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Is it all about consumer engagement? Explaining continuance intention for utilitarian and hedonic service consumption

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ABSTRACT

This paper compares the explanatory power of consumer engagement (CE) regarding service continuance intention with the variables of attitude (utilitarian and hedonic) and satisfaction. Survey data were collected from users of mobile music ($n = 596$) and mobile parking ($n = 297$) services. The partial least squares method was applied to analyze the data. In line with expectations, the findings show that attitude and satisfaction are superior drivers of service continuance intention compared to CE when service is used for utilitarian reasons. In contrast, when service consumption is driven by hedonic reasons, CE is a stronger driver than satisfaction. However, no evidence for the superiority of CE over attitude was found in the hedonic context.

1. Introduction

Consumer engagement (CE) has attracted increasing interest among both academics and practitioners. In recent years, researchers have made great efforts to conceptualize CE (e.g., Hollebeek et al., 2014; Pansari and Kumar, 2017), develop CE measurement instruments (e.g., Algesheimer et al., 2005; Kumar and Pansari, 2016), and provide insights into CE's nomological network (e.g., Hsieh and Chang, 2016; Noguti, 2016). In addition to establishing the relationship between CE and consumer behavior (e.g., Calder et al., 2016; Pagani and Mirabello, 2011), empirical research has shown that CE is positively related to a firm's economic performance (Kumar and Pansari, 2016; Oh et al., 2017).

Research has shown that incorporating CE into empirical models improves the explained variance in consumer loyalty (Benedikt and Kunz, 2012; Dwivedi, 2015; Thakur, 2016). As Table 1 illustrates, CE has been included in these models with many other independent variables, such as satisfaction, perceived quality, and involvement. However, whether CE is a better driver of service continuance intention than other marketing concepts has received scant attention from the theoretical and statistical perspectives. Notably, in this regard, Calder et al. (2016) empirically found that the explanatory power of engagement over newspaper consumption was better than that of satisfaction. Our study adopts Hollebeek et al. (2014) view of CE and contributes to this domain by theoretically and empirically examining the relative explanatory power between engagement, attitude, and satisfaction over service

continuance intention. To explain the differences in explanatory powers, this study draws support from the general notion that consumers use services for both utilitarian (instrumental) and hedonic (pleasurable) reasons (Batra and Ahtola, 1991; Botti and McGill, 2011). Specifically, this paper proposes that the relative explanatory power varies, depending on the type of motivation for using the service.

In this study, we focus on the traditional marketing constructs of attitude and satisfaction for several reasons. Attitude is a central construct in classical theories (e.g., the theory of reasoned action and the theory of planned behavior) that aim to explain human intentions and behaviors (Madden et al., 1992). Focusing on attitude is also justified because services are consumed for hedonic and utilitarian reasons to varying degrees (e.g., Batra and Ahtola, 1991; Botti and McGill, 2011), and attitude is capable of capturing consumers' perceptions of utilitarian and hedonic benefits in service consumption (Batra and Ahtola, 1991; Voss et al., 2003). In addition, satisfaction is one of the most studied concepts in marketing, and its positive influence on consumers' intentions is well established (Szymanski and Henard, 2001).

The remainder of this paper is structured as follows. The next section presents a research model and provides background information on the constructs under examination. This is followed by the research design and the study results. The paper concludes with a discussion of the theoretical and managerial implications found and offers suggestions for future research.

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2. Theoretical background and hypotheses development

The goal of this study’s research model is to explain the variance in service continuance intention (Fig. 1). In this model, CE, attitude, and satisfaction are considered drivers of consumers’ intention to continue using a service. Because the aim of this study is to explain variance in a key construct, we focus on the relationships that are related to the dependent variable. We encourage readers who are interested in the relationships between the independent variables to familiarize themselves with the existing literature regarding CE and attitude (e.g., Bergel and Brock, 2019; Cian et al., 2014; McLean, 2018) and regarding CE and satisfaction (e.g., Calder et al., 2016; Dovaliene et al., 2015; Marino and Lo Presti, 2018; Pansari and Kumar, 2017). To summarize the current literature, attitude and satisfaction are often viewed as outcomes of CE.

2.1. Consumer engagement

In recent years, the prevalence of the engagement concept has exponentially grown in the marketing literature. To discuss engagement, researchers have applied various terms, such as “customer engagement” (e.g., Brodie et al., 2011; Hollebeek et al., 2019), “customer engagement behavior” (e.g., Jaakkola and Alexander, 2014; van Doorn et al., 2010), and “consumer brand engagement” (e.g., Hollebeek et al., 2014; Leckie et al., 2016). These terms often highlight the engagement subject (e.g.,

consumer and customer) and the engagement object (e.g., service and brand). Despite some terminological variety, many different conceptualizations are applicable independent of the engagement subject and object (see, e.g., Hollebeek et al., 2014; Kumar and Pansari, 2016; van Doorn et al., 2010). In this study, the engagement subject is a consumer and the engagement object is a service.

CE has been conceptualized in different ways (e.g., Gupta et al., 2018; Hollebeek et al., 2014; Kumar et al., 2019) and there is no consensus on the definition of engagement in the marketing literature. Nevertheless, CE research can be generally categorized into three streams: (1) the behavioral stream, (2) the psychological stream, and (3) the stream that views engagement as a combination of the behavioral and psychological dimensions.

