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Consumer behavior in switching between membership cards and mobile applications: The case of Starbucks

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ABSTRACT

Not every branded app can successfully draw consumers' attention and continued usage. Although smartphone apps are effective tools for retaining customers, few studies have examined consumers' switching behavior with reference to branded apps. This study applies the push–pull–mooring (PPM) framework to delineate the determinants of consumers' switching behavior between traditional membership cards and branded apps. Structural equation modeling analysis was conducted on data from 329 users of the myStarbucks app and Starbucks card. The findings indicate that both a push effect, in terms of poor aesthetic design, and pull effects, including locatability, transaction convenience, economic benefits, and gamification, positively affect switching intention. Furthermore, perceived substitutability not only has a direct effect on switching intention but also moderates the relationship between pull effects and switching intention. Finally, in addition to having a direct influence on switching intention, inertia moderates the relationship between push effects and switching intention. This understanding helps managers to develop strategies that can effectively retain consumers through branded apps.

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1. Introduction

In recent years, companies strive to develop new strategies for marketing, advertising, and promotions in response to trends in mobile services (Heo & Kim, 2017). Smartphone apps are end-user software programs designed to facilitate transactions, personal productivity, and leisure on specific operating system platforms (Dube & Helkkula, 2015). Companies have increasingly replaced their traditional loyalty cards or keychain tags with branded apps (Goldman, 2010), because smartphone apps can effectively boost reward programs aimed at encouraging consumer retention through various kinds of value-added services. For instance, consumers can use “myStarbucks (Starbucks' branded app)” to accumulate stars and receive the latest news from the vendor. More specifically, smartphone apps are effective tools for retaining customers as they provide a variety of content and services that consumers can access anytime and anywhere (Alnawas & Aburub, 2016). Despite this trend, getting customers to switch from traditional membership cards to branded apps has not always been successful. For example, Lim, Bentley, Kanakam, Ishikawa, and

Honiden (2015) found that a smartphone app can fail when consumers believe its features are not functional or usable. In particular, consumers who are not accustomed to using mobile phones fear a loss of benefits due to the lack of a physical card, and they are typically resistant to branded apps. When consumers fail to switch, they may feel disappointed with the service provided by the company and decide to terminate their relationship with the brand.

Previous studies have investigated the typology (Hsu & Lin, 2015; Zhao & Balagué, 2015), design and development, market analysis (Kim, Kankanhalli, & Lee, 2016; Zhao & Balagué, 2015), adoption, and usage (Dube & Helkkula, 2015; Kim, Wang, & Malthouse, 2015, 2016; Peng, Chen, & Wen, 2014) of smartphone apps, but few studies have explored consumers' switching behavior, especially with a focus on the reasons why consumers switch from membership cards to mobile branded apps. While most of them shed light on paid apps (Dube & Helkkula, 2015; Ghosh & Rao, 2014; Hsu & Lin, 2015; Kang, 2014; Kim et al., 2016), relatively few studies use branded apps as their research subject. Branded apps are useful for brand building (Chen, Liu, & Dai, 2013). The value created by branded apps is different from that of paid apps because branded apps are used to facilitate consumer engagement with those brands, whereas paid apps aim to provide services to customers for revenue generation and profit

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(Kim et al., 2016). Furthermore, Peng et al. (2014) argued that the value derived from consumers' adoption of branded apps is still unclear. With the rapid growth of smartphone ownership, branded apps are being recognized as a new effective medium for building brand engagement (Hyeuk, 2016). To provide a seamless and enjoyable customer experience, companies should understand the factors that facilitate or impede consumers' switching between membership cards and branded apps.

Human migration literature uses the push–pull–mooring (PPM) framework to describe why people move from one place to another during certain periods (Boyle, Halfacree, & Robinson, 1998). According to the PPM framework, negative factors at the point of origin push people away, whereas positive factors at the destination pull people toward it. The push and pull factors interact with mooring variables, such as personal and social factors, that either hold the migrants in place or facilitate migration. PPM has been applied to numerous disciplines. For example, Chou, Shen, Chiu, and Chou (2016) explored the antecedents for consumer multi-channel shopping behavior based on the PPM framework. Wu, Vassileva, and Zhao (2017) evaluated the factors that affect the switching intentions of cloud storage service users through PPM. Jung, Han, and Oh (2017) further proposed that PPM is applicable in understanding customers' switching behavior. Therefore, this study applies PPM to delineate the determinants of consumers' switching behavior between traditional membership cards and branded apps. Research questions address in this study are as follows: (1) what are push, pull, and mooring factors that affect consumer intention to switch between traditional membership cards and branded apps? (2) how do push, pull, and mooring factors shape switching behavior? and (3) how do mooring factors moderate the influences of push and pull factors on switching behavior?

Starbucks was used as the research context because it provides both a membership card named “Starbucks card” and a mobile branded app called “myStarbucks.” Starbucks is a well-known franchise in Taiwan, and myStarbucks, as one of the world's most successful branded apps, is considered a trendsetter in the mobile marketing space (Hyeuk, 2016). The myStarbucks app has been downloaded more than 1 million times across the Apple Store and Google Play Store. As this study will explore consumers' switching behavior between membership cards and branded apps, it will assist managers in developing strategies to effectively retain consumers through branded apps.

The present study is different from prior research in three critical ways. First, although prior research has explored the issues involving smartphone apps, most of these studies focus on paid apps. Relatively few studies have used mobile branded apps as a research subject. As each type of mobile app has its own values and functions, determining whether the findings derived from different apps can be generalized across all branded apps deserves further attention. Because branded apps represent new potential for firms to enhance their brand images and customer satisfaction for their services, this study uses these apps as its research subject.

Second, the PPM framework has been applied in a number of research contexts, including mortgages (Bansal & Taylor, 1999), hairstyling (Bansal, Taylor, & James, 2005), energy supplying services (Wieringa & Verhoef, 2007), social network sites (Chang, Liu, & Chen, 2014; Xu, Yang, Cheng, & Lim, 2014), healthcare (Lai & Wang, 2015), technology products (Lin & Huang, 2014; Wu et al., 2017), and the airline industry (Jung et al., 2017). Most of those previous studies have shed light on switching between different firms, in terms of different services or channels (Hsieh, Hsieh, Chiu, & Feng, 2012; Lai & Wang, 2015; Zhou, 2016) or homogeneous services (Chang et al., 2014; Jung et al., 2017; Lin & Huang, 2014; Wu et al., 2017; Xu et al., 2014; Zhang, Cheung, & Lee, 2012), but few studies have explored within-firm switching. Branded apps are

recognized as an effective medium through which firms can build long-term relationships with their customers (Hyeuk, 2016). As the utilization of branded apps becomes a trend, successful within-firm switching by customers will help firms implement customer relationship management systems and further enhance their engagement. For example, compared with a membership card, a branded app provides an interface that gives customers more control and pleasure and facilitates interactions between the firm and its customers. Thus, this study investigates consumers' within-firm switching behaviors, delineating the switching between a traditional loyalty card and a branded app.

Finally, despite the PPM model providing a theoretical foundation for consumers' switching behavior, it does not mandate fixed factors for the push, pull, or mooring effects. Previous research has typically employed low service quality (Bansal et al., 2005; Chang et al., 2014; Chou et al., 2016; Jung et al., 2017; Lai & Wang, 2015; Lin & Huang, 2014; Xu et al., 2014; Zhang et al., 2012) and low satisfaction as push factors and the attractiveness of alternatives as a pull factor (Bansal et al., 2005; Chang et al., 2014; Chou et al., 2016; Xu et al., 2014; Zhang et al., 2012; Zhou, 2016), whereas different types of switching costs are regarded as mooring factors (Bansal et al., 2005; Chang et al., 2014; Chou et al., 2016; Jung et al., 2017; Lai & Wang, 2015; Lin & Huang, 2014; Wu et al., 2017; Xu et al., 2014; Zhou, 2016). However, Xu et al. (2014) argued that the framework must consider the distinct characteristics of the research context to further identify specific push, pull, and mooring factors. On the basis of Hyeuk (2016), the drawbacks of the membership card were regarded as a push effect, whereas the characteristics of the branded mobile apps represent pull effects. Switching barriers were further considered to be mooring effects. This study offers a comprehensive research framework to understand consumer behavior in switching between a membership card and a branded app from the push, pull, and mooring perspectives.

2. Theoretical background and the research model

2.1. The PPM framework

PPM is a dominant paradigm in migration research (Jung et al., 2017). Essentially, PPM suggests that negative factors at the origin push people away, such as low satisfaction, quality, value, trust, and commitment and high price perceptions, whereas positive factors at the destination pull people toward it, such as alternative attractiveness (Moon, 1995). Moon (1995) further incorporated mooring factors, which are contextual constraints or personal variables, into the PPM framework. These push and pull factors interact with mooring variables, such as switching costs, subjective norms, attitudes toward switching, past experience, and variety-seeking tendencies, to either hold potential migrants in their original place or facilitate migration to the new destination (Bansal et al., 2005). The PPM model lends theoretical justification for the inclusion of certain predictor variables for customers' switching behavior (Bansal et al., 2005). Because this study attempts to investigate the customers' behavior in switching between membership cards and branded apps, the application of PPM provides a theoretical foundation for identifying key predictors.

According to Bansal et al. (2005), the PPM model structures a list of predictor variables into theoretically defined effect categories. Unlike other theories in the Information system field, including fixed factors such as usefulness, ease of use, and behavior intention for the technology acceptance model, the PPM framework does not mandate fixed variables for the push, pull, or mooring effects. Furthermore, Xu et al. (2014) argued that push and pull effects are usually symmetrical. Whether a factor can be regarded as a push or pull factor is determined by its pertinence to the destination or

origin. In this study, “push effect” represents the properties of the membership card and any of its drawbacks that may enhance consumers’ switching intention. “Pull effect” refers to the characteristics of the branded mobile apps that motivate customers to use them. Both push and pull factors in this study are based on Hyeuk (2016), who applied ground theory to explore users’ behavior and intention in using branded mobile apps, with Starbucks as the research context. This study further defines “switching barrier” as a situational condition that may impede or facilitate switching behavior with regard to branded apps.

