

An investigation into the antecedents and outcomes of the m-shopping experience

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Keywords

M-commerce, M-shopping, online retail, continuance to m-shop

Abstract

M-shopping is growing in popularity amongst consumers and strong growth in m-shopping has been projected for the foreseeable future. This expected growth and popularity cause firms to adopt m-shopping as a new retail platform and allow them to sell products and communicate with the consumer anytime anywhere on mobile devices. However, what makes customers to continue m-shopping is not fully understood yet. The major objective of the paper is to study the antecedents that influence customers' decision to continue m-shopping. The sample studied consisted of 486 experienced respondents that shop via their mobile phones on reference websites. Structural equation modelling was used to test the various relationships between the antecedents and continuance of m-shopping. Thirteen relationships were tested in the model and all, except one, were significant. The value of the study for managers is the identification of the antecedents to be managed to ensure customer's continued m-shopping.

Introduction

The past decade has seen substantial growth in the use and application of the Internet (Vink, Toos, Beijsterveldt, Huppertz & Boomsma, 2015). With the Internet's growth, market opportunities for mobile business have transpired, where many web service providers have started to expand their online operations from the traditional personal computer-based environment to the mobile-based environment (Yang, Wang & Wei, 2014). Just as the Internet provided pre-conditions for the emergence of e-commerce (electronic commerce), so mobile devices have created the take-off for m-commerce (mobile commerce) through wireless connections and portable handsets (Agrebi & Jallais, 2015). With the proliferation of m-commerce, mobile shopping (m-shopping) has become a significant successor, whereby consumers use mobile phones in the shopping process to access retailers websites and conduct transactions and price comparisons (Holmes, Byrne & Rowley, 2013). Given the aforementioned realities, the researchers studied a range of antecedents that enable us explain customers' continued m-shopping.

Antecedents and outcomes of m-shopping

Table 1 comprises of the antecedents and outcomes of the m-shopping experience, or stated otherwise, the dimensions that may contribute to the use of mobile phones by individuals to conduct transactions on online platforms. The antecedents and outcomes of m-shopping listed in Table 1 were identified as the most prevalent guiding the recent m-shopping research efforts. A comprehensive literature review was undertaken for the study and several theories, listed below, were helpful in guiding our understanding of the antecedents and outcomes of m-shopping:

- Theory of Reasoned Action
- Theory of Planned Behaviour
- Technology Acceptance Model (and its later versions namely Tam 2 and 3)
- Technology Transfer Theory
- Diffusion of Innovations Theory
- Technology Readiness Index
- Index to Show the Likelihood to Embrace New Technology
- Social Exchange Theory
- Utility Maximisation Theory
- Status Quo Bias

Table 1 uses definitions from current information systems and marketing literature. These definitions were adapted, where necessary, to fit the domain of m-shopping. Figure 1 displays the proposed model, which illustrates the relationships predicted between each construct.

Construct	Definition
Confirmation	Users' perception of the congruence between expectation of m-shopping use and its actual performance (Bhattacharjee, 2001).
Customer satisfaction	Customer satisfaction can be seen as an emotional response occurring post-purchase on mobile platforms (Agrebi&Jallais, 2015).
Hedonic value	Value that results from pleasure, fun, fantasy and activities that involve playfulness (Holbrook & Hirschman, 1982).
Innovativeness	An individual personality variable that reflects a favourable attitude toward the use of new technologies, and is an innate characteristic of that individual (Rogers, 2010).
Continuance of m-shopping	A consumers' intention to continue using mobile phones to transact online (Bhattacharje, 2001).
Perceived ease of use	The degree to which a person believes that using m-shopping would be limited from effort (Davis et al. 1989; Zarpou et al., 2012).
Perceived usefulness	The degree to which a person believes using mobile services would enhance his or her job performance (Zarpouet al., 2012).
Self-efficacy	An individual's personal evaluation of their capability to use a system, which emphasizes what an individual can achieve in the future regardless of what they have done in the past (Chen et al., 2011).
Subjective norm	An individual's perception of whether people who are important to that individual think the behaviours should or should not be performed (Fishbein&Ajzen, 1980).
Trust	Trust in e-commerce is the belief that allows consumers to willingly become vulnerable to online retailers after having considered the retailers' characteristics, where it can be assumed that customers expect firms to fulfil their obligations in the transaction process (Pavlou, 2003).
Utilitarian value	Utilitarian value results from the completion of task-orientated activities and involves rational and functional decision making (Babin et al., 1994).

