



The importance of customer citizenship behaviour in the modern retail environment: Introducing and testing a social exchange model



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ABSTRACT

In the modern retail environment, customers continuously rely on other consumers for assistance when interacting with retailers' digital technologies. This study examined if technology acceptance drives affective commitment and ultimately existing users to assist potential users, as measured by direct customer citizenship behaviour (advocacy, help in using the technology) and indirect customer citizenship behaviour (tolerance and feedback to the retailer for improvement). The sample consisted of 533 electronic banking customers. All research hypotheses were supported. Practically, the research findings direct retailers on the strategies required to ensure customers engage in direct and indirect citizenship behaviour to assist fellow customers in interacting with the digital technologies, and to improve the customer retail experience. Theoretically, the study extends the extant research on technology acceptance by providing more insight into its connection with customer citizenship behaviour directed towards fellow customers and retailers in the post-consumption stage of digital technology and the extent to which affective commitment strengthens these relationships.

1. Introduction

New digital technologies are significantly changing the customer retail experience (Farah and Ramadan, 2017:54). For example, today many customers shop online, use self-service checkouts, and pay with mobile devices. Retailers are investing in these convenient self-service channels to increase their own productivity and achieve greater customer satisfaction (Demoulin and Djelassi, 2016:540). Furthermore, it is predicted that the growing digital trend will revolutionise retailing in the future and will radically impact the manner in which retailers interact with their customers (Kallweit et al., 2014:268). New wave technologies – such as artificial intelligence, virtual reality and innovative delivery systems – are expected to transform the consumer retail experience outside of traditional time and location boundaries (Parkin et al., 2018:1–2).

These retail technological developments may result in less real-time face-to-face customer interaction with a retail employee, who would ordinarily be able to provide on-the-spot advice to customers during the retail experience. Accordingly, in the modern retail environment, customers seem to rely more on the help of other consumers – that is, inter-customer helping behaviour (Yi and Kim, 2017). A unique feature of this behaviour is that it is normally voluntary and not an explicit

requirement of the retailer (Gruen, 1995). Nevertheless, this behaviour is actively supported as it may improve service delivery and enhance productivity of the retail experience (Kim and Yi, 2017:788–789). As such, in business sciences literature, this behaviour is often referred to as customer citizenship behaviour, as it exhibits many of the attributes and motivational drivers of a good social citizen (Yi and Gong, 2013:1280–1281).

However, citizenship behaviour is not restricted to customers' direct engagement with fellow consumers. It may also entail indirect citizenship behaviour, such as customers being tolerant if the service does not meet their expectation levels and providing feedback for improving the retail experience (Yi and Gong, 2013:1280–1281). This behaviour has, to a large extent, been overlooked in the retail literature involving digital technologies, but is nonetheless important, as customers who are not completely satisfied with the digital technologies are retained and their suggestions for improvement may assist in enhancing the customer retail experience for fellow consumers.

A major driving force of customer citizenship behaviour is customers' affective commitment (Curth et al., 2014:149). In a situation where a customer relies on digital technology for the retail experience and lacks access to real-time direct customer interaction with a retail employee, it is plausible to expect that a customer's attitude of affective

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commitment to the digital technology is preceded by a set of beliefs of the acceptance of the digital technology (Davis, 1989; Davis et al., 1989). As such, this research seeks to better understand the extent to which technology acceptance drives customers' emotional attachment towards the technology and so impacts on their citizenship behaviour for a retail experience. This matter is well worth investigating, considering the potential value and leverage of good customer citizenship behaviour for the customer, retailer, and broader society.

Specifically, this research investigated the relationship between technology acceptance, affective commitment, and direct and indirect customer citizenship behaviour, focusing on a service environment where customers rely on a digital technology that lacks access to a real-time service assistant during the post-consumption stage. Theories related to technology acceptance, relationship marketing and social exchange were examined to develop and test a customer citizenship behaviour model and to identify the motivational drivers. Six technology acceptance belief factors were identified that may impact on customers' affective commitment and thus their direct customer citizenship behaviour (advocacy and helping fellow customers) and indirect customer citizenship behaviour (tolerance and feedback for improving the customer retail experience). Considering the important role of affective commitment in driving customer citizenship behaviour, the extent to which affective commitment would strengthen the relationship between technology acceptance beliefs and customer citizenship behaviours was also verified.

The research findings have important implications. Theoretically, significant insight has been gained into the impact of customers' technology acceptance beliefs on their attitudes towards the digital technologies, which may contribute to customer citizenship behaviour in a retail setting. Specifically, it seems that within the retail environment, what may also be relevant in the post-consumption stage of digital usage is the sequence of positive beliefs of retailers' digital technologies, contributing to positive attitudes, and that may affect customers' technology-related behaviour (Davis, 1989; Davis et al., 1989). However, the difference is that after customers have interacted with the retailers' digital technologies and affective commitment has been gained, the behaviour may take the form of direct and indirect citizenship behaviour, as explained by the social exchange theory (Blau, 1964). Furthermore the findings also provide insight into the role of affective commitment in strengthening the relationships between technology acceptance beliefs and customer citizenship behaviours in a retail setting. Practically, the research findings provide direction to retailers on the strategies required for ensuring customers engage in direct and indirect citizenship behaviour to assist fellow consumers interacting with the digital technologies and to improve their overall customer retail experience. From a broader social perspective, policy-makers, advocacy groups and government agencies may also benefit from the study's findings, as it offers insight into the pathway for ensuring customers become more service literate and proficient consumer citizens.

The subsequent section presents the literature background and introduces the conceptual model and related hypotheses. Following a brief explanation of the research methodology, the research findings are examined. Next, the research's theoretical contributions to the retailing field are discussed, and the practical implications are highlighted, not only for retailers and customers, but for social at large. The research limitations and directions for further research conclude this paper.

2. Literature review

2.1. An overview of customer citizenship behaviour

Citizenship behaviour was initially introduced by Organ (1988) within an organisational/employee context and refers to 'work-related behaviours that are discretionary, not related to the formal organisational reward system, and, in the aggregate, promote the effective

functioning of the organization' (Moorman, 1991:845). Since the late nineties, the citizen concept has also received considerable attention in the marketing discipline, where helpful behaviours shown by customers to other customers as well as the retailer have become a popular area of interest among scholars. Hence, in the marketing discipline customer citizenship behaviour is often referred to as the 'helpful constructive gestures exhibited by customers that are valued or appreciated by the firm, but not related directly to enforceable or explicit requirements of the individual's role' (Gruen, 1995:461).