2.2. Push factor: poor aesthetic design

By conducting in-depth interviews with mobile branded app users, Hyeuk (2016) demonstrated that the Starbucks card was attractive to customers because “the design of Starbucks” cards always makes me be eager to purchase and keep them” (p.96). On the basis of Hyeuk (2016), this study identifies poor aesthetic design as a push factor that may encourage consumers to switch from membership cards to branded apps. “Aesthetics” is defined as “the feelings, concepts, and judgments arising from our appreciation of the arts or of the wider class of objects considered moving, or beautiful, or sublime” (Blackburn, 2005, p. 8). Aesthetic design provides intangible benefits related to psychological needs (Candi & Saemundsson, 2011). Consumers tend to evaluate more favorably products endowed with an aesthetically pleasing form rather than those lacking such styling (Hagtvedt & Patrick, 2014). Poor aesthetic design implies that the product cannot deliver positive memories and effective value to customers. A lack of aesthetic design on membership cards may positively affect consumers’ switching behavior. Thus, this study has adopted “poor aesthetic design” as an inhibitor that pushes customers away from using a membership card.

2.3. Pull factors: locatability, transaction convenience, economic benefits, and gamification

Hyeuk (2016) summarized the factors that exercise substantial influence over brand engagement, including usefulness, convenience, cost-savings, fun, brand affection, spatial satisfaction, and brand involvement. Because this study focuses on the characteristics of branded apps that attract customers, usefulness, convenience, fun, and cost-savings have been considered pull factors. Brand affection, spatial satisfaction, and brand involvement based on consumers’ brand evaluations were excluded from this study, which focuses on within-firm switching behavior. Thus, this study regards locatability (usefulness), transaction convenience, economic benefits, and gamification (fun) as pull factors that motivate consumers to switch from membership cards to branded apps.

Mobile media provides location-specific, wireless, and portable communications (Kim et al., 2015). Location-based services, in terms of giving users the locatability, use position technologies, such as the global positioning system, to provide value-added services to users (Xu, Teo, Tan, & Agarwal, 2009). Locatability represents the optimal information and services users can access based on their location (Zhou, 2013). With mobile technology, consumers expect to stay updated on the latest information and deals wherever they go or be able to find the nearest store. Because branded apps are embedded in the smartphone, they can be regarded as mobile services that provide location-based services to consumers. The ability to pinpoint location is a specific benefit provided by a branded app, adding to the app’s usefulness. Therefore, this study specifies “locatability” as a pull factor.

Transaction convenience is defined as the speed and ease with which consumers can amend a transaction (Beaucham & Ponder,

2010). It includes consumers’ perceived expenditure of time and effort while completing a transaction (Colwell, Aung, Kanetkar, & Holden, 2008). Transaction convenience could be a problem for companies because waiting times are commonly perceived as longer than they actually are, and this may negatively influence evaluations of overall service (Seiders, Voss, Godfrey, & Grewal, 2007). In the context of mobile branded apps, transaction convenience includes the use of mobile payment systems and the redemption of points on membership accounts. When branded apps provide a mobile payment mechanism or member points redemption, consumers can complement the purchase transaction directly, without using a credit card or cash. Accordingly, transaction convenience is regarded as a pull factor that attracts consumers to the use of branded apps.

Next, economic benefit was adopted to represent the concept of saving on costs. Cost and pricing structure greatly affect consumers’ use of technology (Venkatesh, Thong, & Xu, 2012). In the context of mobile branded apps, consumers are able to acquire savings in terms of discounts, vouchers, and free gifts. Chandon, Wansink, and Laurent (2000) indicated that price reductions create the impression of monetary savings, thus decreasing the pain of making a payment. Dickinger and Kleijnen (2008) found a positive relationship between economic benefits and consumers’ attitude toward mobile coupons. When consumers receive up-to-date information on promotions such as discounts, special offers, and sales, they perceive those mobile services as having provided monetary savings. Thus, economic benefit is considered a pull factor.

Lastly, gamification is defined as the incorporation of game-design elements into nongame settings to encourage changes in consumer behavior (Hsu, Chang, & Lee, 2013). Jin (2016) suggested that employees can have fun and are happy in pursuing work-related goals by applying game design to real-world tasks. In other words, gamification turns something boring into a compelling experience. Hamari and Koivisto (2015) proposed that gamification motivates the user toward utilitarian goals by encouraging hedonic, intrinsically motivated behavior. Robson, Plangger, Kietzmann, McCarthy, and Pitt (2015) indicated that gamification drives customer engagement and deepens their relationship with the brands they use. Furthermore, Hsu et al. (2013) posited that gamification attracts users to create and collaborate by providing fun and flow experiences. Accordingly, gamification represents the concept of having fun and can be considered a pull factor that motivates them to use the mobile branded app.

2.4. Mooring factors: substitutability and inertia

Switching between different services is a complex decision (Hsieh et al., 2012). Even when push and pull factors are strong, customers still may not choose to switch. Situational constraints may force customers to remain with their current service. This study regards switching barriers as a mooring factor because these represent forces that make switching more difficult or costly (Li, 2015). White and Yanamandram (2007) proposed that switching barriers fall into five categories: switching costs, interpersonal relationships, the attractiveness of alternatives, service recovery, and inertia. Interpersonal relationships and service recovery are not included in this study for the following two reasons. First, this study investigates consumers’ within-firm switching behavior, where the customers all build relationships with the same firm. Second, investigating service failure is not the objective of this study. Furthermore, Caniëls and Gelderman (2007) proposed that substitutability can be divided into the categories of availability of alternatives and switching costs. Thus, this study uses substitutability and inertia to represent switching barriers and further illustrate the

mooring effect for inhibiting or facilitating switching behavior.

Substitutability is defined as the extent to which e-shopping can compensate for the lack of sensory input compared with shopping in a brick-and-mortar venue (Dennis, Jayawardhena, & Papamathaiou, 2010). In a similar vein, substitutability in this study represents the ability of a branded app to compensate for the low functionality of a membership card. Flavián and Gurrea (2007) argued that if they satisfy the same need, even in different forms, two products can be substitutive. More specifically, the more substitutable consumers consider the two types of services, the greater the degree of cannibalism between them becomes (Flavián & Gurrea, 2007). As membership cards and smartphone branded apps provide several similar functions, such as transaction mechanisms and recording membership information, consumers may consider them to be substitutable. Therefore, the consumers' perceived substitutability is assumed to influence their switching decision.

Inertia is a nonconscious or less deliberate process where consumers simply buy the same brand out of habit (White & Yanamandram, 2004). High-inertia customers prefer to remain with their existing service providers (Lee & Neale, 2012). Because this study explores consumers' switching between membership cards and branded apps, inertia refers to a consumer's habitual pattern of purchasing products with a membership card. More specifically, inertia in this study focuses on the consumption pattern associated with different services under a single brand, rather than from different service providers. Consumers tend to stay with their current service provider as long as no alternatives

compel them to change (Kuo, Hu, & Yang, 2013). When customers are used to a consumption pattern, they may not feel motivated to search for alternatives (Cheng, Chiu, Hu, & Chang, 2011). Thus, this study proposes that inertia is a critical deterrent factor affecting consumers' switching intention.

To sum up, this study explores a push factor (poor aesthetic design) that acts to push customers away from membership cards and pull factors (locatability, transaction convenience, economic benefits, and gamification) that motivate the customer to use smartphone branded apps. In addition, perceived substitutability and inertia are mooring variables that affect switching behavior. Fig. 1 shows the research model of this study.

3. Hypotheses development

3.1. Push effect of switching intention

The visual appeal of products influences consumer perceptions and behavior (Wang & Li, 2017). Pleasing aesthetic designs build a strong brand identity and thus increase consumers' emotional attachment to the product (Nanda, Bos, Kramer, Hay, & Ignacz, 2008). Strong aesthetic appeal fosters a positive, firm image and convinces consumers that using the product would be enjoyable (Candi, 2010). Product design affects consumers' preferences (Liu, Li, Chen, & Balachander, 2017). When the design of the product appeals to the customers, they effectively connect with the product. In addition, visually appealing designs improve the consumer experience because better aesthetics communicate the attributes of

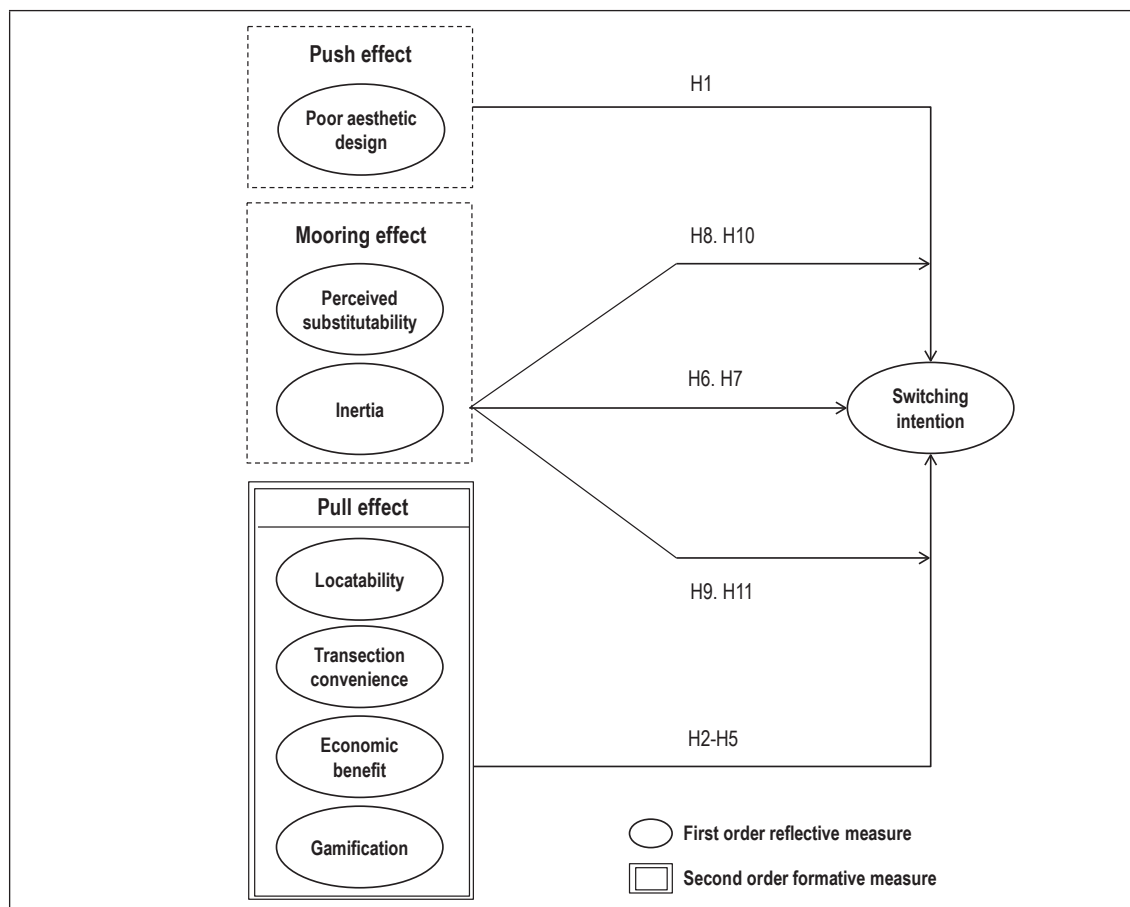


Fig. 1. The research framework of this study.

