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Article

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MARKETING | RESEARCH ARTICLE

Keep customers coming back: Enhancing value and satisfaction in a mobile shopping application context

Naquita Fernandes^{1*} and Catherine Barfknecht¹

Abstract: Mobile shopping applications have become a popular channel to reach the omnipresent consumer of today. However, the market space has become highly competitive and as a consequence, cultivating repurchase behavior has become pivotal to retain market share and boost sustainability. While the literature regarding initial purchase via a mobile shopping application is well developed, knowledge of how to foster repurchase behavior in this context is still scarce. In order to address the gap in extant literature, this research drew on the perceived value theory as well as technology acceptance and continued usage literature to conceptualize how repurchase intentions can be elicited. An online survey was administered to a total of 245 consumers who had previously shopped via a mobile shopping application, using a non-probability convenience sampling approach. Partial least squares structural equation modelling was used to test cause-effect relationships in the model. The results verify the importance of primarily designing an entertaining and easy-to-use mobile shopping experience, followed by integrating atmospherics of trust and informative content. The amalgamation of these atmospherics lead to a value-infused end-user experience, enhancing user satisfaction. Lastly, the findings confirm that the satisfaction derived from the use of



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ABOUT THE AUTHORS

Naquita Achadinha Fernandes is a lecturer in the Department of Business Management at the University of the Free State in Bloemfontein, South Africa. With eight years of marketing and e-commerce teaching experience at undergraduate and post-graduate levels, she has developed a passion for business and business-related education. She is currently busy with her PhD in the field of consumer behaviour and digital marketing. Her work has appeared in the *Behaviour & Information Technology Journal* as well as in various papers presented at conferences such as ANZMAC, SAIMS and ICED.

Catherine Barfknecht was awarded with the Department of Business Management's prize of "Best Post-Graduate Research Study" in 2018, under the supervision of Naquita Achadinha Fernandes. Since then, she has been working on research articles in the field of mobile shopping applications, while managing her teaching career in China.

PUBLIC INTEREST STATEMENT

Consumers are resorting to mobile applications to simplify their lives; whether if be for socialization, productivity or shopping. Research has revealed that in order for a shopping-based mobile application to be profitable, the secret lies in ensuring customers return to purchase. Hence, fostering repurchase intent is the key to sustained success in today's competitive landscape. A survey was issued to 245 individuals who had previously conducted a purchase via any mobile shopping application, to discover what would drive them to repurchase. The findings reveal the importance of fostering perceived value. Consumers who fail to experience value from their initial shopping experience, are unlikely to conduct future transactions. To enhance perceived value, a mobile shopping application should be entertaining and easy to use; coupled with atmospherics of trust and a balanced amount of informative content. In creating a value-infused end-user experience, satisfaction

a mobile shopping application is a crucial determinant of repurchase intent. In summation, this study provides novel insights in terms of the context-specific nature of perceived value and its relation to satisfaction. Furthermore, the scarcity of research regarding the facilitation of repurchase behavior in a mobile shopping application context, is addressed.

Subjects: Consumer Behaviour; Internet / Digital Marketing / e-Marketing; Relationship Marketing; Retail Marketing

Keywords: mobile shopping applications; digital atmospherics; hedonic value; utilitarian value; digital satisfaction; repurchase intention

1. Introduction

The invention of mobile technology, specifically mobile (smart)phones, has revolutionized not only business practices, but also consumer behavior (Linnhoff & Smith, 2017). Consumers are now empowered to communicate, browse and shop across various channels and touchpoints, whenever they please (Chaffey & Smith, 2017). Research reveals that consumers tend to use mobile-based touchpoints, such as mobile shopping applications and mobile websites, interchangeably when searching for product information or making product purchases (Kumar & Vieira, 2018). Despite the fact that, at face value, mobile responsive websites and mobile shopping applications may look very similar, they are in fact two distinct mediums (Ciligot, 2019). Essentially, a responsive mobile website is a modified version of a regular website, fit for a mobile device. In juxtaposition, a mobile shopping application offers users a more intuitive user interface, empowering users to customize the functionality of the application to suit their needs and, in turn, creating a seamless user experience (Ciligot, 2019).

Consequently, mobile shopping applications are growing in traction as consumers perceive them to be easier to navigate and simpler to purchase from in comparison to mobile responsive websites (Kumar & Vieira, 2018). A new platform has thus come to the forefront to assist retailers to better access their target audience. As a result, website-based shopping platforms no longer serve as the only option a business can pursue. However, the implementation of a mobile shopping application is considered to be more cost intensive than that of a responsive mobile site (Ciligot, 2019). In order for a mobile shopping application to be deemed successful, profitable, and with an enhanced return-of-investment (ROI), repeat buying is essential (Shankar et al., 2016; Singh, 2017; Zhao et al., 2019). This may sound simple to attain; however, on average, a consumer's shopping session contains at least six browsing visits to a mobile shopping application before he or she completes a single purchase transaction (Kumar & Vieira, 2018). Given the sheer number of digital applications and avenues available in the market, companies face a daunting task of ensuring consumers keep purchasing from their mobile shopping applications instead of switching to competing offers, despite the appeal of new entrants (Shankar et al., 2016).

The crux of re-purchase intentions stems from customer satisfaction (Barutçu et al., 2015; Hsiao et al., 2016; Liao et al., 2017) considering that customers who are not entirely satisfied with their purchase experience (in this case via the mobile shopping application), may choose to shop elsewhere (Barutçu et al., 2015). As a result, businesses are experiencing immense pressure to satisfy consumers and foster repurchase behavior within the mobile shopping application context (Bedgood, 2015).

