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Examining the determinants and outcomes of mobile app engagement - A longitudinal perspective

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ABSTRACT

Through undertaking a longitudinal study with 474 consumers over a 12-month period and conducting structural equation modelling, this research provides insight on the determinants and outcomes of consumer engagement with a retailer's m-commerce application. Critical outcomes of positive attitudes towards the brand and loyalty towards the brand derive from consumer engagement with a retailer's m-commerce app. Drawing upon the TAM, TTF and SDT, the research established perceived ease of use, perceived usefulness, convenience and enjoyment influencing engagement with an m-commerce application, while customisation of the app has an enhancing influence on engagement. The findings assert that utilitarian variables of perceived ease of use, perceived usefulness and convenience become even more influential on engagement with a retailer's m-commerce application following continued retention, while enjoyment becomes less important. However, the research finds that the location of use has an effect on the variables influencing engagement with an m-commerce application.

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1. Introduction

Smartphone devices and mobile applications (apps) have become an integral part of consumers' everyday life (Kim, Lin, & Sung, 2013). Recent figures highlight that over 70% of consumers total digital minutes are spent on mobile devices, an increase of 28% since 2011 (Lipsman & Lella, 2017; Kim et al., 2013). Smartphone apps are defined as software that is downloadable to a mobile device, which prominently displays a brand identity, often via the name of the app and the appearance of a brand logo or icon, throughout the customer experience (Bellman, Potter, Treleaven-Hassard, Robinson, & Varan, 2011). Such apps allow consumers to shop, access information and keep up to date with their social networks, anytime, anywhere (Alnawas & Aburub, 2016). In contrast to websites, mobile apps are able to utilise the hardware and software features of the smartphone device to deliver a unique experience to users, i.e. scanning of bar codes through the use of the built in camera function, offering location specific content with the use of GPS and informing customers with the use of push notifications. Thus, mobile apps are end-user software applications that can extend the smartphone's capabilities by enabling users and app providers to perform tasks beyond those capable on a website

(Purcell, Entner, & Henderson, 2010).

The proliferation of smartphone devices and the subsequent advancement in technology has seen retailers adopt apps as a channel of service delivery and communication (Wang, Malthouse, & Krishnamurthi, 2015; Wang, Yuan, Turel, & Tu, 2015). While retailers compete for screen space on a consumer's smartphone device (Magrath & McCormick, 2013), only one retailer appears in the top 10 most popular apps across the Apple App store and the Android Play store. Numerous studies have explored the variables influencing the adoption of mobile applications (Muñoz-Leiva, Climent-Climent, & Liébana-Cabanillas, 2017; Gupta & Arora, 2017; Chaouali, Souiden, & Ladhari, 2017; Yang, 2013; Hsiao, Chang, & Tang, 2016; Kang, Mun, & Johnson, 2015; Kim, Yoon, & Han, 2014; Venkatesh, Thong, & Xu, 2012; Lin, Lu, Wang, & Wu, 2011; Deng, Lu, Wang, Ahang, & Wei, 2010). However, while initial adoption is essential for the dissemination of an innovation, such adoption does not affirm engagement with the innovation (Hong, Thong, & Tam, 2006). Previous research asserts that consumers are willing to download mobile applications, however, 50% of smartphone applications are subsequently deleted from a consumer's device following download (Linton & Kwortnik, 2015). Bellman et al. (2011) suggest that mobile applications provide firms an effective means for high levels of customer engagement. Despite this, limited academic research has explored the factors influencing customer engagement with m-commerce mobile applications and the subsequent outcomes of customer engagement

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(Kim et al., 2013). Thus, while retailers are adopting m-commerce applications as a channel of service delivery, firms are unaware of the factors influencing customer engagement with a retailer's m-commerce application and the subsequent outcomes for the brand, as a result, this research aims to address this gap in knowledge. We conduct such analysis through a longitudinal study with adopters of apparel retailers' m-commerce applications. Through assessing customer attitudes following the retention of the m-commerce app after one month and then again after twelve months, the research is able to analyse the variables influencing customer engagement and the outcomes of engagement with the application over a sustained period of time.