the service in a more positive manner, leading to consumer perception of increased usability (Candi & Saemundsson, 2008; Nanda et al., 2008). Up to a certain threshold, aesthetic appeal compensates for suboptimal functionality and defects in usability (Hagtvedt & Patrick, 2014). In fact, when consumers enjoy a product's design, their perception of that product's functionality may increase. Furthermore, a visually appealing design can add benefits to customers and consequently increase their willingness to pay (Brandenburger & Stuart, 1996). Aesthetic appeal is a strong determinant of pleasure and further affects consumer satisfaction (Liu, Guo, Ye, & Liang, 2016). Specifically, consumers have difficulty abandoning a product with a pleasing design. By contrast, because membership cards are designed with low aesthetic appeal, consumers cannot receive the value that compensates for drawbacks in functionality. Therefore, this study assumes that poor aesthetic design facilitates consumers' switching intentions. Thus,

H₁: Poor aesthetic design associated with membership cards exerts a positive influence on consumers' switching intentions with regard to branded apps.

3.2. Pull effect of switching intention

Locatability using navigational services creates benefits for customers (Junglas & Watson, 2008). For example, branded apps with locatability alert customers to upcoming events and assist them in finding the nearest store or parking lot. Locatability enables consumers to receive information based on their current physical location, which broadens the service's utility (Heo & Kim, 2017). Furthermore, this option is a unique benefit provided by mobile devices because it provides timely information based on positioning (Bellman, Treleaven-Hassard, Robinson, Varan, & Potter, 2013). Consumers consider switching when a substitute offers relative advantages over the existing service (Ye & Potter, 2011). As branded apps provide the ability to pinpoint locations, thus helping consumers gain useful information, consumers' switching intention from membership cards to branded apps is strengthened.

H₂: Locatability exerts a positive influence on consumers' intentions to switch from a loyalty card to a smartphone branded app.

Transaction convenience represents consumer perceptions of the time and effort spent on completing a transaction (Berry, Seiders, & Grewal, 2002). The purchasing procedure is not without costs, as consumers must invest time and energy in completing transactions. The speed and ease of this process influence perceptions of transaction convenience (Geissler, Rucks, & Edison, 2006). Ensuring transaction convenience helps customers to efficiently purchase products or services (Colwell et al., 2008). Furthermore, Jih (2007) posited that convenient services contribute to customers' shopping or re-shopping decisions. Chang and Polonsky (2012) found a positive association exists between consumer perceptions of transaction convenience and switching intention. Teo, Tan, Ooi, Hew, and Yew (2015) argued that transaction convenience affects users' performance expectations, which further influences their intention to use a mobile payment method. When the transaction process is easy and efficient, consumers can minimize nonmonetary costs. Park and Ryoo (2013) further proposed that the potential for enhanced performance stimulates consumers' switching intention. When consumers acquire transaction convenience, they tend to switch from membership cards to branded apps. Thus,

H₃: Transaction convenience exerts a positive influence on consumers' intention to switch from membership cards to branded apps.

Economic benefit refers to monetary savings consumers receive from branded apps. Savings is a sought-after benefit (Jang & Mattila, 2005). Consumers prefer a monetary component in their

economic choices, such as price, and the monetary value influences their choices (McFadden, 2001). Monetary savings directly affect consumers' willingness to engage in online transactions (Hui, Tan, & Goh, 2006). In other words, consumers prefer the choice that makes them feel they are gaining monetary savings. Furthermore, perceived monetary value influences the consumers' decisions because the greater the value that consumers can acquire from the use of a new information system, the more likely it is that they will adopt it (Hong & Tam, 2006). Moreover, Venkatesh et al. (2012) argued that monetary value is a predictor of consumer intention with regard to technology usage. They suggested that consumers' technology use would increase due to their perception of receiving benefits in exchange for a monetary sacrifice. Perceived benefits stimulate consumers' switching behavior (Park & Ryoo, 2013). If consumers believed economic benefits were being provided by branded apps, their intention to switch from membership cards would be enhanced.

H₄: Economic benefit exerts a positive influence on consumers' intention to switch from membership cards to branded apps.

Gamification is a marketing strategy that adds game elements to the nongame environment, products, or services. The game elements are not the focus of the system, but they act as a motivator to push consumers to exhibit the desired behaviors (Darejeh & Salim, 2016). Consumers can gain added value from gamification, as they perceive such extra value as useful (Bittner & Schipper, 2014). Several previous studies have confirmed the positive influence of gamification on consumer behavior. Darejeh and Salim (2016) stated that the main function of gamification is to induce positive behavior, thus improving customer motivation and engagement in performing a particular task. Hofacker, de Ruyter, Lurie, Manchanda, and Donaldson (2016) found that gamification on a mobile platform can entertain customers, accelerate purchases, and retain customers. Rodrigues, Costa, and Oliveira (2016) proposed that gamification increases customer loyalty and provides a better customer experience. More specifically, gamification motivates consumers to exhibit the desired behavior by providing game elements, such as rewards, achievements, or status. Park and Ryoo (2013) argued that the corresponding rewards increase customers' intention to switch. When consumers have fun and enjoy the content of branded apps, they tend to abandon their membership cards.

H₅: Gamification exerts a positive influence on consumers' intention to switch from membership cards to branded apps.

3.3. Mooring effects of switching intention

Substitutability means that different products can deliver the same or similar properties (Cha & Chan-Olmsted, 2012). Because one substitutable product satisfies the same needs as the other, it can be used as a replacement (Aaker & Keller, 1990). If an extension product shares similar physical or functional properties with a parent brand, the extension product could substitute for the parent brand (Ganesh Pillai & Bindroo, 2014). Similarly, when consumers perceive a new product as being able to substitute for an old one, they may replace the old product with the new one. Furthermore, Ganesh Pillai and Bindroo (2014) found consumers' perception of substitutability affected their attitude toward brand extension. Dennis et al. (2010) argued that substitutability has an effect on purchase intention. When two products are substitutable, an increase in one product's activities may reduce the marginal benefit received from the other (Hagedoorn & Wang, 2012). More specifically, perceived substitutability provides marginal utility to consumers and strengthens their positive attitude toward that product. Thus, this study proposes that perceived substitutability has a positive influence on customers' intention to switch from

membership cards to branded apps.

H₆: Perceived substitutability exerts a positive influence on consumers' intention to switch from membership cards to branded apps.

Inert consumers passively consider switching or seek information on attractive alternatives (Yanamandram and White, 2006). Such customers may repurchase a product even if they have negative perceptions of it (White & Yanamandram, 2004). When inert consumers are accustomed to carrying membership cards for transactions, they may not actively search for a new option. White and Yanamandram (2004) further indicated that an inert customer may exhibit high repeat patronage but a relatively negative attitude toward the company or may not have put much thought or rational analysis into their choice of product. Kuo et al. (2013) proposed consumer inertia positively influences repeat-purchase intention. Consumers high in inertia are inclined to maintain the status quo, and thus have low levels of motivation to switch from membership cards to branded apps. Therefore, consumer inertia negatively influences customers' switching intention.

H₇: Inertia exerts a negative influence on consumers' intention to switch from membership cards to branded apps.

3.4. Moderating roles of mooring effects

The benefits of applying the PPM model to a service context go beyond its ability to structure a long list of predictor variables into theoretically defined categories (Bansal et al., 2005). Apart from the direct influence of mooring effects on switching intention, the PPM proposes that mooring effects moderate the relationships between push factors and switching intention and between pull factors and switching intention. More specifically, even if a product has poor aesthetic design or low transaction convenience, customers might decide not to switch because of the moderating effect of substitutability. Therefore, this study further assumes that mooring variables moderate the influence of push and pull effects on switching intention.

Substitutability represents the degree to which products share similar content (Dibiaggio, Nasiriyar, & Nesta, 2014). When one product can substitute for another, consumers are more likely to evaluate the attributes of both products (Ganesh Pillai & Bindroo, 2014). The level of substitutability forces consumers to weigh the pros and cons of each product. If consumers perceive a high level of substitutability between a loyalty card and a branded app and feel that the membership card has low visual appeal, they may decide to abandon the card. Accordingly, if a membership card and a smartphone branded app are perceived as substitutable, the effect of an aesthetically appealing design on switching intention would be strengthened. Therefore,

H₈: Perceived substitutability moderates the relationship between a push effect and switching intention. The stronger the substitutability is, the stronger the relationship becomes between a push variable (low aesthetic appeal) and intention to switch from membership cards to branded apps.

The level of substitutability helps consumers evaluate the value of each product and thus select the most useful product (Dibiaggio et al., 2014). When consumers perceive a high level of substitutability between a membership card and a branded app, they learn the relative advantages of the branded app over the membership card. "Relative advantage" is defined as the degree to which a new service or product is perceived to be better than an existing one (Jin, 2016). Compared with membership cards, branded apps offer the locatability, transaction convenience, economic benefits, and gamification to consumers. Relative advantages provided by branded apps further facilitate consumers' switching behavior. Specifically, when consumers perceive a high level of

substitutability between membership cards and branded apps, the effects of locatability, transaction convenience, economic benefit, and gamification on switching intention are strengthened. Thus,

H₉: Perceived substitutability moderates the relationship between pull effects and switching intention. The stronger the substitutability is, the stronger the relationship becomes between pull variables (locatability, transaction convenience, economic benefits, and gamification) and intention to switch from membership cards to branded apps.