Table 1: Antecedents and outcomes of m-shopping

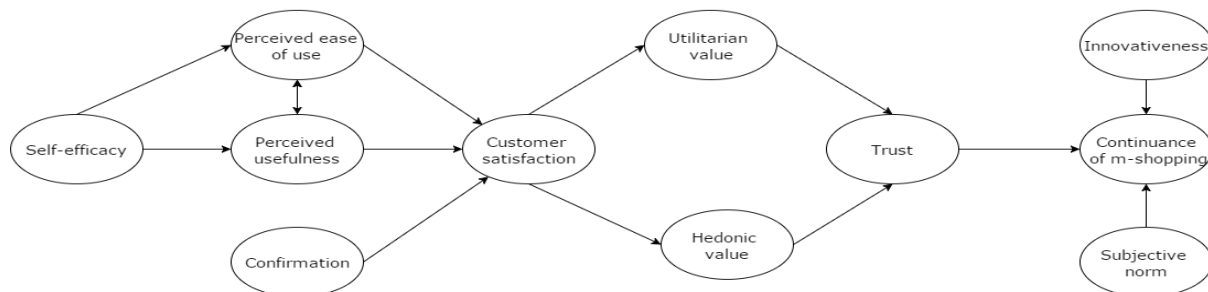


Fig. 1 Proposed model

Methodology

The target population can be classified as any individual who owns a mobile phone that can access the Internet and who has purchased goods or services with that mobile phone on a mobile reference site. It is important to note this study excludes the use of tablet devices. Moreover, this study excludes the purchasing of goods and services using Apps on mobile phones. Thus, the target population only accounts for individuals who have used mobile phones to buy items through mobile reference sites.

For the study, the collection of data was done by recruiting respondents through referral (Arnold & Reynolds, 2003; Brocato, Voorhees & Baker, 2012), where individuals were asked to provide contact information for other potential respondents who qualify within the target population of this study and would be willing to fill out a questionnaire. Referral guidelines were given to the recruiters, in which it was stated that to only select those individuals who are within the target population and to provide their name, email and or phone number so that the researchers could get in contact with them. The initial list of respondents was pre-screened by the researcher to ensure that the sample would include respondents that met the aforementioned criteria. After the screening was complete, the list was used to send out an email to potential respondents. The email included a brief overview of the purposes of the study, as well as a link to an online questionnaire on SurveyMonkey. Thus, data was collected by the means of an online survey.

This study had a total of 1059 respondents. Of the 1059 respondents who participated in this study, some responses were omitted based on disqualification from the survey. Moreover, some respondents did not answer the survey fully, where the researcher sought to only use fully completed surveys for accuracy in result interpretation. Additionally, responses that had a variance below 0.7 were removed based on Hair et al.'s (2006) recommendation. After removing the unsuitable responses the sample consisted of 486 fully completed responses.

Statistical analysis

Measurement model

The measurement model was assessed by means of confirmatory factor analysis (CFA), which allowed the researcher to analyse the goodness-of-fit. The Santorra-Bentler Scaled Chi-square, df, χ^2/df , RMSEA, CFI and NFI are reported in Table 2. As can be observed from Table 2, the RMSEA for the measurement model was 0.068, which is below the cut-off point of 0.08, which is an acceptable model fit. Moreover, the CFI loaded at 0.98, and the NFI loaded at 0.98, which further represents acceptable fit. The χ^2/df is 3.23 which is acceptable as it fell within the range of 2.0 to 5.0, thus further supporting the model fit.

