



Journal of Services Marketing

Enhancing customers' continued mobile app use in the service industry

Seonjeong (Ally) Lee,

Article information:

To cite this document:

Seonjeong (Ally) Lee, (2018) "Enhancing customers' continued mobile app use in the service industry", Journal of Services Marketing, <https://doi.org/10.1108/JSM-01-2017-0015>

Permanent link to this document:

<https://doi.org/10.1108/JSM-01-2017-0015>

Downloaded on: 17 July 2018, At: 04:06 (PT)

References: this document contains references to 104 other documents.

To copy this document: permissions@emeraldinsight.com

Access to this document was granted through an Emerald subscription provided by emerald-srm:172900 []

For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit www.emeraldinsight.com/authors for more information.

About Emerald www.emeraldinsight.com

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

*Related content and download information correct at time of download.

Enhancing customers' continued mobile app use in the service industry

Seonjeong (Ally) Lee
Kent State University, Kent, Ohio, USA

Abstract

Purpose – This study aims to empirically investigate ways to enhance customers' continued mobile app use intention on the basis of information adoption model.

Design/methodology/approach – This study conducted an online, cross-sectional, self-administered survey, recruiting mobile app users in the USA.

Findings – Results identified both argument quality and source credibility positively influenced usefulness of branded apps and parasocial interactions. Results also confirmed a positive influence on usefulness of the branded app and parasocial interaction relating to continued branded app use intentions.

Originality/value – This study enriched the understanding of mobile app use behaviors, extending information adoption model in the service industry.

Keywords Usefulness, Argument quality, Mobile marketing, Parasocial interaction, Information adoption model, Source credibility, Continued mobile app use intention

Paper type Research paper

Introduction

The rapid growth of mobile technologies results in the proliferation of various types of mobile applications (hereafter, apps; Kim *et al.*, 2015). Over 25 billion iOS apps and 50 billion Android apps were downloaded in 2015 (Dogtiev, 2015). Responding to customers' needs, different segments of the service industry, including financial services (Ravuri, 2016), retailing (CRR, 2015), the tourism industry (Oh, 2014) and the hotel industry (Davidson, 2017), shifted to the mobile era. For example, an eMarketer's (2015) report noted 51.8 per cent of travelers who booked trips via digital channels used mobile devices and 0.75 billion airline boarding passes were delivered via a mobile phone, increasing to 1.5 billion passes by 2019 (Statistia, 2017).

Mobile marketing explains how customers access information through personal, mobile devices, which enable them to receive personalized messages (Chou *et al.*, 2015). It refers to “the two-way or multi-way communication and promotion of an offer between a firm and its customers using a mobile medium, device, or technology” (Shankar and Balasubramanian, 2009, p. 118). Mobile marketing started with the Short Message Service (SMS) for advertising purposes (Amirkhanpour *et al.*, 2014). Potential customers received text messages related to deals and promotions through SMS (Pantano and Priporas, 2016). Mobile marketing expanded to mobile apps for smart phones, Quick Response (QR) codes and

Near Field Communication (NFC). NFC is a technology that provides mobile devices with wireless, two-way and short-range connectivity. QR codes enable customers to pay in a contactless way (Zhao *et al.*, 2015).

Development of mobile technology fosters interactive brand–customer relationships (Shankar and Malthouse, 2007). The exponential growth of mobile technology leads to a mobile marketing platform known as “brand in the hand” (Sultan and Rohm, 2005). On the basis of customers' increased level of engagement with mobile devices in their daily activities, service organizations develop branded apps as an essential marketing communication channel to attract new customers and enhance customers' brand loyalty (Wang *et al.*, 2016). Branded apps refer to “software downloadable to a mobile device which prominently displays a brand identity, often via the name of the app and appearance of a brand logo or icon, throughout the user experience” (Bellman *et al.*, 2011, p. 191).

Despite the increased role of the branded apps and their potential impacts in the service industry, there is a dearth of research on continued branded apps use as a persuasive communication channel (Kim *et al.*, 2015). Given managerial needs and prevalence of mobile technology, scholars (Hsiao *et al.*, 2016; Ozturk *et al.*, 2016a) call for more research investigating how mobile technology is used in the service industry, and the role of the branded app on customer behavior (Bellman *et al.*, 2011; Kim *et al.*, 2015). Previous research on mobile marketing focuses on adoption intentions toward mobile technology (Muk and Chung, 2015; Park and Kim, 2014; Slade *et al.*, 2015). However, understanding customers' continued mobile app use behavior is a complex process that

The current issue and full text archive of this journal is available on Emerald Insight at: www.emeraldinsight.com/0887-6045.htm



requires sophisticated investigation beyond the technology adoption process (Ozturk *et al.*, 2016b).