Inertia occurs when consumers believe they can rely on a source of existing information for decision-making in a stable and trustworthy environment (Kuo et al., 2013). Highly inert customers may remain with a service provider simply to avoid change or variety (Lee & Neale, 2012). Because changes may increase consumers' learning costs, they are inclined to avoid dealing with unfamiliar providers (Kuo et al., 2013). Although inert consumers may perceive the design of a membership card as having low aesthetic appeal, which should lure them to switch to a branded app, their habitual consumption pattern hinders them from making the switch. Specifically, inertia decreases switching intention to a branded app even if the design of the membership card is unpleasant. Therefore, consumer inertia reduces the influence of push factors on the intention to switch from membership cards to branded apps.

H₁₀: Consumer inertia moderates the relationship between a push effect and switching intention. The stronger the inertia is, the weaker the relationship becomes between the push variable (poor aesthetic design) and the intention to switch from membership cards to branded apps.

Habit is an automatic behavioral tendency based on consumers' past experiences (Cheng et al., 2011). High-inertia customers are passive in determining the need for switching (Lee & Neale, 2012). In other words, consumers high in inertia tend to remain with their current service provider, regardless of whether an alternative exists. High-inertia consumers are reluctant to change in spite of the availability of more attractive alternatives (Kuo et al., 2013). Although inert consumers may acquire the benefits of switching to a branded app, they may unconsciously continue using their old services or products to avoid uncertainty or risk. Accordingly, consumer inertia may dilute the positive influences of pull factors, such as the locatability, transaction convenience, economic benefits, and gamification, on the intention to switch from a loyalty card to a smartphone branded app.

H₁₁: Consumer inertia moderates the relationship between pull effects and switching intention. The stronger the inertia is, the weaker the relationship becomes between pull variables (location with locatability, transaction convenience, economic benefits, and gamification) and the intention to switch from membership cards to branded apps.

4. Methodology

4.1. Analysis strategy

Data was analyzed by performing partial least squares (PLS) regression analyses using SmartPLS 3.2.3 (Ringle, Wende, & Becker, 2015). According to Hair, Sarstedt, Hopkins, and Kuppelwieser (2014), PLS demonstrates better convergence behavior than covariance-based structural equation modeling when the sample size is small. Hair, Hult, Ringle, and Sarstedt (2014) further argued that PLS has been considered as the recommended method for estimate models with formative indicators, because covariance-based structural equation modeling often leads to identification problems. This study chose PLS, because pull effect in this study was conceptualized as a second-order formative measurement

construct with four first-order reflective constructs, including locatability, transaction convenience, economic benefits, and gamification. Furthermore, bootstrapping with 5000 resamples was employed to generate standard errors, and *t*-statistics were used for hypothesis testing (Hair, Hult, Ringle, & Sarstedt, 2017).

4.2. Data collection procedure

The online survey method was adopted to collect data. The unit of analysis was customers who have ever used the Starbucks card and myStarbucks app in Taiwan. A questionnaire was distributed from January 15 to March 15, 2017. Customers with experience using the Starbucks card and myStarbucks app were invited to join the survey and recruited from a number of online communities, including bulletin board systems, Facebook fan pages, and chat rooms. To ensure data responsiveness, only consumers who had made at least one transaction using the Starbucks card and one transaction with the myStarbucks app were selected. After deleting incomplete responses and duplicates, 329 questionnaires were usable. The final sample consisted of 48% male respondents. Approximately 42% of the respondents were between 20 and 29 years of age, and 58% had completed a university education. More than 54% had 1–2 years of experience using the myStarbucks app. Approximately 37% indicated they spent more than 2 h per day using apps, which corresponded to app user demographics in Taiwan (MIC, 2016).

4.3. Measurement development

Scales in this study were adapted primarily and whenever possible from previously validated questionnaires. Questionnaire items were translated from English to Chinese and then translated back into English for data equivalence. The scale purification process was conducted on the basis of Churchill (1979; 2002). All the items and responses appear on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Measurement items for each construct are listed in the Appendix.

The designed questionnaire was pre-tested with three management professors, two experienced professionals majoring in strategic marketing management and electronic commerce, and ten Ph.D. management students who majored in business administration. All these individuals were invited to discuss the appropriateness of the research questionnaire items. A pre-test of 5–10 respondents is appropriate for evaluating a survey questionnaire (Burns & Bush, 2013). Based on the respondents' feedback and comments, minor changes were made to each research construct to create a logical sequence. Accordingly, the revised questionnaire was used for a pilot test, which included a convenient sample of 30 Executive Master of Business Administration students at a university, who have experienced using the Starbucks card and myStarbucks app. The results of the pilot test were evaluated using Cronbach's reliability coefficient. The final version of the questionnaire was then refined further. All the constructs had Cronbach's alpha values ranging from 0.75 to 0.94, indicating a satisfactory level of reliability.

Multiple tests were applied to test the validity of the survey data. First, nonresponse bias was tested with *t*-tests. The comparison between responses in early and late waves of returned surveys provided additional support for nonresponse bias (Armstrong & Overton, 1977). No statistically significant differences were yielded (at the 99% confidence interval) between the early group and late group. Second, common method bias was also evaluated on the basis of Harman (1967). The results indicated that no single factor had emerged and that the first factor did not account for most of the variance. Therefore, common method bias was not considered a

serious problem in this study.

5. Data analyses and results

5.1. Measurement model

Poor aesthetic design, locatability, transaction convenience, economic benefits, gamification, substitutability, and inertia were conceptualized as first-order reflective constructs, whereas pull effect was conceptualized as a second-order formative measurement construct. For reflective constructs, this study evaluated the reliability and validity of the measurement scales. One item from the construct of locatability (LO4) and one item from gamification (GA5) were dropped due to the nonsignificant item loadings. As shown in Table 1, standardized factor loadings were greater than 0.7, and composite reliability exceeded the cut-off point of 0.7. Average variance extracted (AVE) was greater than the benchmark of 0.5, indicating that convergent validity for this exploratory study was adequate. This study used the Fornell–Larker criterion and

Table 1
Factor loadings and reliability.

Construct	Loading/weights	T Statistics	CR ^a	AVE ^b
<i>First order reflective construct</i>				
Aesthetic design			0.90	0.69
AD1	0.88	64.25		
AD2	0.87	49.21		
AD3	0.80	30.48		
AD4	0.79	33.18		
Locatability			0.95	0.86
LO1	0.91	66.56		
LO2	0.94	127.72		
LO3	0.94	123.32		
Transaction convenience			0.91	0.78
TC1	0.85	47.17		
TC2	0.91	65.15		
TC3	0.88	55.08		
Economic benefit			0.90	0.70
EB1	0.82	38.03		
EB2	0.86	40.11		
EB3	0.87	49.77		
EB4	0.80	30.26		
Gamification			0.89	0.67
GA1	0.80	44.86		
GA2	0.82	41.52		
GA3	0.83	39.08		
GA4	0.79	34.94		
Substitutability			0.93	0.72
SU1	0.85	50.96		
SU2	0.85	58.01		
SU3	0.85	62.72		
SU4	0.82	46.32		
SU5	0.87	58.89		
Inertia			0.96	0.78
IN1	0.90	83.24		
IN2	0.91	112.81		
IN3	0.91	97.37		
Switching intention			0.93	0.82
SI1	0.83	36.93		
SI2	0.85	52.46		
SI3	0.89	77.84		
SI4	0.88	81.62		
<i>Second-order formative construct</i>				
Pull effect			N.A. ^c	N.A. ^c
Locatability	0.34	23.00		
Transaction convenience	0.26	15.96		
Economic benefit	0.30	15.77		
Gamification	0.37	17.84		

Note:

^a CR, composite reliability.

^b AVE, average variance extracted.

^c N.A., not available.

heterotrait-monotrait (HTMT) ratio of correlation criterion to assess discriminant validity. As illustrated in Table 2, the square root of the AVE was greater than all of the interconstruct correlations. In addition, the HTMT value obtained for each construct was under the predefined threshold of 0.85, indicating the main constructs measured different aspects (Ringle et al., 2015).

For formative constructs, this study tested potential multicollinearity among item measurement models by using a variance inflation factor (VIF) value and confirmed the significance of the weights to avoid unstable estimates. The maximum VIF of 1.97 was below the cut-off point of 3.3 (Roldán & Sánchez-Franco, 2012). Furthermore, a significance level of at least 0.05 for each subconstruct ensured the construction of the composite latent construct. To sum up, the psychometric test of the measurement items displayed unidimensionality and conceptual consistency.

5.2. Structural model

Fig. 2 presents the results of the structural model assessment. The coefficient of determination (R^2) values were used to represent the explained variance of endogenous latent variables, whereas the cross-validated redundancy index (Q^2) tests were computed to evaluate predictive relevance (Hair et al., 2017). The research model indicated that the variance explained (R^2) is 0.58 for switching intention. The Q^2 of 0.38, which is greater than 0, implies that the model has predictive relevance (Chin, 1998). This study further applied a fit index of standardized root mean square residual (SRMR) for the composite factor model (Henseler, Ringle, & Sarstedt, 2015). Assuming that the SRMR was below 0.08, the good fit of the model was confirmed (SRMR = 0.072).

Fig. 2 shows that both poor aesthetic design (push effect; $\beta = 0.131$, $p < .05$) and pull effect ($\beta = 0.337$, $p < .001$) had significant influence on switching intention. For the mooring effect, perceived substitutability had a positive and significant effect on switching intention ($\beta = 0.297$, $p < .001$), whereas inertia negatively affected switching intention ($\beta = -.156$, $p < .01$). Hence, H_1 to H_7 were supported. Turning to the moderating effect, perceived substitutability moderated the relationship between push effect and switching intention ($\beta = 0.140$, $p < .01$) but did not moderate the influence of poor aesthetic design on switching intention ($\beta = 0.047$, $p > .05$). Furthermore, inertia moderated the relationship between poor aesthetic design and switching intention ($\beta = -.110$, $p < .05$) but did not moderate the influence of push effect on switching intention ($\beta = 0.067$, $p > .05$). Thus, H_9 and H_{10} were supported, but H_8 and H_{11} were not supported.

