2249-2615.

Kim, S. Y., & Lim, Y. J. (2001). Consumer's perceived importance of and satisfaction with Internet shopping. Electronic Markets, 11, 148-154.

Koch, S., Toker, A., Brulez, P. (2011). Extending the TAM with perceived community characteristics. Information Research, 16, 2. Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behavior. Information Systems Research, 13, 205-224.

Kumar, V., Batista, L. and Maull, R. (2011) "The Impact of Operations Performance on Customer Loyalty", *Service Science*, Vol. 3, No. 2, pp. 158-171. ISSN 2164-3970. DOI 10.1287/serv.3.2.158.

Maglio, P. P., Vargo, S. L., Caswell, N. and Spohrer, J. (2009) "The service systemis the basic abstraction of the service science", *Information Systems and e-Business Management,* Vol. 7, pp. 395-406. ISSN 1617-9846. DOI 10.1007/s10257-008-0105-1.

McKinney, V., Yoon, K., & Zahedi, F. (2002). The measurement of web-customer satisfaction: An expectation and disconfirmation approach. Information Systems Research, 13, 296-315.

Miller, K. W., Voas, J. and Hurlburt, G. F. (2012) "BYOD: Security and Privacy Considerations",*IT Professional*, Vol. 14, No. 5, pp. 53-55. E-ISSN 1941-045X, ISSN 1520-9202.DOI 10.1109/MITP.2012.93.

Mulpuru, S. (2011). Retrieved March 30, 2015, from http://www.forrester.com/

Otto, J. R., Najdawi, M. K., & Caron, K. M. (2000). Web-user satisfaction: An exploratory study. Journal of End User Computing, 12, 3-10. Sheppard, B. H., Hartwick,

Rao, N. H. (2007) "A Framework for Implementing Information and Communication Technologies in Agricultural Development in India", *Technological Forecasting and Social Change*, Vol. 74, No. 4, pp. 491-518. ISSN 0040-1625. DOI 10.1016/j.techfore.2006.02.002.

Rusu, C., Rusu, V., Roncagliolo, S. and González, C. (2015) "Usability and User Experience: What Should We Care About?", *International Journal of Information Technologies and Systems Approach*, Vol. 8, No. 2, pp. 1-12. ISSN 1935-570X. DOI 10.4018/IJITSA.2015070101.

Straub, D. W., Limayem, M., & Karahanna, E. (1995). Measuring system usage implications for IS theory testing. Management Science, 41, 1328-1342.

Szajna, B. (1996). Empirical evaluation of the revised technology acceptance model. Management Science, 42, 85-92

Szymanski, D., & Hise, R. (2000). E-satisfaction: An initial examination. Journal of Retailing, 76, 309-322.

Tullis, T. and Albert, B. (2013) "*Measuring the User Experience*", Morgan Kaufmann, 320 p. ISBN-13 978-0124157811.

Vaněk, J., Jarolímek, J. and Šimek, P. (2009) "Information Services and ICT Development in Agriculture of the Czech Republic", *AGRIS on-line Papers in Economics and Informatics*, Vol. 1, No. 1, pp. 47-52. ISSN 1804-1930.

Vaněk, J., Jarolímek, J. and Vogeltanzová, T. (2011) "Information and Communication Technologies for Regional Development in the Czech Republic – Broadband Connectivity in Rural Areas", *AGRIS on-line Papers in Economics and Informatics*, Vol. 3, No. 3, pp. 67-76. ISSN 1804-1930.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Towards a unified view. MIS Quarterly, 27, 425-478. Vol. 49, No. 6, pp. 544-560. ISSN 1948-0989.

Warshaw, P. R., & Davis, F. D. (1985). Disentangling behavioral intention and behavioral expectation. Journal of Experimental Social Psychology, 21, 213-228.

Woodroof, J. B., & Kasper, G. M. (1998). A conceptual development of process and outcome user satisfaction. Information Resources Management Journal, 11, 37-43.

Zairi, M. and Sinclair, D. (1995) "Business Process Re-engineering and Process Management", *Business Process Management Journal*, Vol. 1, No. 1, pp. 161-173. ISSN 1463-7154. DOI 10.1108/14637159510798248.