While adoption models, such as technology acceptance mode (TAM), theory of reasoned action (TRA) or theory of planned behavior (TPB), are useful in understanding how customers' behavioral intentions toward a technology are formed, these models do not examine the persuasive process of the technology. Even though initial acceptance of technology is important, acceptance does not guarantee continued use (Hsieh *et al.*, 2008). Customers do not automatically use branded app activities because it is in a "pull" format; meaning customers only engage with an app when they actually want to use it (Bellman *et al.*, 2011). For instance, most mobile app users download travel apps; however, almost half of those apps are deleted later (Linton and Kwornik, 2015). This study takes the information adoption model (IAM) as a theoretical lens to examine the dual-routes of communication for continued use behaviors of a branded app in the context of the hotel industry. IAM explains the dual-process of persuasion on customers' attitudes and behaviors (Sussman and Siegal, 2003), proposing both central cue (argument quality) and peripheral cue (source credibility) of technology. In particular, this study investigates relationships among argument quality, source credibility, usefulness, parasocial interaction and continued branded app use intentions. This study enriches IAM by incorporating a relation-related factor and applying IAM to branded app situations in the service industry. Results also provide suggestions to managers in the service industry, showing how to encourage customers' continued mobile app use behavior.

Literature review

Customer relationship management via branded apps

Sustaining and creating customer loyalty helps organizations develop long-term relationships with customers (Pan *et al.*, 2012). Mobile marketing promotes relationships between customers and service providers, enhancing customer relationship management (CRM). CRM is derived from relationship marketing, serving as the key area of services marketing (Sheth and Parvatiyar, 2002). CRM is a comprehensive strategy, integrating the marketing, sales and customer service of an organization to create and deliver value to customers (Navimipour and Soltani, 2016). Owing to severe competition, hotels attempt to improve the quality of their services to gain new customers (Wu and Lu, 2012). CRM in the hotel industry not only focuses on identifying and retaining loyal customers, but also improves the profitability of less loyal customers (Rahimi and Gunlu, 2016).

Mobile apps provide innovative CRM practices because they develop new consumption habits in customers' daily lives. A branded app builds strong relationships with customers (Watson *et al.*, 2013). Bellman *et al.* (2011) support persuasive effects of branded apps, which influence the favorability of brand attitude and purchase intention. By logging in with a branded app, customers engage in multiple touch points with the brand. It allows customers to share information, engage various contents and make purchases (Wang *et al.*, 2016). For instance, Ritz-Carlton's mobile app provides special digital experiences related to the particular hotel location through a built-in QR code reader (Weissman, 2013). The Mandarin

Oriental Hotel's app enables customers to use an interactive 3-D global view and local city guide (Weissman, 2013). With these various technology options, a branded app in the hotel industry provides mobile concierge (e.g. local restaurant reservations, attraction information, etc.) and service request functions to customers (e.g. housekeeping service, late check-out request, etc.; Law *et al.*, 2015).

The prevalence of mobile devices fundamentally transformed operational practices and customers' experiences in the hotel industry (Ozturk *et al.*, 2016b). Hotels use mobile devices to provide personalized services to customers (Ozturk *et al.*, 2016a) and enhance customer loyalty (Berman, 2017). For instance, customers' preferences are stored via branded apps to sustain their relationships. However, mobile marketing requires a customer's agreement before delivering any marketing activities (Im and Ha, 2013). Thus, it is important to understand what factors influence customers' continued mobile app use behaviors.

Information adoption model

Theoretical underpinnings on mobile technology research include TAM (Park and Kim, 2014), TPB (Khalifa *et al.*, 2012), innovation diffusion theory (López-Nicolás *et al.*, 2008) and unified theory of acceptance and use of technology (Slade *et al.*, 2015). The adoption models, such as TRA and TAM, assume customers' adoption intentions are based on what customers expect after they adopt the technology (Filiari and McLeay, 2013). Wang and Wang (2010) argue existing technology adoption models are not enough to comprehend customers' behavioral intentions toward mobile apps. Leisure and business travelers may consider additional factors before they decide to use the mobile hotel app (Wang and Wang, 2010). Therefore, this study applies IAM, which investigates the persuasiveness of the branded app extending beyond the formation of behavioral intentions (Sussman and Siegal, 2003).