To examine the moderating role of the mooring factors in the relationships between switching intention and push effect as well as pull effect, this study ran a multigroup analysis (MGA) using the PLS-MGA approach. Specifically, whether estimates of the same path obtained from the two groups (high and low) of mooring factors differed significantly was tested for this study. According to

Aiken and West (1991), “high” is typically defined as one standard deviation above the mean; otherwise, it is “low.” Prior to conducting the MGA, the measurement invariance of composite model (MICOM) using a permutation procedure is a logical and necessary step. The MICOM test procedure was used to ensure that the specific-group difference of the estimation model did not affect the results for latent variables between groups (Henseler, Ringle, & Sarstedt, 2016). The MICOM process for generating 5000 permutations was performed with SmartPLS 3.2.3 (Henseler et al., 2015). In the first step, the configural invariance was established. As shown in Table 3 (step 2), no c is significantly different from 1, confirming the compositional invariance of the research model. In steps 3a and 3b of Table 3, the measures and variances in the high group presented significant differences from the observations in low group 2. Therefore, the MICOM analysis supported the full measurement invariance for two groups, indicating the pertinence of the MGA in this study.

This study further used the permutation-based test procedure to compare groups using 5000 permutations for greater stability in the results. As shown in Table 4, perceived substitutability was found to moderate the influence of pull effect ($\beta_{\text{high}} = 0.729$, $\beta_{\text{low}} = 0.236$, $p < .01$) on switching intention, whereas inertia moderated the influence of push effect ($\beta_{\text{high}} = 0.348$, $\beta_{\text{low}} = -.137$, $p < .05$) on switching intention. Furthermore, the permutation value provided a similar result to the parametric approach, both with the assumption that the variances between two groups do not vary substantially—tparametric (EV), and with the assumption of different variances for the two groups—Welch-Satterthwait testparametric (NEV) (see Table 5).

6. Research suggestions and implications

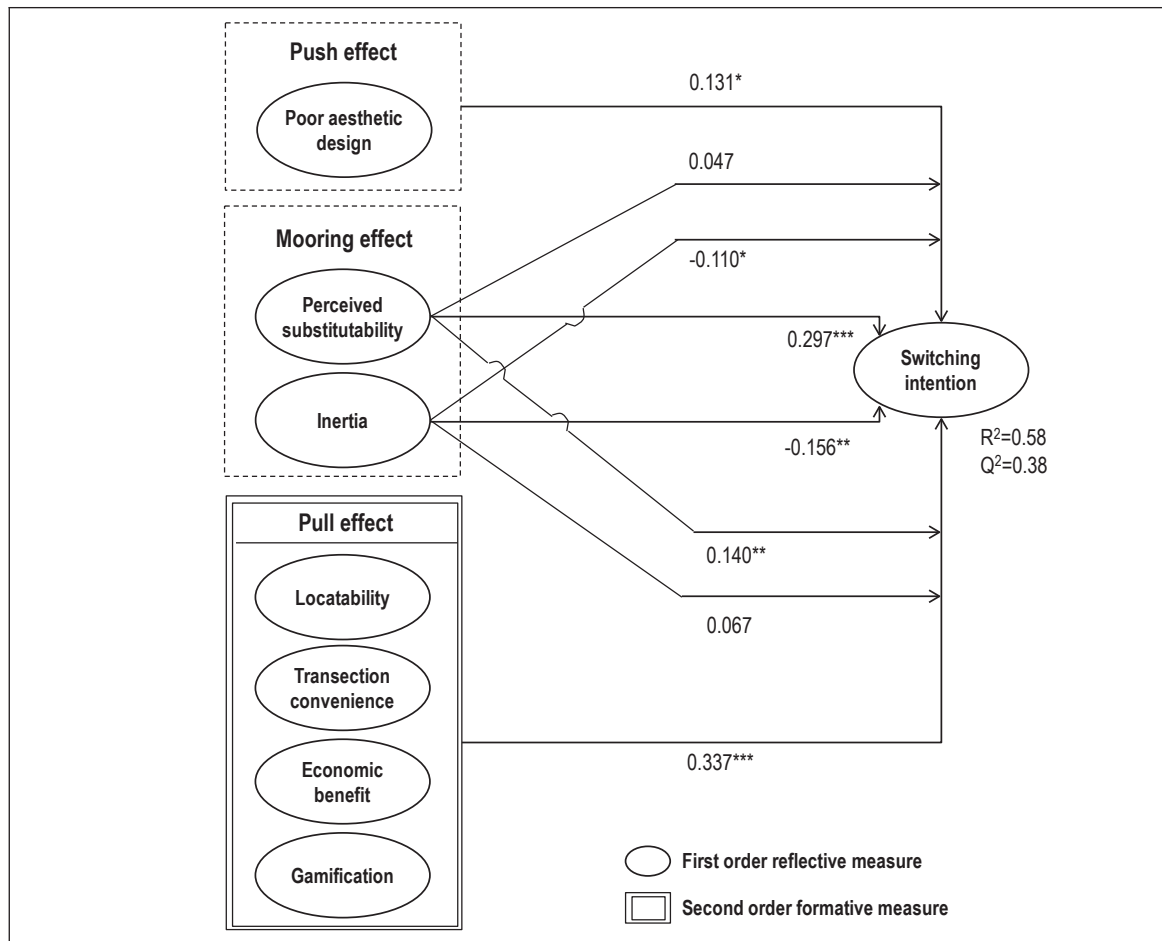
6.1. Research findings

The research findings are summarized as follows. First, the push effect, in terms of poor aesthetic design, positively and significantly affects switching intention. When consumers perceive a membership card has been designed without a focus on aesthetics, they may decide to abandon it and then adopt a branded app. This finding is in agreement with that obtained by Liu et al. (2017), who suggested that an aesthetically pleasing design determines consumers' preferences. Second, the pull effect, in terms of locatability, transaction convenience, economic benefits, and gamification, positively affects switching intention. Consumers are motivated to use a branded app if it offers location-based services, convenient transactions, discounts, and game-like activities. These findings are in line with those reported in previous studies. Heo and Kim (2017) found that locatability broadens the scope of the service. Wang, Malthouse, and Krishnamurthi (2015) indicated that transaction convenience increases consumers' willingness to maintain a relationship with the service provider. Venkatesh et al. (2012)

Table 2
Correlations among major constructs.

Variable	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
(a) Aesthetic design	0.83	0.49	0.65	0.40	0.75	0.51	0.47	0.64
(b) Locatability	0.58	0.93	0.49	0.66	0.66	0.42	0.33	0.55
(c) Transaction convenience	0.43	0.44	0.88	0.49	0.54	0.29	0.22	0.48
(d) Economic benefit	0.34	0.59	0.43	0.84	0.44	0.35	0.17	0.36
(e) Gamification	0.63	0.57	0.46	0.38	0.82	0.68	0.60	0.79
(f) Substitutability	0.44	0.38	0.25	0.31	0.59	0.85	0.72	0.70
(g) Inertia	−0.41	−0.30	−0.20	−0.14	−0.52	−0.65	0.88	0.60
(h) Switching intention	0.56	0.50	0.43	0.32	0.68	0.62	−0.53	0.93

Note: Diagonal elements are the square root of average variance extracted (AVE) of the reflective scales. Off-diagonal elements are correlations between construct. Above the diagonal element are the HTMT values.



Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Fig. 2. PLS results for the proposed model.

Table 3
MICOM of the MGA for substitutability.

Composite (step 2)	C value	95% confidence interval	Compositional invariance?
Push effect	0.998	[0.993; 1.000]	Yes
Pull effect	0.998	[0.994; 1.000]	Yes
Behaviour intention	0.999	[0.996; 1.000]	Yes
Composite (step 3a)	Difference of the composite's variance ratio (=0)	95% confidence interval	Equal variances?
Push effect	0.115	[-0.523; 0.519]	Yes
Pull effect	0.304	[-0.444; 0.465]	Yes
Behaviour intention	0.558	[-0.354; 0.378]	Yes
Composite (step 3b)	Difference of the composite's mean value (=0)	95% confidence interval	Equal variances?
Push effect	-0.986	[-0.391; 0.373]	Yes
Pull effect	-1.267	[-0.385; 0.385]	Yes
Behaviour intention	-1.381	[-0.369; 0.376]	Yes

suggested that monetary value predicts consumer behavior. Hofacker et al. (2016) argued that gamification entertains customers and retains them on the mobile platform.

Third, substitutability has a positive influence on switching intention. When consumers perceive high levels of substitutability between membership cards and branded apps, additional marginal utility gained from a branded app strengthens their switching intention. This finding supports the notion proposed by Dennis et al. (2010), who found that substitutability has an effect on purchase

intention. Furthermore, substitutability moderates the positive influence of the pull effect on switching intention. If membership cards and branded apps are perceived as substitutable, providing location-based services, convenient transactions, discounts, and game-like activities may enhance consumers' willingness to adopt the branded app. These findings confirm those obtained by Dibiaggio et al. (2014), who indicated that substitutability enables consumers to choose the most useful product based on product attribution evaluations.

Table 4
MICOM of the MGA for inertia.

Composite (step 2)	C value	95% confidence interval	Compositional invariance?
Push effect	0.998	[0.994; 1.000]	Yes
Pull effect	0.999	[0.995; 1.000]	Yes
Behaviour intention	0.997	[0.992; 1.000]	Yes
Composite (step 3a)	Difference of the composite's variance ratio (=0)	95% confidence interval	Equal variances?
Push effect	−0.489	[−0.460; 0.479]	Yes
Pull effect	0.082	[−0.401; 0.393]	Yes
Behaviour intention	0.144	[−0.334; 0.293]	Yes
Composite (step 3b)	Difference of the composite's mean value (=0)	95% confidence interval	Equal variances?
Push effect	1.010	[−0.315; 0.328]	Yes
Pull effect	1.047	[−0.316; 0.317]	Yes
Behaviour intention	1.239	[−0.315; 0.326]	Yes

Table 5
Multigroup comparison test results.