The behavioral stream has widely adopted van Doorn et al. (2010, p. 253) definition of customer engagement behaviors: “the customers’ behavioral manifestation toward a brand or firm, beyond purchase, resulting from motivational drivers” (e.g., Bijmolt et al., 2010; Oh et al., 2017). However, Kumar et al. (2010) suggested that transactional behavior should also be included in the conceptual domain of CE. They stated that “[w]hen one envisions the different ways in which a customer can interact or ‘engage’ with the firm, purchasing from the firm naturally arises (p. 298). Accordingly, Pansari and Kumar (2017, p. 295) defined customer engagement as “the mechanics of a customer’s value addition to the firm, either through direct or/and indirect

Table 1
Positioning of the current study relative to other empirical studies in the field.

Article	CE operationalization	Output variable	Drivers besides CE	Data and context	Effect strength comparison	
					Theoretical	Empirical ^a
This study	Hierarchical component model that is based on Hollebeek et al. (2014) and consists of cognitive processing, affection, and activation ^b	Continuance intention	Attitude and satisfaction	596 and 297 responses from users of mobile services	x	x
Fang (2017)	Second-order reflective-reflective model based on Hollebeek et al. (2014)	Continuance intention and repurchase intention	Perceived usefulness	637 responses from users of branded applications		
Calder et al. (2016)	A composite construct consisting of interaction, transportation, civic orientation, discovery, and identity	Consumption	Satisfaction	10,858 responses from newspaper readers		x
Leckie et al. (2016)	Three factors from Hollebeek et al. (2014)	Brand loyalty	Involvement, participation, and brand identification	502 responses from consumers of mobile phone services		
So et al. (2016a)	Second-order reflective-reflective model comprising enthusiasm, attention, absorption, interaction, and identification	Brand loyalty	Service brand evaluation and brand trust	496 responses from consumers of travel services		
So et al. (2016b)	See So et al. (2016a)	Brand loyalty	Brand relationship quality	151 and 259 consumer responses concerning brands		
Thakur (2016)	Second-order reflective-reflective model comprising social facilitation, self-connect, intrinsic enjoyment, time filler, utilitarian, and monetary evaluation experiences	Continuance intention	Customer satisfaction, shopping convenience, and application usability	433 responses from users of mobile devices for shopping		
Dwivedi (2015)	Second-order reflective-reflective model that consists of vigor, dedication, and absorption	Loyalty intentions	Satisfaction, perceived value, and perceived quality	408 responses from mobile phone users		
Cheung et al. (2014)	The number of experience-sharing messages posted to online forum	Purchase decision	Peer consumer purchase and peer consumer review ^c	Panel data from 39,897 users of online beauty forum		
Algesheimer et al. (2005)	One factor to measure intrinsic motivation	Membership continuance intention, community recommendation intention, and community participation intention	Normative community pressure and reactance	529 responses from car club members		

^a Statistical significance testing is applied.

^b To examine relative explanatory power, this study only considers cognitive processing and affection (i.e., psychological engagement) due to reasons that are discussed in theory development.

^c This study does not examine the direct effect of engagement.

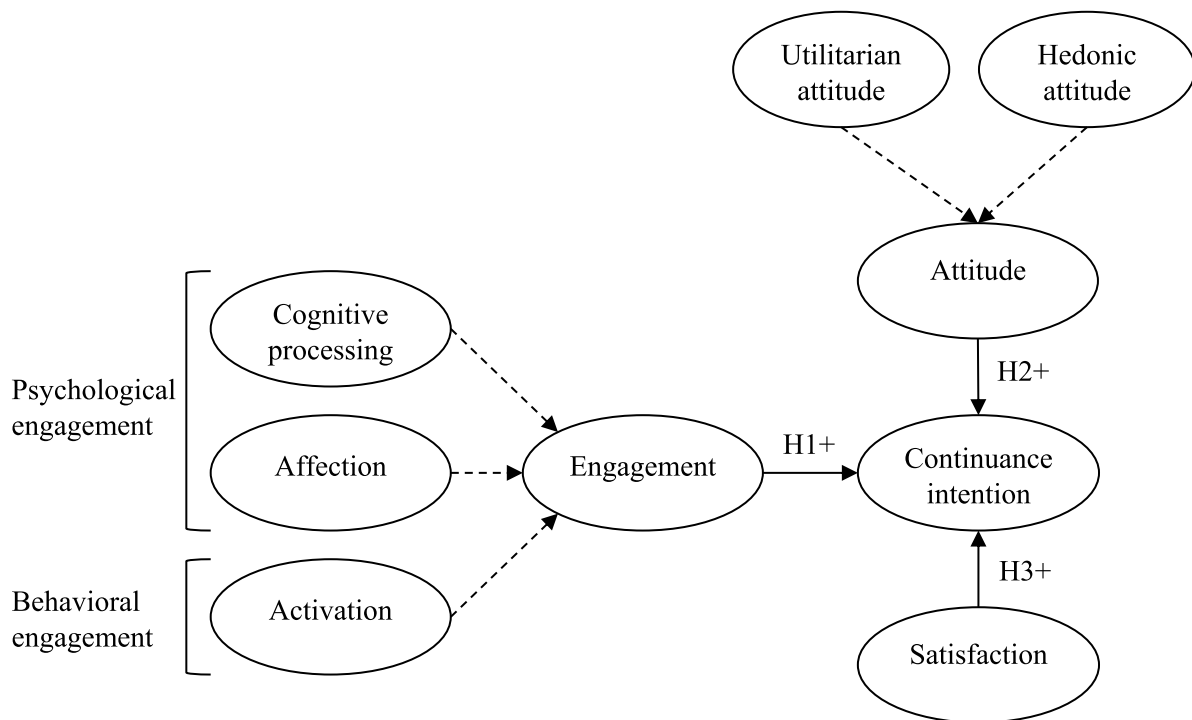


Fig. 1. Research model.