Insight into the similarities and differences between the helpful constructive gestures performed by customers relative to other types of organisational citizenship behaviours and customer voluntary behaviours, furthermore provides a greater perspective into the underlying nature of customer citizenship behaviour. Specifically, it seems that both the organisational and customer citizenship theories make reference to voluntary, helpful behaviours performed by individuals (customers and employees), beyond their pre-defined roles expectations. The difference, however, is that organisational citizenship behaviour relates to the helpful constructive gestures performed by employees, directed towards co-workers or the retailer (such as volunteering to carry out task activities in the retail firm), while customer citizenship behaviour concerns the helpful constructive gestures performed by customers, directed towards fellow customers or the retailer (such as volunteering to help a fellow customer in using the technology) (Moorman, 1991:845; Gruen, 1995:461; Agarwal, 2016:961; Yi and Gong, 2013). Additionally, when contrasting the citizenship behaviours performed by customers with other types of customer voluntary behaviour, it is evident that customer citizenship behaviour concerns the helpful constructive gestures performed by customers to benefit the retailer and fellow customers. This is different from prosocial behaviour, information sharing and participation that are more concerned about providing assistance to fellow customers only or to benefit the firm and oneself but not fellow customers (Wu et al., 2017:430).

2.2. The link between technology acceptance and customer citizenship behaviour

Aware of the potential benefits of customer citizenship behaviour, past research has extensively investigated the underlying motives driving this behaviour (Anaza, 2014; Balaji, 2014; Bartikowski and Walsh, 2011; Bettencourt, 1997; Cheng et al., 2016; Gruen, 1995; Nguyen et al., 2014; Shamim et al., 2015; Yi and Gong, 2008; Zhu et al., 2016). It was further noted that among the studies conducted, a number of scholars specifically seem to favour research on the impact of relationship quality and related factors, such as affective commitment, on customer citizenship behaviour (Curth et al., 2014; Xie et al., 2017; Chiu et al., 2015; Balaji, 2014; Wu et al., 2017). These studies are important, considering that affective commitment is seen as a major driving force of customer citizenship behaviour (Curth et al., 2014:149).

However, as positioned earlier, what has not yet been accounted for in extant literature, is an understanding of the extent to which customers' technology acceptance and affective attachment towards the technology impacts on their citizenship behaviours for a retail experience. The relationships are likely, considering that the rationale for providing helpful constructive gestures to both fellow customers and the retailer can be explained by the social exchange theory that serves as the main theoretical framework for predicting customer citizenship behaviour (Blau, 1964). The theory posits that when people receive benefits from others, they feel obligated to reciprocate. This behaviour may especially transpire when customers feel that they have received exceptional treatment beyond the expected norm, and which may contribute to them having greater intentions to reciprocate and be helpful to the retailer (Groth, 2005:13). For example, when customers benefited from exceptional treatment from the retailer and have

positive beliefs and feelings of affective attachment towards the digital technology, they may want to return the favour by advocating the advantageous of the technology to fellow customers and helping them to benefit as well by using the technology. Additionally, retailers may benefit if more customers are using their digital technologies.

More research, however, is needed to gain clarity on this matter that may be well worth investigating. New digital technologies are significantly changing the customer retail experience and customer citizenship behaviour may be highly beneficial to assist fellow consumers interacting with the digital technologies and to improve their overall customer retail experience. It may be useful to gain insight into existing customers' technology acceptance beliefs and affective attachment attitudes towards the digital technologies and to verify the extent to which the factors are interconnected and may drive customer citizenship behaviours towards fellow customers and retailers.

Hence, the subsequent section provides more insight into the post-usage technology acceptance belief factors, affective commitment attitude and customer citizenship behaviours that were selected for further investigation in this study. Insight is also provided into the potential relationships among these constructs and that informed the development of the research hypotheses.

3. Conceptual model and hypotheses

The theoretical model is presented in Fig. 1 and is further explained in this section.

3.1. Technology acceptance and post-usage beliefs

Past empirical research has studied customers' technology adoption behaviour extensively and several attempts have been made to identify the factors driving technology acceptance. Three of the most widely applied models in the retail environment to date include: the theory of reasoned action (Fishbein and Ajzen, 1975); the theory of planned behaviour (Ajzen, 1985); and the technology acceptance model (Davis et al., 1989). While these models propose different motivational drivers, they all predict that users' beliefs of technology will impact their attitudes and so their technology-related behaviour.

In recent years, Venkatesh et al. (2012) developed the more extensive unified theory of acceptance and use of technology framework

(that is, the extended UTAUT). This framework comprises several factors representing beliefs that users form of technology. The model includes important constructs from earlier technology adoption models, as well as other factors considered relevant and important within the technology environment. The belief factors of the extended UTAUT model have also been empirically confirmed as relevant within the post-usage stage of consumer technologies. Consumers may develop these beliefs after they have used the technological services (Venkatesh et al., 2011). Furthermore, earlier studies have found this model's belief factors to be relevant to the retail environment (Liu and Forsythe, 2011; Park et al., 2015).

Accordingly, this article focuses on the extended UTAUT, using it as the theoretical foundation. This was decided on the contentions that:

- 1) the model expands the theoretical horizons of earlier technology adoption models,
- 2) the model substantially improves the explanations for variance found in earlier technology acceptance models, and
- 3) the belief factors of the model are relevant to the post-consumption stage of technology usage and can be applied to the retail context.

Furthermore, as shown in Fig. 1, five belief factors of the extended UTAUT were then examined due to their potential significance to the retail environment. The *performance expectancy* factor is similar to the 'perceived usefulness' construct in the technology acceptance model and relates to an individual's expectations of the benefits to be gained from using a chosen technology to perform predetermined activities. Benefits may include being able to accomplish tasks faster and increased productivity. The *effort expectancy* factor refers to how easily users expect to operate a chosen technology and is similar to the 'ease of use' construct of the technology acceptance model. *Social influence* refers to customers' perceptions of whether persons of importance, such as family and friends, would support their using a chosen technology. *Facilitating conditions* focuses on the user's view that the computerised infrastructure is in place to support the use of the chosen technology. Lastly, the fun or pleasure experienced when using the technology is termed as *hedonic motivation* and is important to the user when deciding whether or not to use a technology. This factor is similar to the 'perceived enjoyment' construct of the technology acceptance model (Venkatesh et al., 2012:159, 161, 178).

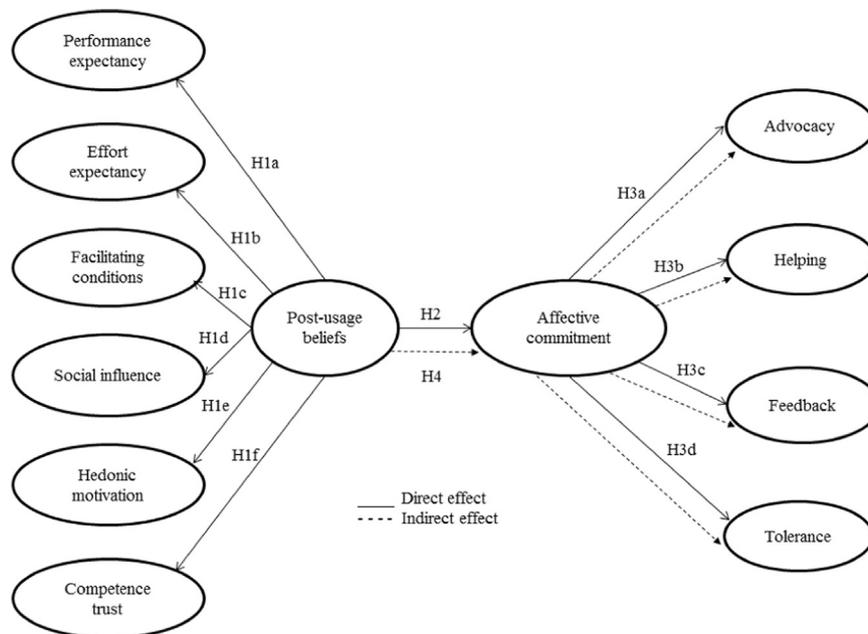


Fig. 1. Conceptual model.