Findings from various research studies solidify the influential role that perceived value has on enhancing customer satisfaction, particularly in the context of e-commerce websites and mobile responsive sites (Adapa et al., 2020; Vijay et al., 2017; Zhao & Balagué, 2015). Dovaliene et al. (2015) further verify the context-specific nature of customers' perceived value and its relation to satisfaction. As a result, value creation is subject to the context, and creating value for consumers does not derive from a "one-size-fits-all" approach. Inferring mobile shopping application behavior

from research in online behavior (web and mobile sites in particular) could result in misleading information (Dovaliene et al., 2015). The gap in knowledge regarding mobile shopping application behavior in particular was the impetus for the current research.

This study therefore proposed to investigate how value and, in turn, satisfaction can be created in a mobile shopping application context and whether this could enhance repurchase intent. These considerations provided the motivation for the current study, which intended to address the following research question (RQ):

RQ (1) What are the causes and effects of value creation in a mobile shopping application context?

The extended technology acceptance model (TAM), specifically the TAM3 framework by Venkatesh & Bala (2008), as well as the theory of perceived value served as the theoretical foundation of this study to address the research questions at hand. The reason was that these frameworks provide rational explanations that clarify why and how individuals make a decision to adopt and continue using various technological systems (Al-Gahtani, 2016; Davis, 1989; Ji et al., 2019; Vahdat et al., 2020). Subsequently, we drew on the customer satisfaction theory (CSAT) as well as the consumer decision-making theory to hypothesize how customer satisfaction in a digital context (in this study referred to as digital satisfaction) can be enhanced, and to investigate its role in facilitating the consumer's decision to repurchase.

The current study aimed to deepen our understanding of the antecedent factors that trigger shoppers, who have already purchased products via a mobile shopping application, to ultimately repeat their purchasing behavior on the same application; hence, fostering continued use. This insight could help businesses when designing optimal customer strategies that enhance a consumer's perceived value as a means to keep customers coming back to their mobile shopping application. The remainder of the article is structured as follows. Firstly, an overview of the pertinent literature and research hypotheses is provided. This is followed by a discussion of the methodology and empirical findings. Lastly, the discussion and managerial implications are presented, as well as the limitations and directions for future research.

2. Theoretical underpinnings and research hypotheses

2.1. Shopping value theory

A consumer's expectations of the value provided by technology (in this case, mobile shopping applications) to his or her life (either work or home), will determine whether the technology is accepted and used continually (Whitten et al., 2014). Furthermore, Ström et al. (2014) state that perceived value happens to be influenced by the consumer's perception of the benefits received versus sacrifices made. This has resulted in two universal value dimensions being established, namely utilitarian and hedonistic (Babin et al., 1994; Hsiao et al., 2016; W. K. Chen et al., 2017).

2.2. Utilitarian and hedonic value

Utilitarian shopping value is synonymous with task-oriented, efficient, deliberate and rational behavior, where the outcome of the purchase is what derives meaning, and not the shopping experience itself (Babin et al., 1994; Hasan & Mishra, 2015; Kesari & Atulkar, 2016). In comparison, hedonic value derives from the potential enjoyment derived from the act of shopping or browsing (Yim et al., 2014). Hedonists see shopping as a form of exploration or escapism from everyday life, and do not necessarily need the items that they may buy (Atulkar & Kesari, 2017; Vijay et al., 2017). Unlike utilitarian value, hedonic value is not always stimulated by the actual purchase needed, but rather by the entertainment or emotional worth that is created through the shopping experience (Ham et al., 2019; W. K. Chen et al., 2017). These values are inherently different; however, they both need to be addressed in order to meet the needs of today's ever-demanding consumers (Kesari & Atulkar, 2016; Molinillo et al., 2017).

2.3. Value creation through digital atmospherics

Digital atmospherics refers to the design and functionality components of a digital platform, which could potentially attract customers or drive them away, ultimately affecting the profitability of a firm (Lee & Kim, 2019; Poncin & Mimoun, 2014; Vijay et al., 2017). According to Vijay et al. (2017), through the use of digital atmospherics, digital platforms could create an easy (utilitarian) and delightful (hedonic) experience for the customer, which will positively influence the consumer's buying behaviors and perceptions of value.

Concomitantly, digital atmospherics comprise of: informative content, entertainment, perceived ease of use and trust, which inherently stem from the theories pertaining to acceptance and continued use of technology, namely the TAM3 framework and perceived value theory (Van der Heijden & Verhagen, 2004; Venkatesh & Bala, 2008). The digital atmospherics investigated in this study will be discussed in further detail in the sub-sections to follow.

2.4. Informative content

As previously mentioned, perceived value is fundamentally based on the trade-off between perceived quality and perceived fee (Babin et al., 1994). In the digital context in particular, the perceived value of a technology is dually determined by the quality of the technological system as well as the quality of the informative content accessible via the technology itself (Pearson et al., 2012).

Kizilcec (2016) recognized that too little or too much information could negatively affect customer's perception of the quality of a digital site. There needs to be a balanced amount of readily available and easily accessible content to reduce confusion, irritation and distrust (Kizilcec, 2016). Informative content could include product-specific details (whether it be insight regarding the dimensions, features and prices of products and/or product reviews), delivery information, privacy and payment details, the return policy of the store, contextualized promotions and other content needed by the consumer for purchasing (Chopdar & Balakrishnan, 2020; Talwar et al., 2020; L. Zhou et al., 2018).

Empirical evidence proves that when relevant information is found on a digital platform without difficulty, utilitarian value is fostered (C. M. Chiu et al., 2014). This is attributed to the fact that quality information has proved to enhance the perceived usefulness of the site, which is synonymous with utilitarian value (C. M. Chiu et al., 2014; Pearson et al., 2012). In summation, the efficient acquisition of information serves as a fundamental driver of utilitarian value (Francis, 2017). Thus, it is hypothesized that:

H₁: Informative content positively influences the utilitarian value of the mobile shopping application.