Note: Dashed lines represent the relationships between the constructs and their sub-dimensions (i.e., second-order structure).

contribution.”

Given the relatively strong consensus on the definition of behavioral engagement, the focus has shifted to different types of engagement behaviors. For example, Jaakkola and Alexander (2014) described four different engagement behaviors—augmenting, co-developing, influencing, and mobilizing—and Verleye et al. (2014) categorized them into compliance, cooperation, feedback, helping other customers, and positive word-of-mouth. In the context of brand-related social media content, Schivinski et al. (2016) divided engagement into consuming content, contributing to existing content, and creating new content. As these classifications illustrate, there is no universal typology of CE behaviors.

In the psychological stream, some researchers define engagement through cognitive involvement, absorption, and/or concentration (e.g., Cian et al., 2014; Higgins, 2006). For example, Higgins (2006, p. 442) defined the state of being engaged as “to be involved, occupied, and interested in something.” Calder et al. (2009, p. 322) conceptualized CE with a website as “a collection of experiences with the site”; their view was further adopted by Pagani and Mirabello (2011) and Calder et al. (2016). In addition, Algesheimer et al. (2005, p. 21) presented a motivational view of engagement by defining community engagement as “the consumer’s intrinsic motivation to interact and cooperate with community members” (see also Baldus et al., 2015).

Numerous studies have also considered engagement a combination of behavioral and psychological dimensions. Notably, Brodie et al. (2011) stated that customer engagement is manifested in cognitive, emotional, and behavioral dimensions that occur by virtue of interactive customer experiences. In accordance with this view, Hollebeek et al. (2014, p. 149) defined customer brand engagement as “a consumer’s positively valenced brand-related cognitive, emotional and behavioral activity during or related to focal consumer/brand interactions.” They proposed that engagement consists of three different dimensions: (1) cognitive processing (cognitive dimension), (2) affection (emotional dimension), and (3) activation (behavioral dimension). Several other studies have adopted this view (e.g., Fang, 2017; Leckie et al., 2016). Similarly, So et al. (2016a,b) emphasized consumers’ cognitive,

and behavioral responses in their engagement conceptualization; however, they proposed that engagement consists of five dimensions: identification, enthusiasm, attention, absorption, and interaction. Closely aligned with Hollebeek et al. (2014) view, Hollebeek et al. (2019, p. 166) defined customer engagement as “[a] customer’s motivationally driven, volitional investment of focal operant resources (including cognitive, emotional, behavioral, and social knowledge and skills), and operand resources (e.g., equipment) into brand interactions in service systems.”

The current study builds on Hollebeek et al. (2014) CE conceptualization, which fits Vargo and Lusch (2008) macro-foundational view of service-dominant logic (see Hollebeek et al., 2019 for an explication). In line with Hollebeek et al. (2014), cognitive processing in this study refers to a consumer’s level of service-related thinking and elaboration in a given consumer-service interaction; affection concerns the extent of a consumer’s positive service-related affect in a particular consumer-service interaction; and activation is characterized by the level of energy, effort, and time expended by a consumer on a particular service. In this study, CE is divided into two different facets: psychological and behavioral. Psychological engagement refers to cognitive processing and affection, whereas behavioral engagement concerns activation. The multidimensional nature of this CE conceptualization enables a holistic examination of engagement and its influence on consumers’ intentions.

2.2. Attitude

There is a general consensus that attitude can be conceptualized as a summary evaluation of an object (e.g., Buil et al., 2013; Fazio, 2007; Malhotra, 2005). Accordingly, Fazio et al. (1982, p. 341) defined attitude as “an association between a given object and a given evaluative category.” Attitude has further been suggested to be a function of two distinct but correlated components: hedonic and utilitarian (e.g., Batra and Ahtola, 1991; Voss et al., 2003). This distinction is partially based on the observation that “consumers purchase goods and services and perform consumption behaviors for two basic reasons: (1)

consummatory affective (hedonic) gratification (from sensory attributes) and (2) instrumental, utilitarian reasons" (Batra and Ahtola, 1991, p. 159). Per Voss et al. (2003), the hedonic dimension relates to sensations that are derived from the experience of using a service, and the utilitarian dimension relates to the functions that are performed by that service.

2.3. Satisfaction

Although minor refinements have been made and certain extensions have been added to the conceptualizations of satisfaction (Fournier and Mick, 1999; Woodruff et al., 1983), the consumer satisfaction literature is characterized by the prevalence of the confirmation-disconfirmation paradigm, which posits that satisfaction is a result of a comparison between prior expectations and perceived performance (Oliver, 1980; Tse and Wilton, 1988). Accordingly, Tse and Wilton (1988, p. 204) defined consumer satisfaction as "the consumer's response to the evaluation of the perceived discrepancy between prior expectations (or some other norm of performance) and the actual performance of the product as perceived after its consumption." Thus, although satisfaction is based on a cognitive process that captures both utilitarian and hedonic aspects of service consumption (Bolton and Lemon, 1999), it is an emotional reaction to the perceived difference between an expectation and the service's performance (Tse and Wilton, 1988; Woodruff et al., 1983).

2.4. Service continuance intention

Continuance intention is a consumer's intent to continue using a service in the post-adoption phase, and it is different from intention to use the service during the pre-adoption phase (Montazemi and Qahri-Saremi, 2015; Zhou, 2013). Thus, continuance intention represents one distinct type of behavioral intention that comes in many forms, including purchase intention, recommendation intention, and feedback intention, among others. In general, there are many widely applied models to explain a consumer's intentions, such as the theory of planned behavior (Madden et al., 1992) and the unified theory of acceptance and use of technology (Venkatesh et al., 2003). van der Heijden (2004) even compared the effect of perceived ease of use and perceived usefulness in driving the usage intention of hedonic information systems. Some studies have specifically focused on continuance intention (e.g., Bhattacharjee, 2001; Deng et al., 2010). Of these, a noteworthy mention is Montazemi and Qahri-Saremi (2015), who conducted a meta-analysis in the online banking context and found trust and usefulness as the most influential drivers of continuance intention.