The original IAM explains argument quality and source credibility influence information usefulness, which further influences information adoption behavior. The IAM is developed based on the TAM (Davis, 1989), TRA (Fishbein and Ajzen, 1975) and dual-process models of informational influence (Petty and Cacioppo, 1986). When customers are motivated to cognitively process information, they engage in central route processing. On the other hand, when customers have low motivation and little knowledge to process information, they engage in the peripheral route of processing (Bhattacharjee and Sanford, 2006). According to IAM, argument quality serves as an important central cue in the persuasive process (Bhattacharjee and Sanford, 2006; Li, 2013). In addition, source credibility is a peripheral cue in the persuasive process (Bhattacharjee and Sanford, 2006; Li, 2013). The dual-process of persuasion leads to users' information adoption behaviors (Sussman and Siegal, 2003) and continued use behaviors (Hur *et al.*, 2017).

Owing to the high abandonment rates of mobile apps, understanding factors that influence customers' continued mobile app use behavior is critical for the success of mobile marketing (Shankar and Balasubramanian, 2009). Researchers advocate the importance of information system continuance as continued information system use is central to the survival of organizations (Bhattacharjee and Sanford, 2006; Hur *et al.*,

2017; Kim *et al.*, 2016). Scholars (Kim *et al.*, 2015) call for more research on factors that influence continued app use intention. Increasing *app recency*, the duration (e.g. the number of days) a customer has not accessed the app, indicates a sign of negative effects to the company (Kim *et al.*, 2015). Kim *et al.* (2015) identifies discontinued use of a brand's app hurts brand sales. Therefore, this study focuses on the continued branded app use intentions, which refer to the likelihood of customers' continued use of a branded app.

The IAM explains general motivations for users' intention to use technology, based on the dual-routes of persuasion process (Jin *et al.*, 2009). IAM applies to different technological applications to explain how people process and adopt information, such as the information system (Li, 2015), social media (Teng *et al.*, 2014), travel websites (Tseng and Wang, 2016) and online reviews (Zhang *et al.*, 2014). Depending on the research context, different variables are incorporated in IAM to better understand the persuasiveness of technology. Previous research includes playfulness (Li, 2015), site attachment (Kim *et al.*, 2016) and preference (Chang *et al.*, 2015) into the IAM model. For instance, Jin *et al.* (2009) incorporates disconfirmation of information quality, disconfirmation of source credibility and satisfaction into IAM to examine continued intention to use a computer-supported social network.

As this study focuses on branded apps in the service industry, a relationship-relevant variable is included in the model to better understand IAM in such contexts. One unique characteristic of the service industry is intangibility, where inherent risks are high and relationship building is important owing to the person-based business (Weathers *et al.*, 2007). Therefore, this study includes parasocial interaction (PSI) because developing an interaction is important owing to competitive markets in the service industry. PSI refers to media-enabled connections between users and media personalities (Rubin and Step, 2000). Such interactions allow users to enjoy interpersonal relationships with their media, enhancing the relationship between customers and brand.

Hypotheses development

Argument quality

The argument quality of the branded app serves as a central cue. Argument quality refers to "the persuasive strength of the arguments embedded in an information message" (Bhattacharjee and Sanford, 2006, p. 811). Argument quality is based on customers' rational and cognitive judgment (Bhattacharjee and Sanford, 2006) and is validated through comprehensiveness, accuracy and relevance of the information (Delone and McLean, 2003). People are involved in thoughtful processing for persuasive arguments to generate their own thoughts (Hur *et al.*, 2017). Such argument quality is associated with task-related or functional information, serving as an important central cue for customers' purchase decisions (Zhu *et al.*, 2016). Argument quality plays an important role in information technology (Kim *et al.*, 2016), since it influences customers' trust (Filiari *et al.*, 2015), persuasive messages (Teng *et al.*, 2014) and usefulness (Cheng and Ho, 2015). If a mobile app is perceived as effective, users develop a positive attitude toward the mobile app and vice versa (Cheung *et al.*, 2009).