Relationships	High	Low	Differences (High-Low)	t _{parametric} (EV)	t _{parametric} (NEV)	Permutation p-values	Significance
Moderator: substitutability							
Pull effect-behavior intention	0.729	0.236	0.541	3.215	3.271	0.003	Yes
Relationships	Low	High	Differences (High-Low)	t _{parametric} (EV)	t _{parametric} (NEV)	Permutation p-values	Significance
Moderator: inertia							
Push effect-behavior intention	−0.137	0.348	0.485	1.986	2.084	0.033	Yes

Contrary to our expectations, substitutability does not moderate the positive influence of the pull effect on switching intention, possibly because either membership cards or branded apps can be used to purchase products in the Starbucks store. As suggested by Ganesh Pillai and Bindroo (2014), substitutability represents the shared elements of two products in satisfying the same need. From the perspective of the customers, although loyalty cards and branded apps are perceived to be substitutable, customers can still pay for a cup of coffee by using membership cards with a poor aesthetic design. Despite high levels of substitutability between membership cards and branded apps, customers may not be willing to disclose personal information to firms through the branded app for the purpose of maintaining a long-term relationship with that brand. Therefore, irrespective of high or low levels of substitutability, the effects of poor aesthetic design on switching intention were nonsignificant.

Finally, inertia has a negative influence on switching intention. Because inert consumers may not actively search for new options, they prefer using membership cards instead of adopting branded apps. These findings are consistent with those reported in previous studies. Consumer inertia is positively related to repeat-purchase intention (Kuo et al., 2013; White & Yanamandram, 2004). Furthermore, inertia negatively moderates the relationship between push effect and switching intention. When consumers prefer actively searching for and comparing deals, and the design of the membership card is perceived to be lacking aesthetic appeal, consumers are inclined to switch to using a branded app. This result confirms the research of Kuo et al. (2013), who proposed that inert consumers unconsciously continue using their current goods and service providers.

Contradicting our prediction, inertia does not moderate the relationship between pull effects and switching intention. One possible explanation is that customers' inert behavior is a double-edged sword for the service provider (Carter, Gray, D'Alessandro, & Johnson, 2016). More specifically, the positive force that attracts consumers to switch may offset the negative force that keeps them maintaining the status quo. The positive force comes from

spurious loyalty. According to Huang and Yu (1999), an inert consumer is sensitive to marketing activities, so a competitor can unfreeze consumers' habitual patterns by providing incentives, such as noticeable price reductions. When a firm promotes its branded app by actively providing relevant information, consumers may passively switch to the branded app for clerical assistance. However, the negative force means that inert consumers tend to avoid variety and change (Lee & Neale, 2012). Inert consumers follow past habitual patterns without active thought, even when service providers offer benefits. Taken together, the positive force neutralizes the negative force. Although firms may encourage the use of their branded apps by offering location-based services, convenient transactions, discounts, and game-like activities, inert consumers, lured by those incentives, may still refrain from switching through passiveness or inaction. Thus, inertia has a nonsignificant moderating effect on the relationship between pull effects and switching intention.

6.2. Managerial implications

As the smartphone app market matures and becomes homogeneous, the competition for acquiring new customers and retaining existing customers will increase in intensity (Zhao, Lu, Zhang, & Chau, 2012). From the viewpoint of management, this study offers relevant insights into the delivery of mobile branded apps. First, a visually appealing design is as vital as functionality, which provides utility to customers. An aesthetically pleasing design is concerned with how the product appeals to the senses. If a product can deliver positive memories and effective experiential value for customers, this differentiation from other products facilitates the formation of its brand recognition. Therefore, if a firm would like to develop mobile marketing communication strategies, the emphasis on a membership card can be reduced. Alternatively, if the firm would like to create a market segment for membership card users or collectors, managers must understand the consumers' preferences and satisfy their needs, such as offering a membership card that is not merely a card but also a product that can be

collected. For instance, issuing a city card or season limited card attracts customers to possess more than one card. Managers may also provide customized services, so that consumers can have a unique membership card.

Second, pull effects strengthen consumers' switching intention. For the constitution of push effects, gamification has the greatest weight ($\beta = 0.37$), followed by locatability ($\beta = 0.34$), economic benefits ($\beta = 0.30$), and transaction convenience ($\beta = 0.26$). This finding is particularly valuable for brand managers when they must decide how to allocate resources to deliver new branded apps. For example, brand managers should focus more on incorporating game elements into their branded apps, such as points, badges, status, and virtual goods. Engaging game-like experiences deepen the consumer–brand relationship by fulfilling consumers' hedonic needs. Furthermore, locatability the ability to pinpoint a location is a unique characteristic of the smartphone. Location-based services provide flexible and up-to-date localized information and deals to consumers. Thus, brand managers must extend their service scope by integrating location-based services and other technology systems. For instance, consumers can use an online booking system to order and pay for a meal with take-out service. To reduce waiting time, a location-based service can record and trace the consumer's car and inform the clerk to deliver meals to the customer at the drive-through window. Moreover, convenient transactions and discounts are not recognized as the most critical factors, but they are necessary for branded apps. Accordingly, brand managers should provide transaction convenience to reduce the emotional effort associated with making purchases, as well as offer utilitarian benefits to consumers through monetary savings.

Third, perceived substitutability facilitates consumers' switching behavior. If one product complements another product with the same elements, the possible switching barrier can be broken. As suggested by Dennis et al. (2010), substitutability is a function of product quality, the tangible attributes of the product, product information, and product knowledge. Firms employing effective communication strategies can build consumer confidence in product substitutability. If a firm attempts to implement customer relationship management by replacing membership cards with a branded app, it must ensure the quality of the branded app and provide relevant information on the characteristics of that app. Furthermore, for consumers who perceive the substitutability between a membership card and a branded app, firms should provide rational judgments regarding the advantages and benefits of the branded apps to enhance switching intention. In addition, propagandizing the disadvantages of the membership card is not beneficial because consumers can complete transactions as usual even without obtaining additional value from the branded app.

Finally, inertia plays a critical role in influencing consumer switching behavior. In the context of between-firm switching, as multiple scholars note, inertia provides benefits to the firms because of uncertainty avoidance (Carter et al., 2016; Lee & Neale, 2012). However, it is noteworthy that inertia hinders consumers' within-firm switching behavior in this study, as this is not what firms want to see when promoting their branded apps. More specifically, compared with low-inertia consumers, the influence of poor aesthetic design on switching intention would be weaker. The right question to ask is not whether inertia plays the more crucial role, but rather, how inertia affects consumer behavior in harmony with the firms' strategies. One of the most vital missions for brand managers is to exercise corresponding strategies in each target market based on consumer characteristics. This is not a simple task because managers must understand consumer habits and record consumption patterns. Although brand managers may not change the level of consumer inertia, they can choose to implement specific strategies that target consumers.

6.3. Limitations and future research directions

The findings of this study are useful for brand managers seeking to implement mobile marketing strategies. However, like most empirical research, this study is not without limitations. First, this study uses Starbucks as its research subject. The utilization of mobile applications has become more popular than other types of strategic marketing tools (Kim & Yu, 2016). Each firm has its own app and each app may have different characteristics. For example, a social-centric app mainly helps consumers make connections with other members of the community, whereas a game-centric app provides immersive-presence interfaces where customers can play anywhere and anytime. Thus, future research may shed light on other branded apps to decrease variances.

Second, the PPM framework is a useful tool for understanding the competing forces that influence consumers' switching behavior across service substitutes (Hsieh et al., 2012). On the basis of Hyeuk (2016), this study incorporates a list of variables into the PPM framework based on the differences between a membership card and a branded app and further considers the situational constraints. Xu et al. (2014) posited that the framework must consider the distinct characteristics of the research context to further identify specific push, pull, and mooring factors. Future research may incorporate other predictors into their models to describe consumer behavior in switching between a membership card and a branded app.

Finally, compared with attracting new customers, retaining existing customers is more cost-effective because of lower consumer-search costs and barriers to entry. In particular, this study sheds lights on consumers' within-firm switching between a traditional loyalty card and a branded app. However, consumer between-firm switching behavior can also be a critical issue for firms in pursuit of profit and competitive advantage. Accordingly, future research may consider between-firm switching behavior to broaden the scope of the results.

6.4. Conclusion

Companies from a variety of industries strive to develop mobile apps to deliver product information and build relationship with consumers. Understanding the determinants of consumer adoption of a brand app can be crucial for brand marketing strategies. This study investigates the determinants of consumers' switching behavior between traditional membership cards and branded apps on the basis of the PPM. By exploring how push, pull, and mooring factors shape switching behavior, this study shows that poor aesthetic design of membership cards, and high locatability, transaction convenience, economic benefit, and gamification of the branded app motivate consumer switching behavior. Indeed, providing benefits can be a useful way to trigger consumer switching. Furthermore, personal variables or situational constraints cannot be ignored. When consumers are highly inert, poor aesthetic design of the membership card may facilitate consumers' switching behavior. If consumers perceived the substitutability between a membership card and the branded app, the benefits provided by the branded app would strengthen consumer switching behavior. Such studies will assist managers in developing marketing strategies to effectively maintain relationship with consumers through branded apps.

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Appendix. Questionnaire used for this study

Push effect

Aesthetic design (adopted from Cyr et al., 2006)

- AD1 The design of the Starbucks card (i.e., colors, materials, etc.) is attractive. (R)
 AD2 The Starbucks card looks professionally designed. (R)
 AD3 The overall look and feel of the Starbucks card is visually appealing. (R)
 AD4 The graphics on the Starbucks card are meaningful. (R)

Pull effects

Locatability (adopted from Xu et al., 2009)

- LO1 I am able to get up-to-date information whenever I need it with myStarbucks.
 LO2 I am able to access relevant information at the right place with myStarbucks.
 LO3 I can get timely information with myStarbucks.
 LO4 I am able to access relevant information wherever I want with myStarbucks.

Transaction convenience (adopted from Chang & Polonsky, 2012)

- TC1 I find it easy to complete my purchases with myStarbucks.
 TC2 I am able to complete the purchase quickly with myStarbucks.
 TC3 It takes little time to pay for my purchase with myStarbucks.

Economic benefits (adopted from Chang & Polonsky, 2012)

- EB1 I believe that the financial gain from using myStarbucks is worthwhile.
 EB2 I have lower financial costs (monetary savings) by using myStarbucks.
 EB3 I spend less by using myStarbucks.
 EB4 Overall, I save money by using myStarbucks.

Gamification (adopted from Hsu et al., 2013)

- GA1 With myStarbucks, the relationship between purchasing and rewards is clear.
 GA2 With myStarbucks, rewards vary with events.
 GA3 With myStarbucks, I get automatic notifications of my progress or status upgrades.
 GA4 With myStarbucks, statistics about my progress or status and consumption experience are retrievable.
 GA5 myStarbucks enables me to show my progress or status to others.