Additionally, customers' trusting beliefs of the digital technology were analysed. This factor is important as customers may experience uncertainty when using a given technology, and gaining their trust in an online environment would be indicative of their belief in the technology's ability to perform and hence may predict future actions (Grabner-Kräuter and Faullant, 2008:485–486). Therefore, the competence aspect of trust was examined and related to the degree to which the digital technology would be reliable, dependable and free of technology-related errors (Johnson, 2007).

Prior to examining the relationships of the technology belief factors with other constructs in the proposed model, though, it was necessary to first determine the extent to which they resonate under a higher-order factor ('post-usage beliefs'). Extant research has not yet provided an account of this matter. Previous studies merely confirmed the relevance of the extended UTAUT technology belief factors in the post-consumption stage without giving much consideration about the extent to which they may resonate under a higher-order factor (Venkatesh et al., 2011; Tam et al., 2018; Wang et al., 2014). Knowledge of the presence of a higher-order factor, however, could assist in decision-making and ensuring an empirical model that is parsimonious in nature is developed. Hence, with reference to the perceptions of existing users of a digital technology service, it was hypothesised that:

(H1a). *Performance expectancy is a positive first-order indicator of the higher-order factor of post-usage beliefs*

(H1b). *Effort expectancy is a positive first-order indicator of the higher-order factor of post-usage beliefs*

(H1c). *Facilitating conditions is a positive first-order indicator of the higher-order factor of post-usage beliefs*

(H1d). *Social influence is a positive first-order indicator of the higher-order factor of post-usage beliefs*

(H1e). *Hedonic motivation is a positive first-order indicator of the higher-order factor of post-usage beliefs*

(H1f). *Competence trust is a positive first-order indicator of the higher-order factor of post-usage beliefs*

3.2. Affective commitment as an outcome of post-usage beliefs

As further shown in Fig. 1, this article's interest was in the affective dimension of commitment that is considered a forward-looking attitude (Gustaffsson et al., 2005).

Affective commitment is grounded in the relationship marketing theory. Relationship marketing is formally defined as a process of 'attracting, maintaining and – in multi-service organizations – enhancing customer relationships' (Berry, 1983:25), and is generally used by retailers to build relationships with customers. Due to the ongoing and long-term nature of relationship marketing practices (Dwyer et al., 1987:13), the interface between a retailer and a customer will widen over time to include multiple touchpoints, actions and interactions that may be delivered through direct and online communication channels (Grönroos, 2017:219). Therefore, in the modern retail environment, retailers can also build relationships with their customers through touchpoints involving digital technologies.

Commitment is further conducive to relationship marketing success, and relates to 'an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it' (Morgan and Hunt, 1994:22–23). Affective commitment is then representative of the strength of a relationship between two parties and the commitment they develop to proceed forward (Gustaffsson et al., 2005:211). Affective commitment is measured by a person's level of affective attachment, identification and involvement with the firm (Allen and Meyer, 1990). The value of affective commitment in the online retail environment is also well recognised. For

example, previous studies have uncovered the connection between online relationship marketing practices and affective commitment to the retailer (Boateng and Narteh, 2016), and also explored the impact of affective commitment to the service website on customer loyalty (Bilgihan and Bujisic, 2015). In this research, the interest was in measuring customers' level of affective commitment to the digital technology service, and to assess the extent to which consumers are attached and attracted to the service and believe it has a great deal of meaning to them.

This study furthermore supported the perspective that customers' post-usage technology beliefs could affect their attitudes of affective commitment. Earlier studies conducted by Venkatesh et al. (2011), Tam, Santos and Oliveira (2018) as well as Wang et al. (2014) confirmed the relevance of post-usage performance expectancy, effort expectancy, facilitating conditions, competence trust, social influence and hedonic motivation on post-usage attitudes. It seems that in the post-consumption stage of digital technology usage, it may be necessary for consumers to reflect upon their digital experiences and to develop an attitude about the technology that is informed by their post-usage beliefs and that may ultimately affect their behaviours. What has not yet been accounted for, however, is the extent to which the higher-order factor post-usage beliefs, representing all six post-usage technology belief factors, would impact on customers' post-usage perception of affective commitment in the retail environment. This study argues that this relationship is plausible, considering the empirical evidence presented by Venkatesh et al. (2011), Tam et al. (2018) and Wang et al. (2014), and the fact that affective commitment is seen as a forward-looking attitude that may develop after consumption. Hence, it is further hypothesised that, with reference to the perceptions of existing users of a digital technology service:

(H2). *The higher-order factor of post-usage beliefs has a positive and significant impact on affective commitment in the post-usage stage*

3.3. Customer citizenship behaviour resulting from affective commitment

Customer citizenship behaviour can arise in many different types of actions that may be advantageous to the retailer, and which customers may perform in appreciation of the retail experience without any remuneration in return (Groth, 2005). As indicated in Fig. 1, this study was specifically interested in customers' helping and advocacy behaviour involving direct customer involvement, as well as tolerance and feedback behaviour that is directed towards the retailer and may indirectly assist in improving the retail experience for fellow customers. In a retail setting, *customer helping behaviour* may involve assisting others to use a product or service, while *advocacy* by positive word of mouth could entail recommending a retailer's products or services to others by highlighting their positive qualities. *Tolerant* customers may have patience when the retailer's service does not meet their desired expectations, and *feedback behaviour* could involve consumers commenting on their experiences and making suggestions to the retailer for improving the offering (Yi and Gong, 2013:1280–1281).

Considering the link between affective commitment and customer citizenship behaviour, it furthermore appears that affectively committed customers are likely to engage in customer citizenship behaviour that would benefit the retailer. The broader literature on commitment and customer citizenship behaviour support this perspective. Particularly, the commitment literature note that commitment is symbolic of a customers' intention to continue their relationship with the other party, such as a retailer, whose wellbeing they are concerned about. Commitment is seen as an indicator of social exchange, where committed customers feel a higher obligation to ensure that both parties (e.g. the customer and the retailer) are satisfied and benefit from the relationship. This behaviour can be attributed to the fact that highly committed customers would be willing to reciprocate effort on behalf of a retailer in recognition of previous benefits received (Bettencourt,

1997:388). Patterson et al. (2003:2081) hold a similar perspective and note the possibility for reciprocating behaviour especially among affectively committed customers. The customer citizenship behaviour literature in return underscores the principles of the social exchange theory (Blau, 1964) where, as mentioned before, customer citizenship behaviour is considered as the outcome of customer reciprocity. Hence, it is plausible that affective commitment may lead to a variety of citizenship behaviours customers may perform in appreciation of the benefits received from the retailer.