2.5. Perceived ease of use

Perceived ease of use refers to the extent to which the use of a technological application is free from mental and physical effort (Li et al., 2020), as derived from the TAM3 framework (Ji et al., 2019). The TAM3 is based on identifying the antecedents of perceived ease of use, which are classified into two groups, namely anchors (computer self-efficacy, perceptions of external control, computer anxiety, computer playfulness) or adjustments (perceived enjoyment and objective usability). In essence, when consumers have to exert a high level of effort to complete a task on a digital platform, they will have a negative perception of the technology and are unlikely to revisit and/or reuse it (Evelhoch, 2016; S.C. Kim et al., 2016; C. W. Hsu & Yeh, 2018).

Perceived ease of use can be enhanced by providing the user with the necessary tools to complete the task at hand effortlessly (Evelhoch, 2016). In the context of a mobile shopping application, tasks could include searching for and retrieving content, conducting payments, and easily operating the application (Li et al., 2020). An effortless shopping experience will help the shopper find exactly what he or she is looking for, reducing frustration and irritation. This, in turn, creates utilitarian value, which is synonymous with effectiveness and efficiency (Kesari & Atulkar,

2016; Parker & Wang, 2016). On the other hand, a challenging or difficult interaction with a digital platform may negatively affect the utilitarian value of the online experience (Parker & Wang, 2016). Accordingly, the following hypothesis is formulated:

H₂: Perceived ease of use positively influences the utilitarian value of the mobile shopping application.

2.6. Trust

Trust is pertinent to the digital context (whether it be online commerce or online services) as it is needed to deal with two critical conditions synonymous with digital means: uncertainty and risk of vulnerability (Choi & Lee, 2019; Hermawan, 2019; Hillman & Neustaedter, 2017; Marriott & Williams, 2018). This is attributed to the fact that in order to purchase items online, consumers have to provide private information to e-tailors and need to trust that the product on screen is what will be delivered. As a result, various researchers have incorporated trust into the TAM frameworks when investigating adoption and continued usage behavior (Alalwan et al., 2018; Aljukhadar & Senecal, 2015; Lawry & Choi, 2013; Wu & Chen, 2005). Without the presence of trust, Kim (2014) as well as D. J. Kim et al. (2016) argue that a transaction will not be completed.

In order to create the least amount of hesitation and consideration when using the mobile shopping application, trust must be formed so that the consumer has a relaxed and enjoyable experience (Y.C. Chen et al., 2015). Recent empirical studies have shown that affective and hedonic variables such as interactivity, aesthetics and customization have become sound indicators of the reliability and safety of a mobile site, which are strongly associated with trust (Albayrak et al., 2020; De Wulf et al., 2006).

In summation, once a consumer trusts the mobile shopping application, he or she will be more likely to have a relaxed and enjoyable experience—inherently creating hedonic value. Thus, the following hypothesis has been formulated:

H₃: Trust positively influences the hedonic value of the mobile shopping application.

2.7. Entertainment

Some consumers want to gain more than just a product when they are shopping (Cullen & Kabanda, 2018), they want to have an experience that is enjoyable (Lim et al., 2017; Vijay et al., 2017). Enjoyment encapsulates the positive feeling a user encounters when using products, services or technologies; serving as one of the antecedents in the TAM3 framework (Venkatesh & Bala, 2008). TAM3 confirms that perceived enjoyment is a significant determinant of a user's acceptance and continued usage of a technological system (Venkatesh & Bala, 2008). Bhullar & Gill (2018) as well as Alalwan et al. (2018) explain that as a means to enhance a user's perceived enjoyment, technologies can be designed to incorporate entertaining features. This is attributed to the fact that a user's feelings cannot be easily embedded into the design of a technology, whereas entertainment can.

To enhance a user's entertainment in the digital context, businesses need to ensure that the digital platform is enjoyable to the users by creating a sense of escapism, pleasure and fun (Alalwan et al., 2018; Lim et al., 2017). This can be attained through the infusion of key activities that empower users to socialize, view product information in a hedonic manner (whether it be through virtual mirrors, social sharing features or augmented reality), community engagement or gamification opportunities (Chaffey & Smith, 2017; Kachare et al., 2015; Vonkeman et al., 2017; Zhao & Balagué, 2015).

In doing so, businesses are able to reap long-term benefits as entertained users have a tendency to stay longer on the website or mobile application and, in turn, to rate it as a good experience (Han et al., 2016). Subsequently, creating an entertaining mobile shopping application is important for hedonism, as the hedonic value is fulfilled through the pleasurable experience of shopping, rather than

the sole outcome of the shopping experience (Alalwan et al., 2018; Antéblan et al., 2013; Han et al., 2016; Kesari & Atulkar, 2016). This study therefore presents the following hypothesis:

H₄: Entertainment positively influences the hedonic value of the mobile shopping application.

2.8. The influence of shopping values on digital satisfaction

A consumer's judgement of the value received from using a technology, product or service influences the level of satisfaction a customer experiences (Chopdar & Balakrishnan, 2020; S. M. Chiu et al., 2019; Overby & Lee, 2006). In the context of this study, digital satisfaction referred to the degree of the overall pleasure and fulfilment felt by the customer when purchasing on a mobile shopping application, and to whether the experience met or surpassed the customer's expectation (Ebrahim et al., 2016; Hung et al., 2014; Ibzán et al., 2016), stemming from the CSAT. The CSAT explains how the consumer's psychological state is fundamentally influenced by the extent to which his or her expectations are met or exceeded (Ibzán et al., 2016). As a result, expectations are related to satisfaction, which, in turn, is measured by the value derived from using the product or service (Qualtrics, 2019).

Since perceived value is a precursor to satisfaction, businesses who invest in the creation of practical, easy-to-use, trustworthy and entertaining mobile shopping applications that help consumers accomplish their shopping goals, consequently instill utilitarian and hedonic shopping value. This, in turn, influences the user's satisfaction with the digital platform (Chi, 2018; Molinillo et al., 2017; Vijay et al., 2017). It can therefore be presumed that users will be satisfied as their expectations of utility and hedonism have been met (Kesari & Atulkar, 2016; Vijay et al., 2017). Based on the discussion to this point, the following hypotheses were considered:

H₅: Utilitarian value of the mobile shopping application has a positive influence on shoppers' digital satisfaction.