2.5. Hypotheses

Motivation theory posits that both intrinsic (hedonic) and extrinsic (utilitarian) reasons drive an individual's behavior (Deci, 1975; Vallerand, 1997). The cognitive and emotional dimensions of CE are both associated with positive intrinsic experiences when using a service (Hollebeek, 2011; Hollebeek et al., 2014). The cognitive dimension concerns pleasurable absorption (Dwivedi, 2015; Hollebeek et al., 2014; Hsieh and Chang, 2016), while the emotional dimension is related to a strong positive affect and the feelings that are evoked by the interaction (Hollebeek, 2011; Hollebeek et al., 2014). Therefore, these psychological dimensions of engagement are expected to increase a consumer's intention to continue using a given service. The behavioral dimension of CE is also expected to be positively associated with continuance intention for two reasons: (1) Consumers generally want to act consistently (Trafimow and Borrie, 1999), which implies that a consumer's intentions should be aligned with his/her past behavior, and (2) a high level of activation may lead to routine behavior. In such cases, consumers will intend to act on previously learned behavioral patterns without extensive decision-making (Ouellette and Wood, 1998; Schneider and Shiffrin, 1977).

In sum, each CE dimension is expected to be positively related to a consumer's intention to continue using a service. Prior empirical research (e.g., Dwivedi, 2015; Fang, 2017; Hollebeek et al., 2014) has also found support for a relationship between CE and behavioral intentions. Thus, the following hypothesis is formulated:

H1. CE is positively related to continuance intention.

There is widespread agreement that both attitude (e.g., Madden et al., 1992; Voss et al., 2003) and satisfaction (e.g., Bhattacharjee, 2001; Deng et al., 2010) have a positive effect on consumers' behavioral intentions. Thus, the following hypotheses are formulated:

H2. Attitude is positively related to continuance intention.

H3. Satisfaction is positively related to continuance intention.

Services are consumed for both hedonic and utilitarian reasons (Batra and Ahtola, 1991; Botti and McGill, 2011; Voss et al., 2003), and these reasons influence how different antecedents drive consumer behavior (Childers et al., 2001). In essence, theoretical constructs that best capture the important aspects of service interaction (utilitarian vs. hedonic) should be the most dominant drivers of service continuance intention. Next, the focus turns to utilitarian reasons to use a service and the capability of attitude, satisfaction, and engagement to capture the utilitarian elements of service consumption.

When service consumption is primarily based on utilitarian benefits, constructs that capture the consumer's perceptions of such benefits should exhibit a stronger explanatory power over service continuance intention than concepts that do not. This should occur because the former constructs capture the primary reason for using the service, whereas the latter ones do not. The utilitarian component of attitude directly captures a consumer's evaluation of instrumental benefits (Batra and Ahtola, 1991; Voss et al., 2003), and satisfaction entails consumer evaluation of the functional and instrumental benefits of a service (Bolton and Lemon, 1999). By contrast, no single CE dimension (i.e., cognitive processing, affection, or activation) focuses on the utilitarian aspects of service consumption. In fact, Hollebeek et al. (2014) found that consumers often consider brands that predominantly focus on utilitarian aspects as non-engaging. Because CE does not directly capture the utilitarian aspects of service interaction, it should have a weaker association with service continuance intention than attitude and satisfaction do when the service is consumed for utilitarian gains.

However, narrowing the examination from overall engagement to psychological engagement (i.e., omitting activation) is reasonable because the extent to which activation *indirectly* captures the utilitarian aspects of service consumption is unclear. In general, when consumption is mainly driven by utilitarian reasons, a high correlation between utilitarian benefits and activation is expected (see, e.g., Voss et al., 2003). This would mean that activation is often a good proxy for utilitarian benefits.¹ However, a plethora of contextual factors may substantially influence how good a proxy activation is. For example, a consumer may perceive a high level of utilitarian benefits but still exhibit a low level of activation due to insufficient resources (e.g., time and money). These issues complicate the theoretical justification of a hypothesis that also includes activation. Accordingly, the following hypotheses only concern psychological engagement.²

¹ To clarify, we mean that activation is likely to indirectly capture experiences that are important for the consumer. In other words, when the motivation for service consumption is hedonic (utilitarian), activation is likely to be a good proxy for hedonic (utilitarian) benefits. In this paragraph, we examine the relative explanatory power under utilitarian motivation, and we thus expect activation to be a proxy for utilitarian benefits.

² We still provide empirical estimates that enable a comparison of the effect strength between overall engagement and the two traditional drivers (i.e., attitude and satisfaction).

H4. Attitude has a stronger association with continuance intention than does psychological engagement when service consumption is driven by utilitarian reasons.

H5. Satisfaction has a stronger association with continuance intention than does psychological engagement when service consumption is driven by utilitarian reasons.