This study was then concerned about the impact of affective commitment on customer citizenship advocacy, helping, tolerance and feedback. Previous research indicate that affectively committed customers who identify with and perceive the service provider as their friend are likely to say positive things about the service provider to other customers. The rationale for this behaviour is that affectively committed customers want the service provider, such as a retailer, to experience success and are comfortable in recommending the service provider to others who may also benefit from its services (Fullerton, 2011:95). Hence, affectively committed customers tend to act as ‘evangelists’ and aim to persuade others of the benefits of purchasing and using the product from which they have benefitted themselves (Kemp et al., 2014:131). Moreover, affectively committed customers may even be willing to extend their assistance beyond purchase and help fellow customers in using the service correctly or to address problems experienced in using the service. Positive and significant relationships have been found between affective commitment and consumer helping behaviour in various service contexts (Curth et al., 2014:151; Choi and Lotz, 2018:614).

With respect to the relationship between affective commitment and tolerance, extant research argue that customers who have an emotional bond with the service provider (e.g. retailer) and are affectively committed are more likely to oversee service failures and maintain their commitment (Ro and Mattila, 2015:99; Tektas, 2017:857), as they want to avoid negative consequences for their relationship with the provider that would accordingly harm the mutual beneficial relationship (Ro and Mattila, 2015:99). Contrastingly, affectively committed customers may be more willing to provide constructive feedback (such making suggestions to the retailer on improving the technology), as they are driven by a strong intention to help and would not need to be concerned that their positive feedback will harm their relationship with the retailer (Liu and Mattila, 2015:216).

These relationships between affective commitment and the various forms of customer citizenship behaviours, however, require further testing and verification among existing users of digital technologies in a retail environment. Accordingly, based on the above discussion it was hypothesised that, regarding the perceptions of existing users of a digital technology service:

(H3a). *Affective commitment in the post-usage stage has a positive and significant impact on customer citizenship advocacy*

(H3b). *Affective commitment in the post-usage stage has a positive and significant impact on customer citizenship helping*

(H3c). *Affective commitment in the post-usage stage has a positive and significant impact on customer citizenship feedback*

(H3d). *Affective commitment in the post-usage stage has a positive and significant impact on customer citizenship tolerance*

Ultimately, testing these relationships in the context of this study would allow more insight to be obtained into customers’ behaviour beyond continuous intention in the post-usage stage. It would also permit the verification of the extent to which the generally accepted view that customers’ technology beliefs impact attitude and behaviour would actually result in customer citizenship behaviour directed towards retailers and fellow customers of the digital technology services in the post-usage stage. Extant research has not yet provided a

comprehensive account of these matters.

3.4. The mediating effect of affective commitment

Support for the assessment of affective commitment attitude as a mediating variable on the relationship between post-usage technology acceptance beliefs and customer citizenship behaviours were found in extant literature on relationship marketing, customer citizenship and technology acceptance.

Specifically, relationship marketing literature acknowledges customer commitment as a key mediator between customers’ evaluations of organisational performance and their future relationship intentions (Morgan and Hunt, 1994; Fullerton, 2005:1373). There also seems to be a general view that affective commitment is a key mediating variable in service relationships (Fullerton, 2005:1383). Choi and Lotz (2018:607, 620, 628) empirically confirmed this perspective in research that involved service customers’ beliefs and customer citizenship behaviours. In their research among customers in retail service settings it was found that affective commitment attitudes will mediate the relationship between beliefs and customer citizenship behaviours, such as helping, advocacy, tolerance and feedback.

Technology acceptance research also advocate the importance of customer attitudes when assessing technology beliefs and behaviours. Prior studies have found empirical significant relationships between the belief factors of the extended UTAUT and post-usage attitudes that ultimately impacted on consumers’ behavioural intentions (Tam et al., 2018; Venkatesh et al., 2011). Dwivedi et al. (2017) conducted a meta-analysis and structural equation modelling study and based on their analysis of 162 prior studies on technology acceptance and use concluded that customer attitudes are central to behavioural intentions and usage. It was also found that customer attitudes perform a partial mediating role on the relationships between some UTAUT factors (performance expectancy, effort expectancy, facilitating conditions and social influence) and behavioural intentions.

Interestingly, Venkatesh et al. (2012) excluded attitudes from the extended UTAUT model that was initially designed for application in the pre-consumption stage of technologies. However, against the background discussion provided in this section it seems that attitudes are important in the post-consumption stage of technology usage and should be considered when assessing post-usage technology beliefs and behaviours. Attitudes could play a supporting role in connecting consumers’ post-usage technology beliefs and their resulting behaviours. In the post-consumption stage of digital technology usage, it may be necessary for customers to reflect upon their digital experiences and to develop an attitude about the technology (such as affective commitment) that could, considering the previous studies noted in this section, ultimately strengthen their intentions to perform future behaviours, such as customer citizenship behaviours.

Subsequently, it was finally hypothesised that:

(H4). *Affective commitment in the post-usage stage mediates the relationship between the higher-order factor of post-usage beliefs and customer citizenship behaviours*

4. Research methodology

4.1. Questionnaire and measurements

Previously validated measurement scales were adopted to measure the constructs of the proposed model. The measurement items were aligned to the study’s context, but careful consideration was given to ensure the item stems were retained. The questionnaire was pre-tested amongst 41 respondents from the target population, who were requested to rate their level of agreement with each item statement on a five-point Likert scale with anchors ‘1’ (strong disagreement) and ‘5’ (strong agreement). A few minor corrections were made before the field

Table 1
Respondent demographic information.

Category	Online Sample n = 391	Offline Sample n = 142
Gender		
Male	57.4%	51.4%
Female	42.6%	48.6%
Age range		
18–26 years	4.6%	29.6%
27–35 years	17.2%	43.0%
36–47 years	30.0%	23.2%
48–66 years	39.2%	3.5%
67 years and older	9%	0.7%
Employment status		
Self-employed	18.0%	3.5%
Full-time employed	70.4%	73.9%
Part-time employed	2.6%	12.7%
Full-time student	–	4.9%
Housewife or Househusband	–	1.4%
Retired	6.7%	1.4%
Unemployed	2.3%	2.1%
Marital status		
Single	19.4%	41.5%
Married	61.0%	31.0%
Living with a partner	9.8%	23.9%
Divorced or separated	8.5%	2.1%
Widowed	1.3%	1.4%

study was executed.