H₆: Hedonic value of the mobile shopping application has a positive influence on shoppers' digital satisfaction.

2.9. The influence of digital satisfaction on repurchase intention

Retailers want their consumers to keep coming back to their store to buy from them again, in order to increase profits and yield long-term benefits, which include reduced customer acquisition costs (Molinillo et al., 2017; Safa & Von Solms, 2016; Vijay et al., 2017). Chou and Hsu (Chou & Hsu, 2016) noted that repurchase intention is a post-purchase phenomenon, which comprises shoppers' intentions to engage in future purchase activities with the retailer or supplier (Ibzán et al., 2016). This phenomenon stems from the customer decision-making theory.

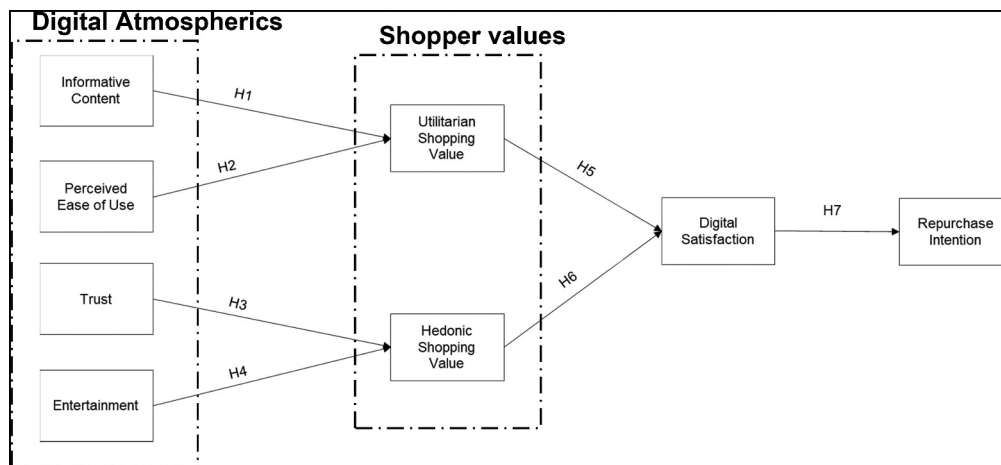
Literature further reveals that there is a positive link between shoppers' satisfaction and repurchase intention (Abdul-Muhmin, 2010; Chinomona & Dubihlela, 2014; Ebrahim et al., 2016; Ibzán et al., 2016; Liao et al., 2017; Pearson et al., 2012; Singh, 2017). This is attributed to the fact that satisfied consumers tend to revisit and repurchase from stores where they know they have had a positive experience before, as their recollection of the experience serves as evidence that they are likely to experience a similar situation again (Chopdar & Balakrishnan, 2020; Srivastava & Sharma, 2013; Vijay et al., 2017). Since satisfaction in an offline and general online context has proved to influence repurchase intentions, we hypothesize the same to be true in a mobile shopping application context. Against this background, the following hypothesis was considered:

H₇: Digital satisfaction positively influences a user's intention to repurchase via the mobile shopping application.

3. Research methodology

In an attempt to examine the relationships between the dependent and independent variables (as depicted in Figure 1), this study adopted a quantitative, cross-sectional approach; consistent with the positivist paradigm. Being quantitative in nature, a survey method was utilized.

Figure 1. Research model.



3.1. Measurement development

Following a comprehensive literature review, four to five scale measures were developed for each construct, based on existing empirical findings and theoretical conceptualizations derived from validated instruments. Measures were selected based on item reliability, and adapted wording was used to fit the context of this study. Refer to Table 2 for an overview of the measurement items that were utilized. For all the measures, a seven-point Likert-type scale was utilized with anchors ranging from strongly disagree (1) to strongly agree (7).

The constructs in the research model were authenticated using a pilot study, together with an assessment from a panel of experts with prior mobile shopping application experience, who evaluated the appropriateness of the instrument. The pilot study was conducted using a sample of 20 respondents, and the results helped to assess the completion time, logical consistencies, ease of understanding, contextual relevance and overall sequence of the questionnaire. The statement wording and layout of the questionnaire were adapted according to the feedback from the respondents and experts.

3.2. Sample and data collection procedure

Primary data were collected from participants who had purchased via a mobile shopping application, and not only via a mobile-optimized website. Hence, the focus was on obtaining participant who had some sort of mobile shopping application purchase experience (unrestricted in terms of industry or product category), as a means to investigate the drivers that could foster repurchase intent.

A non-probability convenience sampling technique was used to administer a web-based questionnaire. In order to reach the maximum number of respondents, a hyperlink connected to the web survey was shared via social media platforms as well as via email. This made it possible to reach a large number of potential subjects, while serving as an economical and reliable method for gathering empirical data. Furthermore, a web survey was consistent with the digital context of this study.

Table 1. Demographic profile of respondents (N = 245)

Variables		Frequency (n)	Percentage (%)
Demographics	<i>Gender</i>		
	Male	60	24,5
	Female	185	75,5
	<i>Age</i>		
	17-24	173	70,6
	25-30	33	13,5
	31-40	24	9,8
	41-50	5	2,0
	51+	10	4,1
	<i>Education Level</i>		
	Undergraduate	143	58,4
	Postgraduate	72	29,4
	Matric	27	11,0
	Diploma	3	1,2
Shopping Behavior	<i>Purchase Rate via Mobile Shopping Application</i>		
	Only once	41	16,7
	2-5 times	130	53,1
	6-8 times	35	14,3
	10+ times	39	15,9
	<i>Preferred method of shopping</i>		
	App	100	40,8
Online website	77	31,4	
	Physical store	68	27,8

To ensure the sampling criteria were met, screening questions were added, with regard to prior purchase behavior within a mobile shopping application context. The questionnaire was distributed to 300 respondents. A total of 245 completed and valid responses were received, resulting in an 81.6% response rate.