When a branded app is valuable to use, it was observed that customers had better evaluations toward the app. Bellman *et al.* (2011) confirmed informational style encouraged generation of personal connections with the brand and showed more advertising effectiveness. Kim *et al.* (2013) also identified informational message strategies were used more in service branded apps than in product branded apps. In addition, it was assumed when a mobile app provided quality service customers were more likely to have enhanced feelings of PSI. Motivation was central to PSI, as different motivations led to various communication choices and behaviors (Rubin and Step, 2000). Previous studies identified social media users' motivations for using media positively influenced PSI (Joinson, 2008; Yuan *et al.*, 2016). In the context of mobile technology, Hur *et al.* (2017) identified argument quality positively influenced relationship maintenance motives, along with information seeking motives and entertainment motives. In line with IAM and previous research, this study proposed positive effects of argument quality on usefulness and customers' relationships with the brand.

H1. Argument quality has positive effects on usefulness of the branded app.

H2. Argument quality has positive effects on customers' feelings of PSI.

Source credibility

The source credibility of the branded app is an important peripheral cue. Source credibility refers to "the perceived ability and motivation of the message source to produce accurate and truth information" (Teng *et al.*, 2014, p. 748). Source credibility explains whether users perceive an information source as believable, competent and trustworthy (Gunawan and Huarng, 2015) through expertise, trustworthiness and attractiveness (Teng *et al.*, 2014). Source credibility is more influential for weak arguments and/or customers' low involvement conditions; however, argument quality is more persuasive for object-relevant arguments, such as product-relevant attributes when customers are highly involved (Li, 2013).

In mass communication contexts, source credibility determines audiences' attitudes toward mass media sources (Hovland *et al.*, 1953). Previous studies identify source credibility influences customers' attitudes (Ayeh, 2015), persuasive messages (Teng *et al.*, 2014) and perceived usefulness (Ayeh, 2015). In addition, source credibility influences feelings of interaction, such as PSI (Yuan *et al.*, 2016). Celebrity source credibility (Ohanian, 1990), media features and customer characteristics (Kim and Rubin, 1997) influence PSI. Yuan *et al.* (2016) identified source credibility also influenced PSI, which further influenced attitude and customer equity drivers in a social media context. Hur *et al.* (2017) identified source credibility positively influenced different customers' motives, such as information seeking motives, entertainment motives and relationship maintenance motives in the context of travel-related social media. Therefore, positive customer evaluations are predicted when the branded app includes source credibility. Applying the role of source

credibility in a branded app context, the following hypotheses are proposed:

- H3. Source credibility has positive effects on usefulness of the branded app.
- H4. Source credibility has positive effects on customers' feelings of PSI.

Usefulness of the branded app

Perceived usefulness is an important determinant in information system use (Adams *et al.*, 1992). Usefulness refers to whether potential users expect benefits when using an information technology system for their task performance (Davis *et al.*, 1989). According to the IAM, usefulness plays an important role between central and peripheral cues of persuasive information and information adoption behavior (Zhu *et al.*, 2016). In a mobile app context, characteristics of the branded app help customers evaluate the usefulness of a mobile app, such as whether the mobile app is worth using in the service delivery process. For instance, Kim *et al.* (2016) identified the positive relationship between usefulness and continuing usage of mobile tourism shopping. Since the branded app is expected to include useful features in making customers' use behaviors, this study predicts a positive effect of usefulness on continued mobile app use intentions. Based on IAM and previous research, the following hypothesis is proposed in the context of a branded app in the service industry.

- H5. Usefulness positively influences customers' continued mobile app use intentions.

Parasocial interaction

Horton and Wohl (1956) proposed the idea of PSI, which explains a face-to-face interaction that occurs between media characters and their audience (Ballantine and Martin, 2005). PSI is a social interaction rather than personal, owing to proximity, similarity and attraction characteristics (Wohlfeil and Whelan, 2012). PSI refers to an imaginary social relationship (Cohen, 2004), an illusion of a face-to-face relationship (Horton and Wohl, 1956) and an interpersonal interaction between media user and the consumed media (Schramm and Wirth, 2010).

Branded apps provide a "pull" marketing opportunity delivered via a mobile platform where customers develop

strong emotional attachments toward the brand. Many brands aim to emphasize the interactive experience between customers and mobile apps (Bellman *et al.*, 2011). For instance, Zhu *et al.* (2016) identified the role of relationship type on customers' product usefulness evaluation. They investigated tie strength as a form of relationship type. Previous research identified the positive role of PSI on customers' responses. For instance, PSI positively influences customers' loyalty intentions (Labrecque, 2014) and customer equity drivers (Yuan *et al.*, 2016). Thus, this study predicts PSI plays a positive role in the context of branded apps, proposing the following hypotheses:

- H6. Customers' feelings of PSI positively influence usefulness of the branded app.
- H7. Customers' feelings of PSI have positive effects on their continued mobile app use intentions.