Mooring effects

Perceived substitutability (adopted from Flavián & Gurrea, 2007)

- AD1 The myStarbucks app offers the same services as the Starbucks card.
 AD2 The myStarbucks app offers services in the same way as the Starbucks card.
 AD3 The myStarbucks app satisfies the same needs as the Starbucks card.
 AD4 Consumers use the Starbucks card and the myStarbucks app in the same situations, such as purchasing coffee.
 AD5 The myStarbucks app is considered the same tool as the Starbucks card for activities such as purchasing coffee.

Inertia (adopted from Kuo et al., 2013)

- IN1 Unless I am very dissatisfied with the Starbucks card, changing to a new transaction tool, such as the myStarbucks app, would be a bother.
 IN2 I will use the Starbucks card very intuitively when I must purchase coffee.
 IN3 To my mind, the cost of time, money, and effort involved in switching to another transaction tool, such as the myStarbucks app, is high.

Switching intention (adopted from Wu et al., 2017)

- SI1 I prefer to consider the myStarbucks app my primary transaction tool at the Starbucks store.
 SI2 I am considering increasing time spent on the myStarbucks app and decreasing time with the Starbucks card.
 SI3 I am determined to switch to the myStarbucks app.
 SI4 I think I will switch from the Starbucks card to the myStarbucks app in six months.

Note: * represents items that were deleted in the main study because their loadings were small and nonsignificant.

(R) represents a reverse item.

References

- Aaker, D. A., & Keller, K. L. (1990). Consumer evaluations of brand extensions. *Journal of Marketing*, 54(1), 27–41.
 Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
 Alnawas, I., & Aburub, F. (2016). The effect of benefits generated from interacting with branded mobile apps on consumer satisfaction and purchase intentions. *Journal of Retailing and Consumer Services*, 31, 313–322.
 Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail

- surveys. *Journal of Marketing Research*, 14, 396–402.
 Bansal, H. S., & Taylor, S. F. (1999). The service provider switching model (spsm): A model of consumer switching behavior in the services industry. *Journal of Service Research*, 2(2), 200–218.
 Bansal, H. S., Taylor, S. F., & James, Y. S. (2005). "Migrating" to new service providers: Toward a unifying framework of consumers' switching behaviors. *Journal of the Academy of Marketing Science*, 33(1), 96–115.
 Beaucham, M. B., & Ponder, N. (2010). Perceptions of retail convenience for in-store and online shoppers. *Marketing Management Journal*, 20(1), 49–65.
 Bellman, S., Treleaven-Hassard, S., Robinson, J. A., Varan, D., & Potter, R. F. (2013). Brand communication with branded smartphone apps: First insights on possibilities and limits. *GfK Marketing Intelligence Review*, 5(2), 24–27.
 Berry, L. L., Seiders, K., & Grewal, D. (2002). Understanding service convenience. *Journal of Marketing*, 66(3), 1–17.
 Bittner, J. V., & Schipper, J. (2014). Motivational effects and age differences of gamification in product advertising. *Journal of Consumer Marketing*, 31(5), 391–400.
 Blackburn, S. (2005). *Oxford dictionary of philosophy*. Oxford: Oxford University Press.
 Boyle, P. J., Halfacree, K., & Robinson, V. (1998). *Exploring contemporary migration*. New York, Harlow: Longman.
 Brandenburger, A. M., & Stuart, H. W. (1996). Value-based business strategy. *Journal of Economics and Management Strategy*, 5(1), 5–24.
 Burns, A. C., & Bush, R. F. (2013). *Marketing research: Pearson higher education*.
 Candi, M. (2010). Benefits of aesthetic design as an element of new service development. *Journal of Product Innovation Management*, 27(7), 1047–1064.
 Candi, M., & Saemundsson, R. (2008). Oil in water? Explaining differences in aesthetic design emphasis in new technology-based firms. *Technovation*, 28(7), 464–471.
 Candi, M., & Saemundsson, R. J. (2011). Exploring the relationship between aesthetic design as an element of new service development and performance. *Journal of Product Innovation Management*, 28(4), 536–557.
 Caniëls, M. C., & Gelderman, C. J. (2007). Power and interdependence in buyer supplier relationships: A purchasing portfolio approach. *Industrial Marketing Management*, 36(2), 219–229.
 Carter, L., Gray, D., D'Alessandro, S., & Johnson, L. (2016). The "I love to hate them" relationship with cell phone service providers: The role of customer inertia and anger. *Services Marketing Quarterly*, 37(4), 225–240. <https://doi.org/10.1080/15332969.2016.1217680>.
 Cha, J., & Chan-Olmsted, S. M. (2012). Substitutability between online video platforms and television. *Journalism & Mass Communication Quarterly*, 89(2), 261–278.
 Chandon, P., Wansink, B., & Laurent, G. (2000). A benefit congruency framework of sales promotion effectiveness. *Journal of Marketing*, 64(4), 65–81.
 Chang, I.-C., Liu, C.-C., & Chen, K. (2014). The push, pull and mooring effects in virtual migration for social networking sites. *Information Systems Journal*, 24, 323–346.
 Chang, Y. W., & Polonsky, M. J. (2012). The influence of multiple types of service convenience on behavioral intentions: The mediating role of consumer satisfaction in a Taiwanese leisure setting. *International Journal of Hospitality Management*, 31(1), 107–118.
 Cheng, C. C., Chiu, S.-I., Hu, H.-Y., & Chang, Y.-Y. (2011). A study on exploring the relationship between customer satisfaction and loyalty in the fast food industry: With relationship inertia as a mediator. *African Journal of Business Management*, 5(13), 5118–5126. <https://doi.org/10.5897/AJBM10.870>.
 Chen, H., Liu, F., & Dai, T. (2013). Chinese consumers' perceptions toward smart-phone and marketing communication on smartphone. *International Journal of Mobile Marketing*, 8(1), 38–45.
 Chin, W. W. (1998). The partial least squares approach to structural equation modelling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Mahwah, NJ: Lawrence Erlbaum Associates.
 Chou, S.-Y., Shen, G. C., Chiu, H.-C., & Chou, Y.-T. (2016). Multichannel service providers' strategy: Understanding customers' switching and free-riding behavior. *Journal of Business Research*, 69(6), 2226–2232.
 Colwell, S. R., Aung, M., Kanetkar, V., & Holden, A. L. (2008). Toward a measure of service convenience: Multiple-item scale development and empirical test. *Journal of Services Marketing*, 22(2), 160–169.
 Cyr, D., Head, M., & Ivanov, A. (2006). Design aesthetics leading to m-loyalty in m-commerce. *Information & Management*, 43(8), 950–963.
 Darejeh, A., & Salim, S. S. (2016). Gamification solutions to enhance software user engagement: A systematic review. *International Journal of Human - Computer Interaction*, 32(8), 613.
 Dennis, C., Jayawardhena, C., & Papamathaiou, E.-K. (2010). Antecedents of internet shopping intentions and the moderating effects of substitutability. *International Review of Retail Distribution & Consumer Research*, 20(4), 411–430.
 Dibiaggio, L., Nasiriyar, M., & Nesta, L. (2014). Substitutability and complementarity of technological knowledge and the inventive performance of semiconductor companies. *Research Policy*, 43(9), 1582–1593.
 Dickinger, A., & Kleijnen, M. (2008). Coupons going wireless: Determinants of consumer intentions to redeem mobile coupons. *Journal of Interactive Marketing*, 22, 23–39.
 Dube, A., & Helkkula, A. (2015). Service experiences beyond the direct use: Indirect customer use experiences of smartphone apps. *Journal of Service Management*, 26(2), 224.
 Flavián, C., & Gurrea, R. (2007). Perceived substitutability between digital and