3.3. Respondent profile

The respondent cohort was profiled according to gender, age, education and mobile shopping application usage behavior. Of the 245 respondents, 185 (75.5%) were female, whilst 60 (24.5%) were male. In terms of age, the majority of the participants (70.6%) belonged to the age category 17-24 years, followed by the group 25-30 years (13.5%). The next 9.8% of the respondents belong to the 31-40 age group; while the remaining respondents were aged 51+ (4.1%) and 41-50 (2%). The sample was relatively well-educated with 58.4% being graduates and 29.4% having post-graduate qualifications. The remainder reported matric (11%) and diplomas (1.2%).

In terms of the cohort's purchasing behavior via mobile shopping applications, Table 1 reveals that the majority of the sample (53.1%) purchased from a mobile shopping application approximately 2-5 times prior to completing the questionnaire. The respondents who purchased only once constituted 16.7% of the sample, and the respondents who purchased more than 10 times, accounted for 15.9% of the cohort. Lastly, 14.3% of the respondents had an in-app purchase rate of six to eight times. In terms of preferred shopping method, the majority of the respondents (40.8%) preferred using an app to shop, followed by 31.4% who favored online stores, and lastly, 27.8% would rather shop in a physical store.

Table 2. Measurement model assessment results

Construct	Item	Item/Statement Wording	Adapted from:	Mean	Std. deviation	Cronbach's alpha (>0.50)	Composite Reliability (> 0.70)	AVE (> 0.50)
Informative Content	IC1	When using the App, I have the full information at hand.	Park et al. (2007)	5.19	1.349	0.856	0.902	0.697
	IC2	The App provides me with in-depth information I require to make a purchase.		5.15	1.313			
	IC3	The App gives me enough information so that I can identify the item to the same degree as offline.		5.17	1.374			
	IC4	The App is a very good source of information.		5.53	1.266			
Trust	TR1	I feel safe with my transaction on this App.	Chiou & Pan (2009)	5.36	1.388	0.897	0.929	0.765
	TR2	I trust the App will keep my personal information safe.		5.48	1.317			
	TR3	I trust the App administrators will not misuse my personal information.		5.42	1.311			
	TR4	I feel the App is reliable.		5.67	1.180			
Perceived Ease of Use	PEOU1	It is easy to get around and find what I want.	Park et al. (2007)	5.67	1.184	0.873	0.913	0.725
	PEOU2	It is quick and easy to complete a transaction on the App.		5.60	1.282			
	PEOU3	I can find what I want with a minimum number of clicks.		5.53	1.304			
	PEOU4	The App has well-arranged categories.		5.61	1.242			
	PEOU5	The search functions on the App are helpful.		5.73	1.218			
Entertainment	E1	The App is fun to browse.	Vijay et al. (2017)	5.41	1.339	0.878	0.916	0.733
	E2	The App features are exciting.		5.23	1.440			
	E3	The App features entertain me		5.42	1.214			
	E4	The App content is striking.		5.30	1.339			

(Continued)

Table 2. (Continued)

Construct	Item	Item/Statement Wording	Adapted from:	Mean	Std. deviation	Cronbach's alpha (>0.50)	Composite Reliability (> 0.70)	AVE (> 0.50)
Utilitarian Shopping Value	USV1	By using the App, I found useful information on the products	Fernandes (2016)	5.20	1.254	0.613	0.769	0.461
	USV2	By using the App, I was able to obtain information without delays.	Fernandes (2016)	5.21	1.438			
	USV3	I feel disappointed if I don't get all I need on a single store, and I have to visit many stores.	Sarkar (2011)	5.02	1.457			
	USV4	When I shop, I only search for the items I originally wanted.	Fernandes (2016)	4.40	1.650			
Hedonic Shopping Value	HSV1	Shopping on the App is always exciting for me.	Vijay et al. (2017)	4.85	1.505	0.785	0.861	0.608
	HSV2	I enjoyed shopping on the App for its own sake, not just for the items I may have purchased.		4.95	1.561			
	HSV3	Compared to other things I have done, the time spent App shopping was truly enjoyable.		5.08	1.308			
	HSV4	I continued to shop not because I had to, but because I wanted to.		5.50	1.289			
Digital Satisfaction	DS1	To me, this App is the best App to shop with.	Lin (2007)	5.27	1.212	0.917	0.938	0.751
	DS2	The App's information content meets my needs.	Lin (2007)	5.33	1.181			
	DS3	I was delighted with my overall App shopping experience.	Wen et al. (2011)	5.16	1.402			
	DS4	I was very contented with my overall App shopping experience	Wen et al. (2011)	5.71	1.146			
	DS5	Overall, I am satisfied with the purchase experience at this App retailer.	Wen et al. (2011)	5.72	1.223			

(Continued)

Table 2. (Continued)

Construct	Item	Item/Statement Wording	Adapted from:	Mean	Std. deviation	Cronbach's alpha (>0.50)	Composite Reliability (> 0.70)	AVE (> 0.50)
Repurchase Intention	RI1	If I were to buy the same product again, I would likely buy it from this App.	Kim (2014)	5.13	1.596	0.790	0.856	0.550
	RI2	If I were to buy on an App, I would likely buy it from this App.	Kim (2014)	5.24	1.612			
	RI3	I am likely to return to this App for my next purchase.	Kim (2014)	5.44	1.510			
	RI4	My intention is to continue using Apps for shopping rather than use traditional shopping.	Wen et al. (2011)	4.57	1.756			
	RI5	If I could, I would like to continue shopping on Apps as much as possible.	Wen et al. (2011)	5.41	1.467			

3.4. Data analysis and interpretation

The current study made use of partial least squares path analysis, also classified as variance-based structural equation modelling (PLS-SEM) and its SmartPLS 3.2.7 software (Ringle et al., 2015). Taking into account that this technique combines factor analysis and multiple regression analysis, it is used to test structural relationships between measured variables and latent constructs. Based on this study’s model specifications and associated hypotheses 1–7, using SEM empowers the researchers to estimate the multiple and interrelated dependence between dependent and independent variables, in a single analysis (Chin, 1998).