In the final questionnaire to assess competence trust, three items from the Johnson (2007) scale were used: can rely on the technology to execute transactions reliably, technology related errors are quite rare and the technology is very reliable. The remaining belief factors were assessed with the measurement scales provided by Venkantesh et al. (2011). Four items were used to assess performance expectancy (is useful in my daily life, helps me to carry out my transactions more quickly, increases my productivity and assists me in carrying out my transactions more efficiently); three items to examine effort expectancy (easy to use the technology, learning to use the technology is easy and easy to become skilful at using the technology); three items to assess facilitating conditions (have the necessary resources to use the technology, have the knowledge necessary to use the technology and assistance is available when difficulties are experienced in using the technology); three items to examine social influence (people influencing my behaviour in general think that I should use the technology, people important to me think I should use the technology and people in my social circle think that I should use the technology) and three items to assess hedonic motivation (using the technology is fun, using the technology is enjoyable and using this technology is entertaining). Affective commitment was assessed with the three-item scale provided by Nusair and Hua (2010): easy to become attached to the technology, the technology has a great deal of attraction to me and the technology has a great deal of personal meaning to me. The customer citizenship behaviours were assessed with the measurement scales provided by Yi and Gong (2013). Three items were used to measure advocacy (say positive things about the technology to other customers, recommend the technology to other customers and encourage friends and relative to use the technology); four items to examine helping (assist other customers if they need help in using the technology, help other customers if they seem to have problems in using the technology, teach other customers to use the technology correctly and give advice to other customers regarding the technology); three items to measure feedback (inform the retail firm if I have a useful idea to improve the technology, comment about good service received from the technology to the retail firm, inform the retail firm when I experience a problem in using the technology) and three items to assess tolerance (willing to put up with it if technology service delivered is not as expected, willing to be patient if

error occurs in the delivery of the technology service and willing to adapt if having to wait longer than normally expected to receive the technology service).

4.2. Sampling procedure, data collection and analysis

The self-administered survey was conducted in South Africa, with retail banks offering digital financial services selected as the research context. The proposed sample size was set at 500, which was deemed adequate for conducting structural equation modelling involving a large number of constructs, as recommended by Hair et al. (2010). Over a three-month period in 2017, the questionnaires were distributed to respondents who used at least one mobile banking app of the five main retail banks in South Africa. The participants were requested to comment on their perceptions of the mobile banking app service they use most often. A research agency provided access to its database of mobile banking app users. A link to the questionnaire was e-mailed to all the respondents on the database who were selected to participate in the survey, with participation being completely voluntary. Upon completion of the electronic questionnaire, the results were automatically captured into an Excel sheet, allowing the respondents to remain anonymous. However, the researchers were unable to obtain enough responses using this method, so fieldworkers were also employed to physically distribute the questionnaire in the field. The fieldworkers received training about the study and were instructed to only survey respondents forming part of the target population. Potential respondents were approached in public places and invited to complete the questionnaire, where participation remained voluntary and anonymous. If the respondent did not want to complete the survey, the next available respondent was approached. Prospective respondents who indicated that they are making use of at least one mobile banking app of one of the five main retail banks in South Africa and who agreed to participate in the survey were requested to complete the printed self-administered questionnaire and to return the questionnaire to the fieldworker.

The final realised sample was 533 respondents. All questionnaires could be retained for further analysis. Table 1 provides a summary of the demographic information obtained from the respondents who completed the online survey (online sample) as well as the group of respondents who completed the printed self-administered questionnaire (offline sample).

From Table 1 it is evident that similar results were obtained from the online and offline samples in three of the four categories assessed. In both samples more male than female respondents participated in the survey, a little over 70% of the respondents are full-time employed and the majority of the respondents are either single or married. With respect to the age categories assessed, it seems that in both samples the majority of the respondents are 18–47 years of age. However, there is also a relative large group of the online sample (39.2%) that are 48–66 years of age compared to the only 3.5% of offline respondents grouped in this age category. The respondents who participated in the online survey therefore seem to be a bit older than the respondents who completed the printed self-administered questionnaire.

Overall, the combined sample provides an inclusive representation of the perceptions of South African mobile banking app users, as measured by gender, age as well as employment and marital status. Furthermore, the combined sample represents the behaviours and opinions of current mobile banking app users in South Africa that were all subjected to the same questionnaire (which they had to complete themselves) and whose demographic profiles appear to be relatively similar. Subsequently, the findings of the combined sample are reported in this study.

The descriptive results then indicated that for the combined sample the construct means ranged from 3.07 to 4.39, while the standard deviations range from 0.67 to 0.73, thereby confirming that overall the respondents leaned towards the strong agreement anchors of the

Table 2
Measurement model statistics.

Variable	First-order factor loadings	Second-order factor loading	Composite reliability	Average variance extracted
Post-usage beliefs (PB)			0.93	0.68
<i>Performance expectancy (PE)</i>	0.81–0.90	0.84		
<i>Effort expectancy (EE)</i>	0.85–0.87	0.85		
<i>Facilitating conditions (FC)</i>	0.56–0.75	0.91		
<i>Social influence (SI)</i>	0.92–0.96	0.65		
<i>Hedonic motivation (HM)</i>	0.90–0.94	0.80		
<i>Competence trust (CT)</i>	0.70–0.88	0.87		
Affective commitment (AC)	0.87–0.94		0.93	0.81
Advocacy (A)	0.89–0.94		0.94	0.83
Helping (H)	0.86–0.96		0.96	0.86
Feedback (F)	0.65–0.88		0.81	0.60
Tolerance (T)	0.82–0.87		0.88	0.71

All loadings were significant at $p < 0.001$.

measurement scales assessed.

To analyse the theoretical model, the structural equation modelling approach was followed, as suggested by Hair et al. (2010). It entailed using SPSS and MPlus 8.1 to assess measurement model fit and to examine the parameters of the structural equation model.

5. Results

5.1. Measurement model assessment

Upon initial inspection of the results, discriminant and convergent validity problems were detected in the measurement model that excluded the second-order factor that warranted this model unsuitable for further analysis.

The second-order factor ‘post-usage beliefs’ was subsequently added to the measurement model. The re-specified model delivered adequate fit statistics: $X^2/df = 3.71$, $CFI = 0.92$, $TLI = 0.91$, $RMSEA = 0.075$ (Van de Schoot et al., 2012; Wheaton et al., 1977). As shown in Table 2, the standardised item loadings of all first- and second-order variables are above the 0.5 threshold level. Evidence is also provided of construct reliability and convergent validity, as the composite reliability values all exceed the cut-off value of 0.7, and all average variance extracted values are above 0.5 (Hair et al., 2010).

As can be determined from Table 3, for each construct, the square root of the average variance extracted is greater than the respective correlation of the construct with any other construct, thus providing evidence of discriminant validity (Fornell and Larcker, 1981).

Finally, SPSS 25.0 was used to regress each of the individual belief factors on the remaining five belief factors. In all instances, the variance inflation factor (VIF) values were lower than 3, proving that multicollinearity was not a problem among the six belief factors investigated.