Model fit indices	Results of measurement model
Santorra-Bentler Scaled Chi-square	2736.74
df	847
χ^2/df	3.23
RMSEA	0.068
CFI	0.98
NFI	0.98

Table 2: Model fit indices of the measurement model

The composite reliability and the Average Variance Extracted (AVE) were calculated using the standardised item loadings and error variance. All the constructs' composite reliability were above 0.7, and AVE values were above 0.5 (Hair et al., 2006). As shown in Table 3, the measurement model met the aforementioned criteria and was thus deemed suitable for further assessment.

Construct	Composite reliability	AVE
Confirmation	0.868	0.642
Continuance	0.876	0.639
Customer satisfaction	0.862	0.611
Hedonic value	0.885	0.658
Innovativeness	0.830	0.551
Perceived ease of use	0.810	0.529
Perceived usefulness	0.810	0.517
Self-efficacy	0.832	0.553
Subjective norm	0.837	0.563
Trust	0.890	0.670
Utilitarian value	0.803	0.505

Table 3: Construct reliability and validity of the measurement model

Structural model

Once the measurement model was undertaken, the structural paths were indicated between latent variables based on theoretical hypotheses stipulated from the literature. As can be seen in Table 4, all t-values loaded in a positive significant direction, except perceived ease of use to customer satisfaction.

Path	t-value	Significance
Self-efficacy -> Perceived ease of use	12.51	**
Self-efficacy -> Perceived usefulness	13.74	**
Perceived ease of use -> Perceived usefulness	3.13	*
Perceived ease of use -> Customer satisfaction	-0.56	N.s.
Perceived usefulness -> Customer satisfaction	3.21	*
Confirmation -> Customer satisfaction	11.95	**
Customer satisfaction -> Utilitarian value	26.52	**
Customer satisfaction -> Hedonic value	32.14	**
Utilitarian value -> Trust	3.67	**
Hedonic value -> Trust	7.23	**
Trust -> Continuance of m-shopping	7.44	**
Subjective norm -> Continuance of m-shopping	6.07	**
Innovativeness -> Continuance of m-shopping	3.71	**

Table 4: Empirical results of the structural model

Significance level:**: $p < 0.001$ * : $p < 0.01$ N.s.: Not significant

The Santorra-Bentler Scaled Chi-square, df, χ^2/df , RMSEA, CFI and NFI are reported in Table 5. The RMSEA for the structural model was 0.075, which is below the cut-off point of 0.08 to qualify the model as acceptable fit. Moreover, the CFI loaded at 0.98, and the NFI loaded at 0.97, which further represents good fit. The χ^2/df was 3.74.

Model fit indices	Results of measurement model
Santorra-Bentler Scaled Chi-square	3303.29
df	883
χ^2/df	3.74
RMSEA	0.075
CFI	0.98
NFI	0.97

Table 5: Model fit indices for the structural model

5. Managerial implications of the study

Table 6 displays the hypotheses that were formulated in the literature review and were tested in the primary research phase of this study using structural equation modelling. As shown in Table 6, all hypotheses were accepted except H4.

Hypotheses	Hypothesis Accepted/Rejected
H1: Self-efficacy is expected to positively influence the perceived ease of use of m-shopping.	Accepted
H2: Self-efficacy is expected to positively influence the perceived usefulness of m-shopping.	Accepted
H3: Perceived ease of use is expected to positively influence perceived usefulness.	Accepted
H4: Perceived ease of use will positively influence customer satisfaction in m-shopping	Rejected
H5: Perceived usefulness is expected to positively influence customer satisfaction in m-shopping.	Accepted
H6: Confirmation is expected to positively influence customer satisfaction	Accepted
H7: Customer satisfaction is expected to positively influence utilitarian value	Accepted
H8: Customer satisfaction is expected to positively influence hedonic value	Accepted
H9: Utilitarian value is expected to positively influence trust	Accepted
H10: Hedonic value is expected to positively influence trust	Accepted
H11: Trust will positively influence the intention to use m-shopping.	Accepted
H12: Subjective norm is expected to positively influence continuance of mobile shopping.	Accepted
H13: Innovativeness is expected to positively influence the intention to re-use m-shopping.	Accepted