Analogously, when a consumer's motivation for service consumption is based on its hedonic benefits, constructs that capture sensual pleasure and emotional experiences should possess greater explanatory power regarding the consumer's continuance intention than concepts that do not. Both psychological engagement dimensions (cognitive processing and affection) capture the symbolic and experiential aspects of consumption (Fang, 2017; Hollebeek et al., 2014; Leckie et al., 2016). The hedonic dimension of attitude also captures the hedonic aspects of service consumption (Batra and Ahtola, 1991; Voss et al., 2003). A consumer may have hedonic expectations regarding service consumption and consequently evaluate the service with respect to perceived hedonic experiences. For this reason, satisfaction should also be a relevant driver of service consumption that is hedonically motivated. Thus, engagement, attitude, and satisfaction are all capable of capturing the hedonic aspects of services. To assess the relative explanatory power of these constructs over service continuance intention, the nature of these constructs must be examined in greater detail.

In general, attitudes are long-term evaluations that tend to be mild regarding the strength of subjective experiences, physiological responses, and the extent of bodily expressions (Bagozzi et al., 1999). Per Schmitt (2012), attitude is an object-centered construct that represents the lowest level of connection to brands in which the brand relationship is driven by the benefits that the brand provides, but the consumer does not consider the brand either personally or socially relevant. Satisfaction can also be viewed as an object-centered construct because it relates to service performance (see Oliver, 1980; Tse and Wilton, 1988). In addition, satisfaction captures the outcomes of service consumption rather than the process-oriented experiences, which lie at the core of hedonically motivated service consumption (see Batra and Ahtola, 1991; Botti and McGill, 2011; Holbrook and Hirschman, 1982).

In contrast to the object-centered evaluations that attitude and satisfaction represent, engagement may embody self-oriented and social aspects (Schmitt, 2012). Indeed, CE is widely considered a relational construct that implies strong bonding with the engagement object (Dwivedi, 2015; Hollebeek et al., 2014); in general, cognitively engaged consumers are deeply engrossed in the service interaction, while emotionally engaged consumers experience intense emotions during the service interaction (Hollebeek, 2011; Hollebeek and Chen, 2014; Hollebeek et al., 2014). Therefore, psychological engagement is expected to capture both deeper and richer levels of hedonic experiences in service relationships than either attitude or satisfaction. Additionally, in line with Calder et al. (2016), psychological engagement focuses on a service interaction rather than the outcome of the interaction, which enables it to better capture essential interaction elements in hedonically motivated service consumption. Based on this rationale, the following hypotheses are proposed³:

H6. Psychological engagement has a stronger association with continuance intention than does attitude when service consumption is driven by hedonic reasons.

H7. Psychological engagement has a stronger association with

continuance intention than does satisfaction when service consumption is driven by hedonic reasons.

3. Method

3.1. Sample and procedure

In line with Pedersen and Nysveen (2003), a mobile parking (m-parking) application was selected to represent a service that is used for utilitarian reasons. Via this application, consumers can locate the nearest parking spaces on a map and pay the parking fee using various payment methods (e.g., credit card or invoice). The application also provides monetary savings because the consumer only pays for the true parking time (i.e., the consumer does not need to purchase a fixed amount of time). Similar to Moe and Fader (2001), a mobile music (m-music) service was chosen to embody a service that is consumed for hedonic reasons. With this mobile service, consumers can listen to millions of songs anywhere in the world. Users can create their own playlists or select ready-made lists and enjoy the music both online and offline.

Survey participants were recruited separately for these two online surveys from a Finnish online consumer panel in 2017. To do so, we cooperated with a third party, which provided access to a panel of ~30,000 consumers. Three researchers who specialize in survey research jointly designed the surveys.

There were 297 valid responses in the m-parking sample and 596 valid responses in the m-music sample. Eight cases from the m-parking dataset and twelve cases from the m-music dataset were eliminated because of missing values. A majority of the m-parking respondents were aged between 35 and 49 (36.4%) and 50–64 (29.6%) years, and the sample was slightly dominated by females (females: 60.3%; males: 39.7%). Of the respondents, 54.9% had used the service for more than one year, and 34.0% had used the application in the last seven days. In the m-music sample, the majority of the respondents were aged between 18 and 25 (28.9%) and 26–34 (28.0%) years, and the gender distribution was again almost equal (females: 54.0%; males: 46.0%). Of the respondents, 70.0% had used the m-music service for more than one year, and 76.5% had used the application in the last seven days.

3.2. Measurement

This study used established measurement scales (see Table 2). Utilitarian and hedonic attitude were measured using items from Voss et al. (2003), and satisfaction was measured using items that were adopted from Haumann et al. (2014). Cognitive processing, affection, and activation (i.e., CE dimensions) were measured using items that were adopted from Hollebeek et al. (2014). Finally, continuance intention was measured using items from Zhou (2013). All items were measured on a 7-point Likert-type scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with the exception of utilitarian and hedonic attitude, which were measured on a 7-point semantic differential scale, and the second item of satisfaction, ranging from 1 (*very dissatisfied*) to 7 (*very satisfied*). All scales applied reflective measurement, in which the direction of causality moves from the latent variable to its indicators; in formative measurement, the direction would analogously be from indicators to the latent variable (see Jarvis et al., 2003).

3.3. Common method variance

Common method variance (the variance that is attributable to sources other than actual variance in the measured construct) can undermine study results (Podsakoff et al., 2003). To test for the presence of common method variance, the marker variable approach was used (Malhotra et al., 2006). To capture potential sources of common method variance (see Podsakoff et al., 2003), two marker variables were used: (1) I do not purposely say things that offend other people, and (2) The

³ Following the logic presented previously, these hypotheses only concern psychological engagement because the extent to which activation is indirectly capable of capturing hedonic benefits remains unclear. Nevertheless, this issue is trivial because, if psychological engagement is a better driver than attitude and satisfaction, as hypothesized, considering the effect of behavioral engagement does not qualitatively change the result.

Table 2
Measurement items.