4. Results

4.1. Assessment of the measurement model

To assess the adequacy of the measurement model, the reliability as well as convergent and divergent validity was calculated. Reliability was examined using Cronbach’s alpha and composite reliability (CR) values. As indicated in Table 2, Cronbach’s alpha and CR scores for each construct ranged from 0.613 to 0.917, which are above the suggested threshold of 0.6 (Anderson & Gerbing, 1988; Chin, 1998; Gliem & Gliem, 2003), signifying that the measures were reliable. Convergent validity was investigated by studying the average variance extracted (AVE), which should be greater than the critical value of 0.5 (Chin, 1998; Fornell & Larcker, 1981). As reflected in Table 2, the afore-mentioned criteria had been met, suggesting that convergent validity was assured, with exception of the construct: Utilitarian shopping value. However, additional research confirms that an AVE of 0.4 can still be accepted as an indicator of adequate convergent validity, on the grounds that the composite reliability is higher than 0.6, which is the case in the current study (Fornell & Larcker, 1981).

Discriminant validity was assessed using the heterotrait–monotrait (HTMT) ratio of correlations (HTMT.90) as it is strongly recommended to utilize this approach when assessing discriminant validity in variance-based SEM, due to its reliability and high sensitivity rates (Henseler et al., 2015). Table 3 reveals that the maximum HTMT value (0.880) was below the cut-off value of 0.900 (Henseler et al., 2015). As a result, adequate discriminant validity was present for the constructs in the proposed model. We then proceeded to test the structural model.

4.2. Structural paths and hypotheses testing

In order to test hypotheses 1 to 7, the bootstrapping function was used, which provided the path coefficients and their significance, based on a subsample of 5 000. Figure 2 illustrates the results of the structural model, and Table 4 summarizes the hypotheses testing, by reporting on the standardized path coefficients and t-values.

Table 3. Heterotrait–Monotrait ratio of correlations

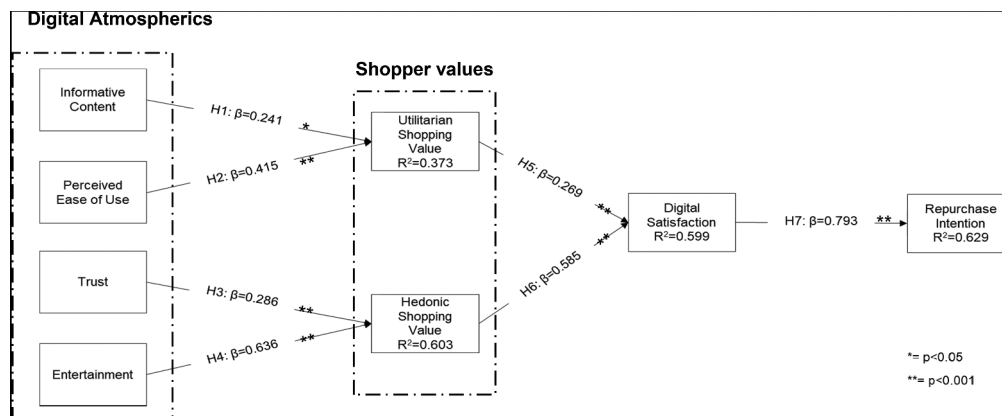
	DS	E	HSV	IC	PEOU	RI	TR	USV
DS	1.000							
E	0.676	1.000						
HSV	0.868	0.873	1.000					
IC	0.744	0.497	0.629	1.000				
PEOU	0.805	0.666	0.705	0.816	1.000			
RI	0.880	0.641	0.845	0.666	0.659	1.000		
TR	0.729	0.361	0.583	0.704	0.690	0.693	1.000	
USV	0.768	0.782	0.793	0.678	0.732	0.736	0.459	1.000

Notes: DS = Digital Satisfaction, E = Entertainment, HSV = Hedonic Shopping Value, IC = Informative Content, PEOU = Perceived Ease of Use, RI = Repurchase Intention, TR = Trust, USV = Utilitarian Shopping Value.

Table 4. Path analysis results

Hypothesis	Path	Path coefficient (β)	t-value	P Value (one-tailed)	Outcome of Hypothesis
H1+	Informative Content→Utilitarian Shopping Value	0.241	2.665	0.008	Supported
H2+	Perceived Ease of Use→Utilitarian Shopping Value	0.415	4.51	0.000	Supported
H3+	Trust→Hedonic Shopping Value	0.286	5.931	0.000	Supported
H4+	Entertainment→Hedonic Shopping Value	0.636	14.257	0.000	Supported
H5+	Utilitarian Shopping Value →Digital Satisfaction	0.269	3.575	0.000	Supported
H6+	Hedonic Shopping Value → Digital Satisfaction	0.585	8.472	0.000	Supported
H7+	Digital Satisfaction→Repurchase Intention	0.793	30.772	0.000	Supported

Figure 2. Hypotheses testing.



In terms of explanatory power, the explained variance results reveal that digital atmospherics, namely informative content and perceived ease of use accounted for 37.3% ($R^2 = 0.373$) of the variance in utilitarian value, whilst entertainment and trust accounted for 60.3% ($R^2 = 0.603$) of the variances for hedonic value. Moreover, a significant amount of variation in digital satisfaction (59.9%) and repurchase intention (62.9%) is explained by the proposed model. The reported R^2 values can be classified as “medium to large” effect (Cohen, 1988); hence, verifying that the predictive validity of the model is good.