Table 6: Summary of the hypotheses tested in the structural model

The structural model of this study shows the relationships between the antecedents and continued m-shopping. The aforementioned is important to firms as it means that various antecedents or outcomes should be considered when creating and nurturing the m-shopping experience for customers. Each outcome contributes to the final continuance of m-shopping. The continuance of m-shopping may generate greater revenue streams for firms, and is thus considered the ultimate outcome. The insignificant relationship between perceived ease of use and customer satisfaction indicates that perceived ease of use has an inconsequential effect on customer satisfaction. The reason for this relationship in the structural model may be explained by the m-shopping experience of the respondents that participated in this study. Experienced m-shoppers are already experienced users of mobile phones to conduct m-shopping activities and thus the ease at which they do it is irrelevant to how satisfied they feel with m-shopping purchases, as they are already proficient and/or learnt with regard to the navigation processes, payment processes and the general m-shopping interface.

The model assists both researchers and firms in understanding the holistic m-shopping experience, as paths between antecedents and outcomes illustrate important synergy in that each relationship is beneficial to the next. Moreover, the structural model generated in this study helps to better explain m-shoppers behaviour, and illustrates causal relations between constructs, allowing researchers and firms to understand reasons as to why m-shoppers would continue m-shopping.

References

- Agrebi, S., & Jallais, J., 2015. Explain the Intention to Use Smartphones for Mobile Shopping. *Journal of Retailing and Consumers Services*, 22, 16-23.
- Ajzen, I., 1991. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Ajzen, I., & Fishbein, M., 1980. *Understanding Attitudes and Predicting Social Behaviour*. Englewood Cliffs, NJ: Prentice Hall.
- Arnold, M.J., & Reynolds, K.E., 2003. Hedonic Shopping Motivations. *Journal of Retailing*, 79(2), 77-95.
- Babin, B.J., Darden, W.R., & Griffin, M., 1994. Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value. *Journal of Consumer Research*, 20(4), 644-656.
- Bhattacharjee, A., 2001. Understanding Information Systems Continuance: An Expectation Confirmation Model. *MIS Quarterly*, 25(3), 351-370.
- Brocato, E.D., Voorhees, C.M., & Baker, J., 2012. Understanding the Influence of Cues from Other Customers in the Service Experience: A Scale Development and Validation. *Journal of Retailing*, 88(3), 384-398.
- Chen, K., Chen, J.V. & Yen, D.C., 2011. Dimensions of Self-Efficacy in the Study of Smartphone Acceptance. *Computer Standards & Interfaces*, 33(4), 422-431.
- Davis, F.D., Bagozzi, R.P., & Warshaw, P.R., 1989. User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982-1003.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L., 2006. *Multivariate Data Analysis* (6th Ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Holbrook, M.B., & Hirschman, E.C., 1982. The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun. *Journal of Consumer Research*, 9(2), 32-140.
- Holmes, A., Byrne, A., & Rowley, J., 2013. Mobile Shopping Behaviour: Insights into Attitudes, Shopping Process Involvement and Location. *International Journal of Retail & Distribution Management*, 42(1), 25-39.
- Pavlou, P.A., 2003. Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*, 7(3), 101-134.
- Rogers, E.M., 2010. *Diffusion of Innovations* (4th Ed.). Free Press, New York.
- Vink, J.M., Beijsterveldt, T.C., Huppertz, C., Bartels, M., & Boomsma, D.I., 2015. Heritability of Compulsive Internet Use in Adolescents. *Addiction Biology* (Published online 13 January 2015; DOI:10.1111/adb.12218).
- Yang, S., Wang, Y., & Wei, J., 2014. Integration and Consistency between Web and Mobile Services. *Industrial Management & Data Systems*, 114(8), 1246-1269.
- Zarpou, T., Saprikis, V., Markos, A., & Vlachopoulou, M., 2012. Modeling Users' Acceptance of Mobile Services. *Electronic Commerce Research*, 12(2), 225-248.
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