<i>Cognitive processing</i> (CR = 0.893/0.891)
1) Using [application] gets me to think about the app
2) I think about [application] a lot when I'm using it
3) Using [application] stimulates my interest to learn more about the app
<i>Affection</i> (CR = 0.922/0.926)
1) I feel very positive when I use [application]
2) Using [application] makes me happy
3) I feel good when I use [application]
4) I'm proud to use [application]
<i>Activation</i> (CR = 0.836/0.898)
1) I spend a lot of time using [application] compared to other mobile financial and insurance/music listening apps
2) Whenever I'm using a mobile financial and insurance/music listening application, I usually use [application]
3) [Application] is one of the services I usually use when I use mobile applications for financial and insurance services/music listening
<i>Utilitarian attitude</i> (CR = 0.959/0.935)
[Application] is ...
1) Ineffective – effective
2) Not helpful – helpful
3) Not functional – functional
4) Not necessary – necessary
5) Impractical – practical
<i>Hedonic attitude</i> (CR = 0.938/0.927)
[Application] is ...
1) Not fun – fun
2) Dull – exciting
3) Not delightful – delightful
4) Not thrilling – thrilling
5) Not enjoyable – enjoyable
<i>Satisfaction</i> (CR = 0.949/0.930)
1) All in all, I am very satisfied with [application]
2) Overall, how satisfied are you with [application]?
<i>Continuance intention</i> (CR = 0.853/0.914)
1) I intend to continue using [application] rather than discontinue its use
2) My intentions are to continue using [application] rather than use any alternative means
3) If I could, I would like to discontinue my use of [application]*

Notes: CR = composite reliability; * = reverse coded. The number before the slash refers to the m-parking sample; the number after the slash refers to the m-music sample.

survey was of appropriate length. Path estimates between the marker variables and continuance intention were small ($|\beta| \leq 0.020$) and were not statistically significant ($p > 0.1$), which indicated that common method variance was unlikely to be of serious concern.

4. Results

The structural model was estimated using partial least squares structural equation modeling with SmartPLS 3.2.7. This method was considered applicable for three primary reasons:

1. The aim of this study was to explain variance in a key construct. Given that the partial least squares method maximizes the variance that is explained in the dependent variable (Abdi, 2010; Hair et al., 2011), this technique aligns well with the aim of this research.
2. As stated earlier, engagement and attitude consist of sub-dimensions. In this case, second-order reflective-formative models (see Becker et al., 2012) were applied, meaning that first-order dimensions (e.g., cognitive processing, affection, and activation) were measured reflectively, but formative measurement was applied to the second-order level (e.g., overall engagement). The application of

second-order models provides a simple yet effective way to examine the total effects of engagement and attitude (i.e., structural model estimates) as well as the role of their sub-dimensions (i.e., weights).⁴ When a model includes formative variables, the partial least squares method provides more accurate estimates than covariance-based methods (Hair et al., 2019; Sarstedt et al., 2016).

3. The dependent variable (i.e., continuance intention) was not normally distributed, and the use of partial least squares is encouraged in such cases (Hair et al., 2011).

4.1. Measurement models

The reflective measurement models were firstly examined. Nearly all indicator loadings were close to or greater than 0.7, and they were significant in both samples ($p < 0.01$). However, to improve the discriminant validity at the later stage of the analysis, the first item of activation in the m-parking sample and the third item of continuance intention in the m-music sample were removed. Values for average variance extracted (AVE) and composite reliability were considerably greater than the respective common threshold values of 0.50 and 0.70 (Hair et al., 2011), which confirmed convergent validity.

Discriminant validity was assessed using Fornell and Larcker (1981) criterion. The square root of AVE for each latent variable exceeded correlations with all other latent variables (Table 3). However, in some cases, the correlation between first-order constructs and the respective formatively measured second-order construct exceeded the square root of the AVE. This result is both expected and non-critical in second-order models because higher-order constructs use the same indicators as their respective lower-order components (Becker et al., 2012; Hair et al., 2013). In addition, no item loaded higher on any reflectively measured variable than its intended construct, and the 95% bias corrected confidence intervals for the correlation coefficients of the latent variables did not include 1 in any case. Therefore, discriminant validity was established.

Next, the formative measurement models (i.e., CE and attitude in the second-order level) were evaluated. Because high levels of collinearity make separating the distinct effect of a particular indicator on a latent variable difficult (Diamantopoulos and Winklhofer, 2001), the variance inflation factor (VIF) values were firstly examined. Because these values were all well below the critical level of five (Hair et al., 2011), multicollinearity was not considered a major concern.⁵ An analysis of the significance of the weights revealed the following results. For m-parking, cognitive processing = -0.360 , affection = 0.543 , activation = 0.808 , utilitarian attitude = 0.945 , and hedonic attitude = 0.087 . For m-music, cognitive processing = -0.064 , affection = 0.460 , activation = 0.648 , utilitarian attitude = 0.887 , and hedonic attitude = 0.132 . In both samples, all weights were statistically significant at $p < 0.01$, with the exception of hedonic attitude in the m-parking sample ($p > 0.05$) and cognitive processing in the m-music sample ($p > 0.10$). Notably, the weight for cognitive processing was negative and significant in the m-parking sample ($p < 0.01$). Bivariate correlations with cognitive processing and affection were higher than correlations between cognitive processing and the formatively measured CE construct. In addition,

⁴ Drawing support from Jarvis et al. (2003), the three dimensions of CE are formative at the second-order level because each dimension has a distinct meaning, and they can be viewed as causes of overall engagement. Using the confirmatory tetrad analysis method, Hepola et al. (2017) found empirical support for the superiority of formative specification at the second-order level.