With regard to hypotheses testing, the results in Table 4 indicate that the hypothesized relationships (1–7) have all been accepted. Specifically, informative content and perceived ease of use enhance the utilitarian value of the mobile shopping application ($\beta = 0.241$, $p < 0.05$; $\beta = 0.415$, $p < 0.001$), supporting H1 and H2. The hedonic value of the mobile shopping application was significantly influenced by trust ($\beta = 0.286$, $p < 0.001$) and entertainment ($\beta = 0.636$, $p < 0.001$), supporting H3 and H4. The study went on to demonstrate that, in order to enhance a user’s perception of value in a mobile shopping application context, certain drivers have a larger influence than others, namely entertainment and perceived ease of use ($\beta = 0.636$; $p = 0.000$; $\beta = 0.415$; $p = 0.000$) respectively (Cohen, 1988).

A mobile shopping application, which provides users with utilitarian and hedonic shopping values, has proved to enhance a user’s digital satisfaction ($\beta = 0.269$, $p < 0.001$; $\beta = 0.585$, $p < 0.001$), thus H5 and H6 were also confirmed. Interestingly, hedonic value had a larger influence on users’ level of digital satisfaction with the mobile shopping application, in comparison to utilitarian shopping value ($\beta = 0.636$; $p = 0.000$). Lastly, empirical evidence supports the notion that the presence of digital satisfaction exerts a positive significant influence on repurchase intention within the mobile shopping application context ($\beta = 0.793$, $p < 0.001$), so H7 was supported.

In summation, these results verify that digital atmospherics and shopper values can influence digital satisfaction rates positively and, in turn, boost repurchase intentions within a mobile shopping application context; hence, addressing the research questions at hand.

5. Discussion

A critical review of the body of knowledge regarding repurchase intent was conducted, in order to address the research problem at hand. Existing research has investigated repurchase behavior from a generic online shopping perspective (desktop and mobile responsive website based) (C.M. Chiu et al., 2012; Jai et al., 2013; Liao et al., 2017; C. M. Chiu et al., 2014; Singh, 2017; Wen et al., 2011; Wu et al., 2014; T. Zhou et al., 2009). Furthermore, research studies in the mobile shopping application landscape mainly took the perspective of pre-purchase behavior, including acceptance,

adoption, browsing and engagement behavior, as well as purchase intent into account (C.L. Hsu & Lin, 2016; Chopdar et al., 2018; Kang et al., 2015; M. Kim et al., 2017; Parker & Wang, 2016; Sung, 2013; Tak & Panwar, 2017; Vahdat et al., 2020; C. W. Hsu & Yeh, 2018). It is evident that limited consideration has been paid to repurchase behaviour, particular to the mobile shopping application context (Chopdar & Balakrishnan, 2020; Lee & Kim, 2019; S. M. Chiu et al., 2019). The findings emanating from this study address the identified gaps in literature, by examining the interrelationships between digital atmospherics, value creation, satisfaction and repurchase intent. Seven hypotheses, which were informed by the theoretical foundations of the TAM 3 framework and the perceived value theory, could not be rejected.

The results obtained in hypothesis one and two corroborate with the extant literature by Ozturk et al. (2016) as well as W. K. Chen et al. (2017), which validate the significant role of ease of use and informative content in enhancing perceived utilitarian value. These studies were conducted in mobile booking and social commerce contexts, respectively; and it is now evident that these determinants also hold true in a mobile shopping application context.

The results of hypothesis three confirm that trust affects the extent to which a user derives hedonic value from his or her mobile application shopping experience. Similarly, Yoo et al. (2012) discovered that the creation of trust in an online shopping context places users in a state of flow which consequently influences hedonic value. This, in turn, aligns with the existing research by Lawry & Choi (2013), who verify an association between affective and hedonic variables with mobile trust; stating that users who experience structural assurance are more likely to engage and interact.

The results obtained from hypothesis four are consistent with the empirical evidence from Kesari & Atulkar (2016), who confirm that the entertainment a user experiences from shopping, enhances perceived hedonic value. Furthermore, Kesari & Atulkar (2016) reiterate that entertainment can serve as a competitive tool to entice consumers to select a mall for shopping. In conjunction with the findings from our study, it is evident that entertainment is a powerful driver in both the offline and mobile shopping settings.

Hypothesis five and six validate the relationship between value and satisfaction. These findings are also in line with the literature, where Molinillo et al. (2017) state that consumer satisfaction with online clothing retailers can be increased by both the hedonic and utilitarian values of shopping. However, empirical findings obtained in the study by Vijay et al. (2017) are contrary to earlier studies, not finding any influence of hedonic shopping values on shoppers' satisfaction in a web-based shopping context, whereas utilitarian value was a stronger determinant. This, in turn, highlights the fact that value creation and satisfaction are context-specific. Our work advances the existing literature by distinguishing which of these values are stronger drivers of digital satisfaction, particular to a mobile shopping application. Novel insights are brought forward in terms of the differentiating roles of utilitarian and hedonic value, with hedonic value playing a stronger significant role when it comes to enhancing consumers' satisfaction with their shopping experience via a mobile application. Practitioners habitually focus on the functionality of their mobile shopping applications and tend to place secondary emphasis on the creation of hedonic value (Francis, 2017). Based on the findings of this study, the creation of hedonic value should be central in the strategic development process of any mobile shopping application, if the retailer aims to foster digital satisfaction, which, in turn, prompts repurchase intent.

Hypothesis seven results are not without empirical support. This study validated the significant role of satisfaction in triggering repurchase intent, which is in line with the existing stream of literature in this space (Abdul-Muhmin, 2010; Atulkar & Kesari, 2017; Chinomona & Dubihlela, 2014; Ebrahim et al., 2016; Izbaz et al., 2016; Liao et al., 2017; Pearson et al., 2012). As pointed out by Chopdar & Balakrishnan (2020) as well as Chung et al. (2016), satisfaction is a strong determinant of whether shoppers will continue using a mobile shopping application. These findings verify that without satisfaction, repurchase behavior is most likely to cease.