2. Conceptual development

2.1. Customer engagement

Customer engagement is heralded as having numerous benefits such as positive attitudes and commitment towards the brand, increased purchase and loyalty (Evanschitzky et al., 2012). Previous research has conceptualised engagement as focused attention (Chapman, Sanjeebhan, & Webster, 1999), curiosity (Jacques, Preece, & Carey, 1995) and appeal (Jennings, 2000). Customer engagement is thought to share similar characteristics with the concept of interactivity and use (Quesenberry, 2003). The verb 'to engage' has several meanings including: to employ and hire, to bind by contract and to take part (Oxford Dictionary, 2010), affirming a behavioural focus. Thus, while no universally agreed definition or set of attributes pertaining to engagement exist (Cheung, Lee, & Jin, 2011), generally, engagement embraces cognitive, affective and behavioural elements of individuals' experiences (Brodie, Hollebeek, Juric, & Ilic, 2011) and thus considered a multidimensional construct. Hollebeek, Glynn, Brodie (2014, p. 154) conceptualise consumer engagement as "a consumer's positively valence cognitive, emotional and behavioural brand-related activity during, or related to, specific consumer/brand interactions". Hollebeek et al. (2014) conceptualisation of consumer engagement highlights the multidimensionality of the construct. Therefore, customer engagement behaviour can be considered as 'behavioural manifestations that have a brand or firm focus, resulting from motivational drivers' (Van Doorn et al., 2010, p.254). As a result, such manifestations may either be positive or negative resulting in either approach or avoidance behaviour towards the brand. Therefore, despite being subject to varying interpretations, consumer brand engagement is often considered a motivational construct, with unpredictable intensity. It involves firstly an object (i.e. branded app), secondly a subject (i.e. the consumer) and thirdly it has valence (i.e. either positive or negative) (Hollebeek & Chen, 2014; Dessart, Veloutsou, & Morgan-Thomas, 2015).

The literature outlines numerous variables influencing the motivation for consumer brand engagement, particularly within online brand communities (Hammedi, Kandampully, Zhang, & Bouquiaux, 2015; Hollebeek et al., 2014; Osei-Frimpong & McLean, 2018). Consumer brand engagement is often dependent on the needs, motives and goals of the consumer which essentially defines their rules of participation. Engagement is considered interactive and context dependent (Brodie et al., 2011; Dolan, Conduit, Fahy, & Goodman, 2016), thus the variables motivating consumer engagement reported in other contexts might differ. Therefore, it is important that we turn our attention to the context of m-commerce mobile applications to further our understanding of the variables influencing customer engagement with such branded apps. The subsequent section will outline variables that previous studies have conceptualised and empirically examined in influencing the adoption of mobile applications.

2.2. Variables influencing customer behaviour

As previously outlined, while initial adoption is essential for the dissemination of an innovation (such as that of a branded m-commerce mobile app), such adoption does not affirm engagement with the innovation (Ozturk, Bilgihan, Nusair, & Okumus, 2016; Hong et al., 2006). Thus, it is important that we investigate the variables capable of influencing customer behaviour in relation to m-commerce mobile applications.

The theoretical foundations and variables for this study are derived from the Technology Acceptance Model (TAM: see Davis, 1989), Self Determination Theory (SDT: see Ryan & Deci, 2000) and Task-Technology Fit Theory (TTFT: see Goodhue, 1995). Based on Fishbein and Ajzen's (1985) theory of reasoned action (TRA), the TAM has been extensively used in understanding customer behaviour towards accepting and using technology. TAM pertains that when customers are presented with new technology, the perceived ease of use and the perceived usefulness of the technology will influence a customer's decision on whether to use it or not (Yang, 2013). While the impact of the ease of use and usefulness in technology acceptance has been extensively studied, the initial acceptance of an innovation does not ascertain engagement with a brand's technology (Hsieh, Rai, & Keil, 2008). Thus, while customers may initially decide to download an app (use a technology), they could stop interacting with the app if they consider too much effort is required.

Furthermore, Task-Technology Fit theory (TTF) suggests that a technology is more likely to be adopted and used if the capabilities of the technology match accordingly to the tasks that the individual wishes to perform (Goodhue, 1995). Thus, the customer should believe that the technological system and action to be carried out fit together (Irick, 2008). The fit between the 'task characteristics' and the 'technology characteristics' can lead to positive perceptions of Task-Technology Fit, which provides convenience for the consumer (Goodhue, 1995). While criticisms have been aimed at the TTF theory in its ability to predict technology acceptance and adoption (like the TAM), as an individual is required to utilise the system before making a judgement on the fit between the technology and the customer's tasks (Irick, 2008). However, such criticisms can also be viewed as a strength of TTF as it provides an insight into why consumers may stop using particular technologies rather than focusing on initial adoption. Thus, as this study examines customer behaviour following one-month and twelve months use and retention of an m-commerce application, it provides an important theoretical insight into the level of customer engagement with branded m-commerce applications.

Moreover, Self-Determination theory provides understanding regarding the motivation behind consumer choices without external influence (Ozturk et al., 2016). According to Ryan and Deci (2000) Self-Determination theory proposes two motivations for technology adoption. Firstly, intrinsic motivation which refers to completing a task due to the love and enjoyment from the activity. On the other hand, extrinsic motivation refers to obtaining a result, possibly in the pursuit of a goal (Roca & Gagné, 2008). For example, two cyclists may cycle for different reasons (1) for the enjoyment (intrinsic motivation) or (2) for the exercise and improved health benefits (extrinsic motivation). Thus, consumers may use a retailer's m-commerce mobile application for goal directed utilitarian purposes of completing a particular task or for the purpose of intrinsic enjoyment.

As a result, through integrating each theory (TAM, TTF and SDT) the research captures technology, social and self-related variables in the development of the theoretical model that examines the role of perceived ease of use, perceived usefulness, convenience and enjoyment in explaining consumers level of engagement with

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