⁵ For m-parking, the VIF values were as follows: cognitive processing = 2.815 , affection = 3.164 , activation = 1.253 , utilitarian attitude = 1.456 , and hedonic attitude = 1.456 . For m-music, the VIF values were as follows: cognitive processing = 1.961 , affection = 3.262 , activation = 2.193 , utilitarian attitude = 3.094 , and hedonic attitude = 3.094 .

Table 3
Construct correlations and descriptive statistics.

	COG	AFF	ACT	CE	UTI	HED	ATT	SAT	INT
COG	0.858 (0.855)								
AFF	0.801 (0.699)	0.864 (0.871)							
ACT	0.311 (0.489)	0.443 (0.737)	0.848 (0.864)						
CE	0.464 (0.654)	0.712 (0.917)	0.933 (0.939)	n/a n/a					
UTI	0.371 (0.510)	0.536 (0.783)	0.639 (0.722)	0.703 (0.811)	0.908 (0.861)				
HED	0.652 (0.511)	0.743 (0.760)	0.447 (0.640)	0.610 (0.751)	0.559 (0.823)	0.867 (0.848)			
ATT	0.416 (0.533)	0.583 (0.808)	0.645 (0.735)	0.725 (0.832)	0.994 (0.990)	0.616 (0.885)	n/a n/a		
SAT	0.424 (0.443)	0.592 (0.752)	0.711 (0.687)	0.779 (0.774)	0.754 (0.766)	0.548 (0.716)	0.768 (0.778)	0.950 (0.932)	
INT	0.364 (0.566)	0.559 (0.793)	0.732 (0.812)	0.790 (0.871)	0.783 (0.761)	0.485 (0.680)	0.796 (0.774)	0.781 (0.737)	0.815 (0.917)
Mean	3.61 (3.76)	4.14 (4.67)	5.60 (5.18)	5.27 (4.91)	5.61 (5.21)	4.33 (4.93)	5.52 (5.15)	5.44 (5.16)	5.33 (4.94)
SD	1.48 (1.53)	1.45 (1.41)	1.42 (1.52)	1.31 (1.35)	1.25 (1.25)	1.17 (1.21)	1.21 (1.20)	1.29 (1.34)	1.31 (1.51)

Notes: COG: cognitive processing; AFF: affection; ACT: activation; CE: consumer engagement (formative construct); UTI: utilitarian attitude; HED: hedonic attitude; ATT: attitude (formative construct); SAT: satisfaction; INT: continuance intention; n/a: not applicable; SD: standard deviation. Square root of AVE presented on the diagonal. The first number refers to the m-parking sample; the second number (in parentheses) refers to the m-music sample.

positive bivariate correlations were found between cognitive processing and the formative construct, suggesting a suppressor effect (Cenfetelli and Bassellier, 2009). Following Cenfetelli and Bassellier (2009), cognitive processing was removed from the m-parking sample for subsequent analyses. The final weights in this sample were as follows: affection = 0.258 and activation = 0.816.

4.2. Structural models

The path weighting scheme was used to estimate Model 1, in which CE consisted of both psychological and behavioral dimensions (Table 4). In addition, the repeated indicator approach (mode B) was applied to the second-order models (see Becker et al., 2012). The structural model’s quality was evaluated in terms of percentage of variance explained (R^2) for the target construct. Values for continuance intention were excellent ($R^2_{m-parking} = 0.738$; $R^2_{m-music} = 0.759$). Additionally, blindfolding was used to obtain Stone-Geisser criterion (Q^2) values. All the values were above zero (continuance intention: $Q^2_{m-parking} = 0.471$; $Q^2_{m-music} = 0.484$), indicating the model’s predictive relevance (Hair et al., 2011).

Table 4
Structural model estimates.

Predictor	Group	Model 1		Model 2	
		Path coefficient	Confidence interval	Path coefficient	Confidence interval
CE	M-parking	0.300***	[0.199; 0.408]	0.056 ns	[-0.011; 0.125]
	M-music	0.643***	[0.550; 0.692]	0.366***	[0.278; 0.446]
Attitude	M-parking	0.385***	[0.280; 0.493]	0.460***	[0.364; 0.577]
	M-music	0.161***	[0.094; 0.253]	0.321***	[0.228; 0.455]
Satisfaction	M-parking	0.257***	[0.168; 0.330]	0.394***	[0.299; 0.463]
	M-music	0.107***	[0.049; 0.189]	0.200***	[0.101; 0.282]

Notes: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$; ns: not significant. Bias-corrected and accelerated bootstrap with one-tailed significance testing (significance level: 0.05) applied. Model 1: CE consists of psychological and behavioral dimensions; Model 2: CE consists of psychological dimensions.

CE was found to have a positive influence on continuance intention in both samples, which supports H1. Similarly, both attitude and satisfaction were positively associated with continuance intention, which supports H2 and H3.

To test hypotheses H4–H7, we constructed Model 2, in which engagement consisted of only psychological dimensions (i.e., cognitive processing and affection; see Table 4). To statistically compare the path coefficients, we used the procedure proposed by Chin et al. (2013). Specifically, we ran the partial least squares algorithm using 5000 bootstrap samples. We then obtained the percentile p -values by comparing the path coefficients in the bootstrap samples. For example, if attitude had a larger coefficient than psychological engagement in 4500 out of 5000 samples, it would result in a p value of 0.1 for H4 (in 10% of the samples, the results contradicted the hypothesis). The results indicated that attitude ($\Delta\beta = 0.404, p < 0.01$) and satisfaction ($\Delta\beta = 0.338, p < 0.01$) were significantly stronger drivers of continuance intention than psychological engagement in the m-parking sample.⁶ Thus, H4 and H5 are supported. In the m-music sample, psychological engagement was a significantly stronger driver of continuance intention than satisfaction ($\Delta\beta = 0.166, p < 0.01$). No statistically significant difference for psychological engagement vs. attitude was found ($\Delta\beta = 0.045, ns$). This supports H7 but rejects H6.