Following these results, the decision was made to continue with the measurement model that includes the second-order post-usage belief factor, as it has construct validity and thus can be deemed superior to the measurement model that excluded the second-order factor. Accordingly, were accepted, as all the belief factors investigated loaded significantly as positive first-order indicators of the higher-order factor

Table 3
Correlations with variance extracted on the diagonal.

	PB	AC	A	H	F	T
PB	0.68					
AC	0.79	0.81				
A	0.74	0.68	0.83			
H	0.53	0.48	0.67	0.86		
F	0.52	0.57	0.53	0.50	0.60	
T	0.52	0.53	0.48	0.47	0.66	0.71

All correlations are significant at $p < 0.05$.

of post-usage beliefs and contributed to the overall validity of the measurement model.

5.2. Structural model assessment

The structural model that included the second-order factor delivered adequate fit indices (Hair et al., 2010): $X^2/df = 3.82$, $CFI = 0.92$, $TLI = 0.91$, $RMSEA = 0.076$. As presented in Table 4, the standardised regression weights range from 0.50 to 0.81 and are all significant at $p < 0.001$. Therefore, H2 and H3a–H3d were also accepted.

Finally, bootstrapping was performed using a 95% bias corrected confidence interval and 5 000 resamples to verify the mediating role of affective commitment. Table 5 provides a summary of the statistical results.

The bootstrapping of the indirect effects revealed that post-usage beliefs only had significant indirect relationships with advocacy (0.20; $p < 0.001$; 95% CI[0.09, 0.30]), feedback (0.34; $p < 0.001$; 95% CI [0.20, 0.47]) and tolerance (0.24; $p < 0.001$; 95% CI[0.09, 0.38]) through affective commitment. Furthermore, the direct effects were significant between post-usage beliefs and advocacy (0.54; $p < 0.001$), help (0.40; $p < 0.001$) as well as tolerance (0.28; $p < 0.05$). Therefore, it can be concluded that affective commitment has a partial mediating effect on the relationships between post-usage beliefs and advocacy as well as between post-usage beliefs and tolerance. Affective commitment has no mediating effect on the relationship between post-usage beliefs and helping and fully mediates the relationship between post-usage beliefs and feedback (Zhao et al., 2010:201). Support for research hypothesis H4 was therefore found with respect to all relationships investigated, except for the mediating effect of affective commitment on the relationship between post-usage beliefs and helping behaviour.

The structural model results are graphically presented in Fig. 2.

5.3. Common method bias

Careful consideration was given in the field study to ensure respondent participation would be anonymous, voluntary and confidential, and that previously validated, easy to understand

Table 4
Structural model statistics.

Structural path	Std. coefficient	p-value	Result
H2: PB→AC	0.81	0.001**	Supported
H3a: AC→A	0.71	0.001**	Supported
H3b: AC→H	0.50	0.001**	Supported
H3c: AC→F	0.58	0.001**	Supported
H3d: AC→T	0.54	0.001**	Supported

** Two-tailed statistical significance at $p < 0.001$.

Table 5
Mediation analysis.

Structural path	Indirect effect				Direct effect		Findings
	Std. coefficient	p-value	LLCI	ULCI	Std. coefficient	p-value	
PB→A	0.20	0.001**	0.09	0.30	0.54	0.001**	Partial mediation
PB→H	0.13	0.094	- 0.03	0.26	0.40	0.001**	No mediation
PF→F	0.34	0.001**	0.20	0.47	0.18	0.06	Full mediation
PB→T	0.24	0.001**	0.09	0.38	0.28	0.010*	Partial mediation

** Two-tailed statistical significance at $p < 0.001$.

* Two-tailed statistical significance at $p < 0.050$.

measurement scales would be used to prevent common method bias. After the fieldwork was completed, the Harman's single factor test evidenced that given the Eigen value of 0.46, the majority of the covariance among the variables did not result from the presence of a single factor. A common latent factor (CLF) test was also conducted and provided further evidence that the data set did not present any common method bias concerns. No differences greater than 0.2 were detected between the standardised regression weights of the measurement model that included the CLF and the model that excluded it. Subsequently, it was not necessary to retain the CLF in the structural equation model analysis (Podsakoff et al., 2003).

6. Discussion

As expected, it seems that in a retail environment of less real-time face-to-face interactions with retail employees, customers' affective attachment towards the digital technology will drive their direct and indirect citizenships behaviour to fellow customers who rely on them for advice and help in using the technologies. Customers who are affectively committed towards the digital technology will engage in direct citizenship behaviours (extra-role behaviours like helping and advocacy) to promote service literacy among potential fellow customers and to assist them in performing their expected in-role behaviour, such as correctly interacting with the digital technology. Additionally, customers with an affective commitment attitude may also engage in indirect citizenship behaviours (extra-role behaviours like providing feedback to the retailer, making suggestions for improving the customer retail experience and being tolerant if the service does not meet desired

expectation levels). Customers' emotions in return are impacted by their beliefs about the retail technology.

These research findings extends the extant research on technology acceptance by providing more insight into its connection with customer citizenship behaviour directed towards fellow customers and retailers in the post-consumption stage of digital technology usage. Studies exploring technology acceptance theory have predominantly been concerned with customers' initial adoption of the technology (Davis, 1989; Davis et al., 1989), or continuous intention in the post-consumption stage (Venkatesh et al., 2011). The current study broadens thinking by teasing out the complex relationships between digital technology beliefs impacting on consumers' attitudes of affective commitment and their citizenship behaviour in the post-consumption stage, involving advocacy, helping, tolerance and feedback behaviour. These findings are important – considering the rapid adoption of digital technologies in the retail environment, it has become necessary to understand how customers' beliefs of digital technologies would drive them to directly or indirectly help fellow customers.

Several theoretical and managerial implications could also be derived from the individual hypotheses tested that are further explained below.

6.1. Theoretical implications

The theoretical implications relating to post-usage technology beliefs and affective commitment are addressed first.