6. Theoretical implications

The salient aspect of the current study is the fact that it is among the pioneers in academic literature to holistically explicate the value-based antecedents of repurchase intent specifically via mobile shopping applications. The results of this study point to several key implications for academics. Firstly, our findings provide support for the importance of digital atmospherics in relation to value creation, deepening our understanding about how mobile shopping applications should be designed as a means to maximize a user's perceived value. This study thereby extends our understanding of earlier research regarding hedonic and utilitarian values proposed by Babin et al. (1994), by applying the theoretical underpinnings to the emerging mobile application context. Secondly, the ripple effect of digital atmospherics on value creation and on digital satisfaction, was shown to significantly influence a user's intention to revisit a mobile shopping application in order to conduct future purchases. Moreover, the value a user experiences when using a mobile shopping application has a strong positive effect on his or her satisfaction levels and his or her intentions to repurchase. This shows that the creation of a value-infused purchase experience is crucial if a business is looking to encourage repeat buying behavior. Based on these findings, practical recommendations have been made, with the aim to advance management practices.

7. Practical managerial implications and recommendations

The findings of this study yield several imperative managerial implications for mobile application developers, marketers, retailers and/or entrepreneurs who are obligated to develop and manage mobile shopping applications. Firstly, this study identified that certain digital atmospherics need to be incorporated as a means to enhance the value users derive from using a mobile shopping application. From a utilitarian perspective, informative content and perceived ease of use were empirically proved to be strong antecedents. In order for practitioners to enhance the informative nature of the content appearing in the mobile shopping application practically, visualization and personalization could be used. These aspects aid in ensuring the content stands out from the clutter and enhance the user's experience (Rout, 2017). High-quality product imagery displaying the product from all angles as well as video clips of consumers wearing or using the products could be added. This brings the product specifications to life while empowering users to view products holistically, consequently addressing the intangibility issues brought about by the digital world (Xiao & Benbasat, 2011). Additionally, remembering users' interests and preferences through Wishlist integration and tailoring content accordingly, further amplifies the informativeness of the content.

In terms of enhancing a user's perceived ease of use, the functionality of the mobile shopping application should focus on streamlining the login, registration, purchase and refund process. By integrating social login mechanisms into the mobile shopping application, users can easily log in and sign up with either their Facebook or Google accounts, which makes for an effortless process (Gafni & Nissim, 2014). Furthermore, the timing of prompting a user for registration details is just as important as it has been proved to repel users if done too soon (Schade, 2015). Mobile shopping applications should allow users to browse easily upon downloading and then integrate the registration with the check-out process (Schade, 2015).

To address the antecedents of hedonic value practically, digital atmospherics of trust and entertainment need to be imbedded in the mobile shopping application. To reassure untrusting users, a business could incorporate the following factors: recent reviews and ratings, clear guarantees and refund policies, full business contact details, reliable response systems, which are all error free (Chaffey & Smith, 2017). Lastly, but by no means least, the entertainment appeal of a mobile shopping application should be addressed. Since our results reveal the significant influence of this particular digital atmospheric, it should not be viewed merely as an add-on but rather a prerequisite. Entertainment appeal could be enhanced by the incorporation of shopping guides, virtual-reality and augmented-reality features, such as virtual mirrors or immersive product placement, as well as community and gamification features (Dacko, 2017).

With these digital atmospherics in place, our results showed that the perceived value of the mobile shopping application is enhanced. This, in turn, has been proved to affect a user's digital satisfaction. Businesses should therefore make provision for consumers to share their satisfaction stories by incorporating social sharing features into the mobile shopping application. These satisfaction stories, a form of reviews, can be used to enhance the webrooming and showrooming experience (Verhoef et al., 2015), thereby facilitating the consumer journey to purchase and ultimately repurchase.

8. Conclusion

With digital avenues creating a plethora of commerce opportunities, consumers are now spoilt for choice. Consequently, it has become challenging for businesses to ensure users keep using their mobile shopping applications, despite the appeal of new entrants. This implicates business practitioners as the essence of long-term success is determined not by the number of customers that buy once, but rather by the number of regular buyers (Zhao et al., 2019). As a means to foster the desired outcome of repurchase behavior, this research study confirmed the importance of creating a value-infused mobile application shopping experience through the interplay between various digital atmospherics, such as ease of use, informative content, trust and entertainment cues. The amalgamation of these cues enhances a user's perceived value associated with the usage of the mobile shopping application. The created value, in turn, boosts users' satisfaction rates, which proved to be a pivotal determinant of customer repurchase intent. By investigating the causes and effects of value creation, the findings emanating from this study provide novel insights which happen to fill a gap in the extant literature regarding how repurchase intent can be triggered in a mobile shopping application context.

9. Limitations and future research

Upon distribution of the questionnaire, it became evident that many consumers browse exclusively via mobile shopping applications while completing their actual purchases either in store or via a desktop site. Due to the sampling criteria stipulating prior purchase via a mobile shopping application as a prerequisite, the number of suitable respondents dwindled; hence, limiting the sample size. This observation, during the data collection phase, prompted future research idea in the field of omni-channel retailing where researchers could investigate the role of a mobile shopping application in the omnipresent consumer journey towards purchase (Verhoef et al., 2015). Considering the growing demand for a seamless omni-channel commerce experience, webrooming and showrooming behaviors could also be tested within the mobile shopping application context.

Secondly, this was a cross-sectional study. Such a design limited the researchers in measuring repurchase intent as a specific point in time. Future studies could make use of longitudinal approaches to investigate whether the repurchase intent transformed into actual repurchase behavior. Lastly, future research could investigate the effectiveness of the afore-mentioned practical recommendations as a means to provide beneficial insights for businesses interested in creating value-rich mobile shopping application experiences.

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