5. Discussion

5.1. Theoretical contributions

The present study contributes to the emerging literature on CE by examining the relative explanatory power of engagement, attitude, and satisfaction regarding service continuance intention.

The relative explanatory power of engagement, attitude, and satisfaction was examined under the assumption that the constructs that align best with a consumer’s consumption motivation (hedonic vs. utilitarian) are superior drivers of service continuance intention. The results found that psychological engagement is a better driver of continuance intention than satisfaction when a service is used for

⁶ The analysis showed that cognitive processing still had a significant negative weight; thus, it was not included in any model in the m-parking sample.

hedonic reasons. This finding supports the view that engagement captures both a deeper and a richer level of process-related hedonic experiences (see Hollebeek, 2011; Hollebeek et al., 2014) than satisfaction, which is an object-centered evaluation of and/or reactions to interactions. However, we found no differences with this respect concerning the explanatory power of CE and attitude. In addition, attitude and satisfaction are better drivers of service continuance intention than psychological engagement when consumption is driven by utilitarian reasons. This result was expected because neither of the psychological engagement dimensions (i.e., cognitive processing and affection) captures the utilitarian aspects of service consumption.

This novel contribution extends the findings of Calder et al. (2016), who only empirically compared the explanatory power of CE and satisfaction over newspaper consumption. Using Hollebeek et al. (2014) conceptualization of CE, our paper additionally provides theoretical justification for the difference in explanatory power between engagement, attitude, and satisfaction. Central to our contribution is the elucidation of the relative explanatory power in two different service settings (utilitarian and hedonic). Because studies typically focus on establishing relationships rather than comparing the strength of associations, this represents a rare contribution in the marketing and consumer literature. In essence, this finding helps us understand the role of CE relative to attitude and satisfaction in modern marketing.

Finally, affection and activation were the most essential CE dimensions in explaining service continuance intention, while the effect of cognitive processing was either non-significant or negative. In a similar manner, Leckie et al. (2016) found that the effect of cognitive processing on loyalty was negative, and Hollebeek et al. (2014) found that cognitive processing did not influence brand usage intention. Although there may be explanations (as hypothesized in this study) that account for the positive relationship between cognitive processing and usage intention, there appear to be counter-mechanisms that either mitigate or even reverse this effect. In particular, considering that consumers have limited information processing capabilities and that they may lack the motivation to engage in challenging cognitive processing (Petty and Cacioppo, 1986) may be fruitful. This observation calls for the development of a measure of cognitive engagement that could better distinguish positively-valenced cognitive processing (e.g., listening to good music), which is characterized by absorption (Dwivedi, 2015; Hsieh and Chang, 2016), from negatively-valenced cognitive processing (e.g., using a parking service), which creates negative emotions (Garbarino and Edell, 1997).

5.2. Managerial implications

The results of this study offer valuable insights for managers. In general, engagement, attitude, and satisfaction are all relevant drivers of service continuance intention. Importantly, ~74% of the variation in a consumer's intentions was explained in the utilitarian context, and the figure was slightly higher (~76%) in the hedonic context. These are impressive numbers, and they emphasize the managerial necessity to holistically engage consumers, provide satisfying experiences, and increase positive attitude towards services in driving continuance intention.

However, managers must understand that the relative importance of these constructs depends on customers' reasons (utilitarian vs. hedonic) for using the service. Specifically, whereas psychological engagement (and attitude) should be a top priority when consumption is driven by hedonic reasons, managers should focus on attitude and satisfaction when a service is used for utilitarian reasons. Therefore, managers should consider consumers' motivations for using the service, which will enable the measurement of the most important drivers of service continuance intention and the implementation of relevant marketing strategies and tactics. For example, managers could survey customers and track relevant measures monthly. Generally, banking and parking services are examples of services that are used primarily for their

utilitarian benefits, whereas entertainment services (e.g., movies and music) are mostly consumed for hedonic reasons.

This study also offers suggestions for managing CE. In particular, managers are encouraged to closely consider affection and activation because they are the most salient dimensions of CE when service continuance intention is explained. To elicit affection, managers should consider how a service could offer personally meaningful experiences to customers. For example, managers could apply marketing initiatives that aim to build connections between a customer's identity and a company's brand. To bolster activation, although managers can initially apply incentives, such as competitions and raffles, a consumer's long-term activation is likely best achieved by providing a superior consumption experience.

5.3. Limitations and future research

The results of this research should be interpreted relative to certain limitations. Notably, this paper relies on cross-sectional data; thus, general limitations regarding causality apply. Future research could use longitudinal and/or experimental approaches to further support the findings. In addition, although two different services were examined, the data were obtained from users of mobile services, and there is no certainty that the results could be replicated in all service contexts. Nevertheless, the theoretical justifications of the hypotheses do not rely on unique attributes of (these two) mobile applications. This provides some assurance that the results could be extended to services in general; however, identifying boundary conditions for the findings is recommended in the future. Further, this study only compared the effects of CE on continuance intention with those of attitude and satisfaction. Future studies could expand that knowledge by considering other drivers (e.g., commitment and trust) and output variables (e.g., recommendation intention and feedback intention). Finally, the present findings invite scholars to rethink the operationalization of cognitive processing to better reflect the positive and negative valences of CE.

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