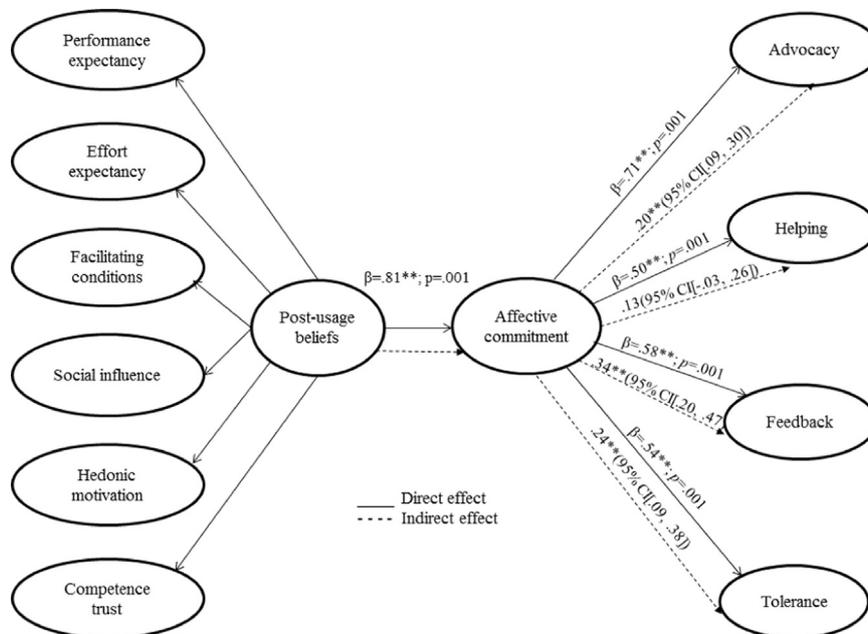


Fig. 2. Structural model results.

6.1.1. Post-usage technology beliefs impacting on attitudes of affective commitment

As noted before, confirmation was obtained that all six technology acceptance belief factors investigated are first-order indicators of the higher-order factor of post-usage beliefs (). These findings are significant for several reasons.

First, the extended UTAUT framework (Venkatesh et al., 2012) makes provisions for belief constructs from earlier technology adoption models (Fishbein and Ajzen, 1975; Ajzen, 1985; Davis et al., 1989) as well as other types of beliefs consumers may maintain about technologies. As all six extended UTAUT belief factors examined were found relevant in this study, the research findings subsequently offer confirmation of a wide range of typical beliefs about technologies that may also be of importance to consumers using digital retail technologies. Furthermore, while the belief factors of the extended UTAUT were initially positioned as perceptions consumers may maintain prior to consumption (Venkatesh et al., 2012), this study's findings concur with the work presented in other studies, noting their relevance to the post-consumption stage of digital usage (Tam et al., 2018; Wang et al., 2014). Hence, performance expectancy, effort expectancy, facilitating conditions, social influence, hedonic motivation and competence trust also appear to represent factors that may be relevant for assessment of existing customers' perceptions about digital retail technologies.

A further important implication of the research findings is that extant research has not yet provided an account of the extent to which belief factors of the extended UTAUT may resonate under a higher-order factor. Previous studies primarily focused on verifying the relevance of these factors in the post-consumption stage without giving much consideration about the degree to which they may resonate under a higher-order factor (Venkatesh et al., 2011; Tam et al., 2018; Wang et al., 2014). Hence, confirmation of is also significant as it contributed to the development of an empirical model that is parsimonious in nature and that may be of guidance to future researchers interested in exploring the link between technology acceptance and customer citizenship behaviours with respect to other new wave technologies.

Confirmation of the impact of customers' post-usage technology beliefs on affective commitment (H2), is also noteworthy as the combination of post-usage beliefs assessed had a relative strong impact on affective commitment (0.81; $p < 0.001$). Therefore it seems that the technology belief factors examined in this study have a high likelihood to impact on existing users' attitudes of affective attachment towards the digital retail technology.

Confirmation of H2 is also significant as it offers further insight into the types of attitudes that post-usage beliefs of the extended UTAUT may affect. Specifically, previous studies have confirmed the impact of post-usage performance expectancy, effort expectancy, facilitating conditions, competence trust, social influence and hedonic motivation on post-usage attitudes in general or a backward looking type of attitude, such as customer satisfaction, where customers reflected on their past experiences with the technology to form an attitude about satisfaction (Venkatesh et al., 2011; Tam et al., 2018; Wang et al., 2014; Gustaffsson et al., 2005). The findings from this study then indicate that post-usage beliefs of the extended UTAUT may also affect customers' attitudes of affective commitment that is generally regarded as a forward looking attitude (Gustaffsson et al., 2005). Based on their favourable post-usage beliefs of retail technologies, existing users may become attached and attracted to the service, believe it has a great deal of meaning to them and therefore consider a future relationship with the retailer. Ultimately, these findings are important as in the modern retail environment, retailers can build relationships with their customers through touchpoints involving digital technologies. Based on the study's findings it then seems that in a digital retail environment, perceptions of affective commitment (that is perceived as a core dimension of relationship marketing) can be strengthened by concentrating on the factors of the extended UTAUT and ensuring existing users of digital retail technologies have favourable beliefs about them. Perceptions of

affective commitment may then contribute to customers being willing to continue their relationship with the retailer and to engage in helpful citizenship behaviours, as further explained below.

6.1.2. Customer citizenship behaviours impacted by attitudes of affective commitment

Considering confirmation of H3a–H3d, it seems that the findings of this study underscores the principles of the social exchange theory (Blau, 1964) that explains the connection between commitment and customer citizenship. As noted in the literature review, commitment is seen as an indicator of social exchange, where committed customers feel a higher obligation to ensure that both parties (e.g. the customer and the retailer) are satisfied and benefit from the relationship. Customer citizenship behaviour is considered as the outcome of customer reciprocity. This study's findings then confirms that in a digital retail environment, affectively committed customers are likely to engage in customer citizenship behaviour that would benefit the retailer and fellow customers. In particular, it seems that existing users of the digital technologies, who are affectively committed, are likely to say positive things about the technology to fellow customers and to provide help where required so others could also enjoy the service, which would then benefit the retailer as well. Furthermore, aligned to the findings of earlier research (Ro and Mattila, 2015:99; Tektas, 2017:857), the current study offers confirmation that customers who have an emotional bond with the retailer and are affectively committed are more likely to be tolerant and to oversee service failures, while at the same time they would also be more willing to provide constructive feedback that could assist the retailer in improving the retail technology (Liu and Mattila, 2015:216).

Hence, following these findings it seems that amidst the retail technological developments, customers as good social citizens are making a conscious choice about the types of retail environment they want to experience and believe fellow consumers should experience. Specifically, it appears that emotionally motivated customers tend to embrace inter-customer helping behaviour opportunities to voluntary engage in direct and indirect citizenship behaviour, to ensure fellow customers understand and are able to interact with the technologies and that retailers are aware of the improvements required for enhancing the customer retail experience.

Finally the assessment of the mediating role of affective commitment presented interesting results. As explained in the literature review, relationship marketing literature acknowledges customer commitment as a key mediator between customers' evaluations of organisational performance and their future relationship intentions (Morgan and Hunt, 1994; Fullerton, 2005:1373) and there also seems to be a general view that affective commitment is a key mediating variable in service relationships (Fullerton, 2005:1383). Dwivedi et al. (2017) further acknowledged the mediating role of attitudes on the relationships between UTAUT factors and behavioural intentions.