- physical channels: The case of newspapers. *Online Information Review*, 31(6), 793–813. <https://doi.org/10.1108/14684520710841775>.
- Ganesh Pillai, R., & Bindroo, V. (2014). The moderating roles of perceived complementarity and substitutability on the perceived manufacturing difficulty–extension attitude relationship. *Journal of Business Research*, 67(7), 1353–1359. <https://doi.org/10.1016/j.jbusres.2013.08.018>.
- Geissler, G. L., Rucks, C. T., & Edison, S. W. (2006). Understanding the role of service convenience in art museum Marketing: An exploratory study. *Journal of Hospitality & Leisure Marketing*, 14(1), 69–87.
- Ghosh, T., & Rao, V. G. (2014). Consumer confusion in mobile application buying: The moderating role of need for cognition. *International Journal of E-business Research*, 10(4), 52.
- Goldman, S. M. (2010). Transformers. *Journal of Consumer Marketing*, 27(5), 469–473. <https://doi.org/10.1108/07363761011063367>.
- Hagedoorn, J., & Wang, N. (2012). Is there complementarity or substitutability between internal and external R&D strategies? *Research Policy*, 41(6), 1072–1083.
- Hagtvedt, H., & Patrick, V. M. (2014). Consumer response to overstyling: Balancing aesthetics and functionality in product design. *Psychology and Marketing*, 31(7), 518–525.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling*. Thousand Oaks, CA: Sage.
- Hair, J. F., Hult, G. T., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modelling PLS-SEM* (2nd ed.). Thousand Oaks: Sage.
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM) an emerging tool in business research. *European Business Review*, 26(2), 106–121.
- Hamari, J., & Koivisto, J. (2015). Why do people use gamification services? *International Journal of Information Management*, 35(4), 419–431. <https://doi.org/10.1016/j.ijinfomgt.2015.04.006>.
- Harman, H. H. (1967). *Modern factor analysis*. Chicago: University of Chicago Press.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modelling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing Measurement invariance of composites using partial least squares. *International Marketing Review*, 33(3), 405–431.
- Heo, J. Y., & Kim, K. J. (2017). Development of a scale to measure the quality of mobile location-based services. *Service Business*, 11(1), 141–159.
- Hofacker, C. F., de Ruyter, K., Lurie, N. H., Manchanda, P., & Donaldson, J. (2016). Gamification and mobile marketing effectiveness. *Journal of Interactive Marketing*, 34, 25.
- Hong, S. J., & Tam, K. Y. (2006). Understanding the adoption of multipurpose information appliances: The case of mobile data services. *Information Systems Research*, 17(2), 162–179.
- Hsieh, J.-K., Hsieh, Y.-C., Chiu, H.-C., & Feng, Y.-C. (2012). Post-adoption switching behavior for online service substitutes: A perspective of the push–pull–mooring framework. *Computers in Human Behavior*, 28, 1912–1920.
- Hsu, S. H., Chang, J. W., & Lee, C. C. (2013). Designing attractive gamification features for collaborative storytelling websites. *Cyberpsychology, Behavior, and Social Networking*, 16(6), 428–435.
- Hsu, C. L., & Lin, J. C. C. (2015). What drives purchase intention for paid mobile apps?—An expectation confirmation model with perceived value. *Electronic Commerce Research and Applications*, 14(1), 46–57.
- Huang, M.-H., & Yu, S. (1999). Are consumers inherently or situationally brand loyal? - A set intercorrelation account for conscious brand loyalty and nonconscious inertia. *Psychology and Marketing*, 16(6), 523.
- Hui, K. L., Tan, B. C., & Goh, C. Y. (2006). Online information disclosure: Motivators and measurements. *ACM Transactions on Internet Technology*, 6(4), 415–441.
- Hyeuk, C. (2016). Consumer brand engagement by virtue of using Starbucks's branded mobile app based on grounded theory methodology. *International Journal of Asia Digital Art & Design*, 19(4), 91–97.
- Jang, D., & Mattila, A. S. (2005). An examination of restaurant loyalty programs: What kinds of rewards do customers prefer? *International Journal of Contemporary Hospitality Management*, 17(5), 402–408.
- Jih, W. J. K. (2007). Effects of consumer-perceived convenience on shopping intention in mobile commerce: An empirical study. *International Journal of E-business Research*, 3(4), 33–48.
- Jin, C. H. (2016). The effects of mental simulations, innovativeness on intention to adopt brand application. *Computers in Human Behavior*, 54, 682–690.
- Jung, J., Han, H., & Oh, M. (2017). Travelers' switching behavior in the airline industry from the perspective of the push–pull–mooring framework. *Tourism Management*, 59, 139–153. <https://doi.org/10.1016/j.tourman.2016.07.018>.
- Junglas, I. A. C., & Watson, R. T. (2008). Task-technology fit for mobile locatable information systems. *Decision Support Systems*, 45(4), 1046–1057.
- Kang, M. (2014). What makes users buy paid smartphone Applications? Examining app, personal, and social influences. *Journal of Internet Banking and Commerce*, 20(1), 1–22.
- Kim, H. W., Kankanhalli, A., & Lee, H. L. (2016). Investigating decision factors in mobile application purchase: A mixed-methods approach. *Information & Management*, 53, 727–739.
- Kim, S. J., Wang, R. J. H., & Malthouse, E. C. (2015). The Effects of adopting and using a brand's mobile application on customers' subsequent purchase behavior. *Journal of Interactive Marketing*, 31, 28–41.
- Kim, J., & Yu, E. A. (2016). The holistic brand experience of branded mobile applications affects brand loyalty. *Social Behavior & Personality: An International Journal*, 44(1), 77–87.
- Kuo, Y.-F., Hu, T.-L., & Yang, S.-C. (2013). Effects of inertia and satisfaction in female online shoppers on repeat-purchase intention. *Managing Service Quality*, 23(3), 168–187. <https://doi.org/10.1108/09604521311312219>.
- Lai, J.-Y., & Wang, J. (2015). Switching attitudes of Taiwanese middle-aged and elderly patients toward cloud healthcare services: An exploratory study. *Technological Forecasting and Social Change*, 92, 155–167.
- Lee, R., & Neale, L. (2012). Interactions and consequences of inertia and switching costs. *Journal of Services Marketing*, 26(5), 365–374. <https://doi.org/10.1108/08876041211245281>.
- Li, C. Y. (2015). Switching barriers and customer retention: Why customers dissatisfied with online service recovery remain loyal. *Journal of Service Theory and Practice*, 25(4), 370–393.
- Lim, S. L., Bentley, P. J., Kanakam, N., Ishikawa, F., & Honiden, S. (2015). Investigating country differences in mobile app user behavior and challenges for software engineering. *IEEE Transactions on Software Engineering*, 41(1), 40–64.
- Lin, T.-C., & Huang, S.-L. (2014). Understanding the determinants of consumers' switching intentions in a standards war. *International Journal of Electronic Commerce*, 19(1), 163–189.
- Liu, W., Guo, F., Ye, G., & Liang, X. (2016). How homepage aesthetic design influences users' satisfaction: Evidence from China. *Displays*, 42, 25–35. <https://doi.org/10.1016/j.displa.2016.02.004>.
- Liu, Y., Li, K. J., Chen, H., & Balachander, S. (2017). The effects of products' aesthetic design on demand and marketing-mix effectiveness: The role of segment prototypicality and brand consistency. *Journal of Marketing*, 81(1), 83–102.
- McFadden, D. (2001). Economic choices. *The American Economic Review*, 91(3), 351–378.
- MIC. (2016). *Consumer investigation on mobile apps*. from <http://www.mic.iii.org.tw/aisp/reports/reportdetail.asp?docid=CD0C20160324001>.
- Moon, B. (1995). Paradigms in migration research: Exploring moorings as a schema. *Progress in Human Geography*, 19(4), 504–524.
- Nanda, P., Bos, J., Kramer, K.-L., Hay, C., & Ignacz, J. (2008). Effect of smartphone aesthetic design on users' emotional reaction. *TEM Journal*, 20(4), 348–355. <https://doi.org/10.1108/17542730810881339>.
- Park, S. C., & Ryoo, S. Y. (2013). An empirical investigation of end-users' switching toward cloud computing: A two factor theory perspective. *Computers in Human Behavior*, 29(1), 160–170.
- Peng, K.-F., Chen, Y., & Wen, K.-W. (2014). Brand relationship, consumption values and branded app adoption. *Industrial Management & Data Systems*, 114(8), 1131.
- Ringle, C. M., Wende, S., & Becker, J. M. (2015). *SmartPLS 3*. Retrieved June 30, 2017, from <https://www.smartpls.com/>.
- Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I., & Pitt, L. (2015). Is it all a game? Understanding the principles of gamification. *Business Horizons*, 58(4), 411–420. <https://doi.org/10.1016/j.bushor.2015.03.006>.
- Rodrigues, L. F., Costa, C. J., & Oliveira, A. (2016). Gamification: A framework for designing software in e-banking. *Computers in Human Behavior*, 62, 620–634. <https://doi.org/10.1016/j.chb.2016.04.035>.
- Roldán, J. L., & Sánchez-Franco, M. J. (2012). Variance-based structural equation modelling: Guidelines for using partial least squares in information systems research. In M. Mora (Ed.), *Research methodologies, innovations and philosophies in software systems engineering and information systems*. Hershey, PA: IGI Global, 193–121.
- Seiders, K., Voss, G. B., Godfrey, A. L., & Grewal, D. (2007). SERVCON: Development and validation of a multidimensional service convenience scale. *Journal of the Academy of Marketing Science*, 35(1), 144–156.
- Teo, A.-C., Tan, G. W.-H., Ooi, K.-B., Hew, T.-S., & Yew, K.-T. (2015). The effects of convenience and speed in m-payment. *Industrial Management & Data Systems*, 115(2), 311–333.
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157–178.
- Wang, M., & Li, X. (2017). Effects of the aesthetic design of icons on app downloads: Evidence from an android market. *Electronic Commerce Research*, 17(1), 83–102. <https://doi.org/10.1007/s10660-016-9245-4>.
- Wang, R. J.-H., Malthouse, E. C., & Krishnamurthi, L. (2015). On the Go: How mobile shopping affects customer purchase behavior. *Journal of Retailing*, 91(2), 217–234. <https://doi.org/10.1016/j.jretai.2015.01.002>.
- White, L., & Yanamandram, V. (2004, 183–194). Why customers stay: Reasons and consequences of inertia in financial services. *Managing Service Quality*, 14(2/3), 183–194.
- White, L., & Yanamandram, V. (2007). A model of customer retention of dissatisfied business services customers. *Managing Service Quality*, 17(3), 298–316.
- Wieringa, J. E., & Verhoef, P. C. (2007). Understanding customer switching behavior in a liberalizing service market an exploratory study. *Journal of Service Research*, 10(2), 174–186.
- Wu, K., Vassileva, J., & Zhao, Y. (2017). Understanding users' intention to switch personal cloud storage services: Evidence from the Chinese market. *Computers in Human Behavior*, 68, 300–314. <https://doi.org/10.1016/j.chb.2016.11.039>.
- Xu, H., Teo, H. H., Tan, B. C., & Agarwal, R. (2009). The role of push–pull technology in privacy calculus: The case of location-based services. *Journal of Management Information Systems*, 26(3), 135–174.
- Xu, Y., Yang, Y., Cheng, Z., & Lim, J. (2014). Retaining and attracting users in social networking services: An empirical investigation of cyber migration. *The Journal of Strategic Information Systems*, 23(3), 239–253. <https://doi.org/10.1016/j.jsis.2014.03.002>.

- Yanamandram, V., & White, L. (2006). Switching barriers in business-to-business services: A qualitative study. *International Journal of Service Industry Management*, 17(2), 158–192.
- Ye, C., & Potter, R. (2011). The role of habit in post-adoption switching of personal information Technologies: An empirical investigation. *Communications of the Association for Information Systems*, 28(1), 585–610.
- Zhang, K. Z. K., Cheung, C. M. K., & Lee, M. K. O. (2012). Online service switching behavior: The case of blog service providers. *Journal of Electronic Commerce Research*, 13(3), 184–197.
- Zhao, Z., & Balagué, C. (2015). Designing branded mobile apps: Fundamentals and recommendations. *Business Horizons*, 58(3), 305–315.
- Zhao, L., Lu, Y., Zhang, L., & Chau, P. Y. (2012). Assessing the effects of service quality and justice on customer satisfaction and the continuance intention of mobile value-added services: An empirical test of a multidimensional model. *Decision Support Systems*, 52(3), 645–656.
- Zhou, T. (2013). An empirical examination of user adoption of location-based services. *Electronic Commerce Research and Applications*, 13(1), 25–39.
- Zhou, T. (2016). Examining user switch between mobile stores: A push-pull-mooring perspective. *Information Resources Management Journal*, 29(2), 1–13.