Aligned to the prophecy of these scholars as well as the empirical research conducted by Choi and Lotz (2018:607, 620, 628), this study also found evidence that affective commitment attitudes may strengthen the relationship between customer beliefs and customer citizenship behaviours (H4). However, full mediation was only obtained on the relationship between post-usage beliefs and feedback behaviour. It therefore seems that when existing users have favourable post-usage beliefs about the digital retail technology, affective commitment will considerably strengthen their decisions to make constructive suggestions to the retailer for improving the digital technology. Contrastingly, while they would be willing to help fellow customers in using the technology they believe have many benefits, their feelings of affective commitment will have no bearing on the matter. Given the relative large direct standardised effect size obtained between post-usage beliefs and helping behaviour (0.40; $p < 0.001$), it seems that customers' favourable beliefs about the digital technology are sufficient in motivating them to help fellow customers in using the technology correctly.

Furthermore, affective commitment only seems to have a partial mediating effect on the relationship between post-usage attitudes with advocacy and tolerance. Hence, when customers have favourable perceptions about digital retail technologies, their decisions to advocate the benefits to fellow customers and being tolerant of service failures will only be partially strengthened by their feelings of affective commitment. Their favourable beliefs about the technology may also directly impact on their behaviour, especially with respect to advocacy where a relative large direct standardised effect size was obtained (0.54; $p < 0.001$).

A further implication of these findings then is that it seems while Venkatesh et al. (2012) excluded attitudes from the extended UTAUT model that was initially designed for application in the pre-consumption stage of technologies, attitudes are still important in the post-consumption stage of technology usage and should be considered to strengthen the relationships between post-usage beliefs and customer citizenship behaviours. In the post-consumption stage of digital retail technologies, it seems necessary for customers to reflect upon their digital experiences and to develop an affective commitment attitude that could strengthen their decisions to perform customer citizenship behaviours, such as advocacy, tolerance and feedback. However, the direct relationships between post-usage beliefs and customer citizenship behaviours should also receive attention, especially regarding the helping citizenship behaviour, where affective commitment attitudes do not seem to play a role in strengthening the relationship.

6.2. Managerial implications

From a practical perspective, it seems that retail customers have several expectations of digital technologies. Therefore, to enhance customers' retail experience, it is suggested that retailers focus on the six belief factors of the extended UTAUT that have been found significant and relevant among existing users of digital retail technologies.

With respect to the **performance expectancy factor**, it is recommended that retailers focus on the functional benefits of their digital technologies and ensure the performance of the technologies adhere to customer expectations. In the modern retail environment, these required actions may translate into being aware of digital technology developments and finding differentiated ways to enhance the customer retail experience. *For example*, it is suggested that retailers embrace developments in augmented and virtual reality technology to seek opportunities to enhance the physical in-store experience, provide customer convenience and deliver quicker and more effective services. Customers should have the perception that the technology is fast and will enhance their productivity (Venkatesh et al., 2012:178). The **effort expectancy factor** may be addressed by remembering that customers expect digital technologies that are easy to use and require little effort. Hence, in designing digital strategies, retailers should be flexible and understand the dynamics involved when customers interact with the technologies. *For example*, the digital technologies offered must be user-friendly, the interface should have an easy layout, and the technologies should be pre-tested to ensure they adhere to retail customers' needs. Registration procedures should also be simple and easy to follow (Megadewandanu, 2016). The **social influence factor** should also receive attention. To benefit from social influence beliefs, communication strategies should be employed to create a perception that it is socially acceptable to use these technologies. *For example*, a marketing campaign can be launched to demonstrate the social desirability of using the digital technologies, creating the perception that the behaviour is expected from peer groups. Additionally social media discussions could also assist in enhancing the social acceptance of the technology and creating the perception that it is a requirement of modern lifestyle. Social media, such as YouTube, Facebook and Twitter are widely accepted globally (Alalwan et al., 2018:134) and thus represents an effective medium to stimulate conversations about the social desirability of the technology. To attend to the **facilitating conditions factor**,

retailers should ensure that their technological developments are aligned to the infrastructure available to customers. *For example*, strategies could be employed to ensure the digital technologies are compatible with customers' handheld mobile devices. To address the **hedonic motivations factor**, retailers should design technologies that are enjoyable and fun to use. *For example*, retailers could embrace the various digital developments in the retail environment and focus on creating interactive and customised experiences that are pleasurable and meaningful to customers. Marketing campaigns can be launched to convince customers of the novelty and innovativeness of the technology (Alalwan et al., 2018:134) or gamification could be considered to create a more fun experience (Megadewandanu, 2016; Baptista and Oliveira, 2017). The **trust factor** should also receive attention and retailers should design strategies that would develop customers' trust in the technology. *For example*, retailers could ensure that their digital technologies meet high technical standards and that operational efficiency is achieved to ensure customers develop trust in the competence of the technology. Customers should also be trained in the secure use of the service (Alalwan et al., 2018:135), which may enhance their perceptions of trust. Email campaigns can assist in this regard.

Ultimately, the successful execution of these strategies may result in retail customers having more favourable perceptions about the digital technologies, which may then contribute to their feelings of affective attachment and so strengthen their intentions to perform future behaviours, such as customer citizenship behaviours.

This article also has social implications. Society may benefit from digital technologies in many ways, such as having access to educational benefits, important healthcare benefits and the bridging of the digital divide. Nevertheless, effectively engaging with digital technologies would require an adequate level of service literacy, generally defined as 'consumers' domain-specific expertise related to a coproduction task' (Mende et al., 2017:139). This study's research findings may then be useful in this regard by offering a pathway for policymakers, advocacy groups and government agencies to motivate customers to become involved in the process and to engage in citizenship behaviour, to educate fellow consumers, and to help them in becoming more literate in using digital technologies.

7. Conclusions, limitations and future research directions

The aim of the study was to introduce and test a social exchange model and to identify factors that would predict customer citizenship behaviours towards fellow customers and retailers. The research findings then assisted in addressing the aim by verifying the extent to which post-usage technology beliefs and affective commitment are interconnected and may drive customer citizenship behaviours in a retail setting.

Investigating the link between technology acceptance and customer citizenship behaviour furthermore was important, considering the rapid adoption of digital technologies in the retail environment, where it has become necessary to understand how customers' beliefs of digital technologies would drive them to directly or indirectly help fellow customers in adopting and using the technologies. Accordingly, the research findings extend the extant research on technology acceptance by providing more insight into its connection with customer citizenship behaviour directed towards fellow customers and retailers in the post-consumption stage of digital technology and the extent to which affective commitment strengthens these relationships.

Finally, while the present study makes a valuable contribution to extending the technology acceptance theory, the sampling approach limited the generalisability of the findings. It is recommended that the same study be repeated on a broader scale, following a more representative sampling method to confirm the extent to which the research findings can be extended to the larger population. Future research can also consider including a cognitive attitude in the model (such as satisfaction) and verifying the degree to which emotional and

cognitive attitudes strengthen the effect of technology beliefs on customer citizenship behaviour. It may also be important to compare differences between age categories and to determine if older consumers may hold different beliefs and attitudes about digital technologies than younger consumers, which ultimately may affect their willingness to engage in customer citizenship behaviours.

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