Continued mobile app use intentions

On the basis of attitude theory (Ajzen, 2002), continued mobile app use intentions explain the likelihood of using a mobile app over service staff during the service delivery process. Owing to the predictive power of behavioral intentions, use intentions are one of the important concepts in information systems and marketing literature (Davis, 1989; Hur *et al.*, 2017). Behavioral intention refers to a person's subjective probability to carry out a specific action (Ajzen and Fishbein, 1980). Previous research (Venkatesh and Davis, 2000) identified that intention serves as a major determinant on actual behavior. Even though mobile phones are ubiquitous, not many customers experience a branded app in the service industry because they are considered in infancy stage. Thus, investigating customers' continued mobile app use intention is a desirable approach, allowing a timely investigation of customers' perceptions toward mobile app use.

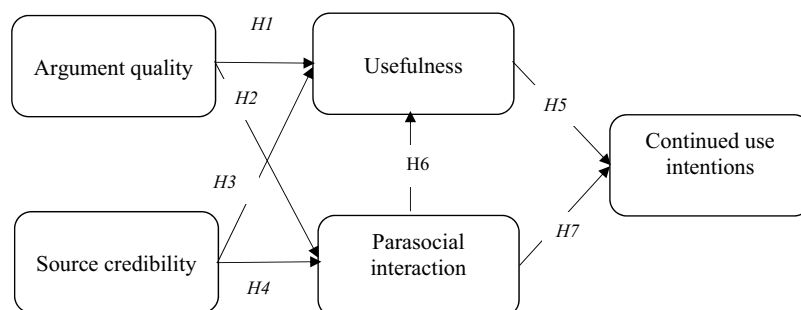
On the basis of the above discussions, Figure 1 describes the hypothesized relationships. The proposed conceptual model is useful in understanding and predicting customers' continued branded app use behavior.

Methodology

Study context

The hotel industry serves as the study context. Mobile technology is "new buzz" in the hotel industry as more customers attempt to use mobile apps for their service delivery

Figure 1 Proposed framework



process (Rudra, 2016). With mobile technology emerging as a major distribution channel, understanding factors that influence customers' continued mobile app use intentions in the hotel industry becomes vital (Ozturk *et al.*, 2016a). Features of a hotel app offer hotel information and services (e.g. location, amenities and facilities), enabling customers to customize their service and update their preferences (Ozturk *et al.*, 2016b). Accordingly, it is expected that hotel apps will play a key role, not only in distribution of rooms, but also in strengthening customer relationships and brand loyalty (Anuar *et al.*, 2014).

The nature of the service industry involves interactive processes between customers and service providers, which require customers to coproduce services (Verleye, 2015). During the service delivery process, customers decide to use mobile apps or interact with service staff for a similar service outcome. For example, hotel customers are encouraged to coproduce their service delivery process for check in/out on behalf of service representatives by using their app. In addition, the hotel industry is in an early stage of implementing mobile apps into the operational process; therefore, they need to understand how to promote customers' continued mobile app use behavior to garner a better return on investment.

Survey development

The online survey included five parts: screening questions, previous mobile app experience, argument quality and source credibility, usefulness, PSI and continued mobile app use intention and respondents' background questions. The survey began with two screening questions asking whether:

- 1 respondents stayed at a hotel within the previous 12 months; and
- 2 they used a hotel app during their hotel stays within the previous 12 months.

Once these two qualification questions were met, respondents were asked to provide the hotel app they used to recall their memories. To control the quality of responses, five validation questions were included throughout the survey. Validation questions, such as "click strongly agree to proceed with the survey", were included to ensure respondents carefully read survey questions before answering. Respondents who answered the qualification and validation questions correctly were included in the data analysis.

A seven-point, Likert-type scale (1= *strongly disagree* to 7= *strongly agree*) was used in the survey. Measurement items were adapted from previous studies to ensure validity and reliability issues. Measurement items of argument quality were measured with three items, adopted from Chang *et al.* (2015) and measurement items of source credibility were measured with three items adopted from Li (2013). Items of usefulness, PSI and continued mobile app use intentions were from Gao *et al.* (2013), Labrecque (2014) and Aye (2015), respectively. Items of usefulness included three items, PSI included six items and continued mobile app use intentions included three items.

Data collection

A pilot test was conducted with 60 students enrolled in a mid-western university. Minor adjustments were made to the survey to improve flow and clarity based on results from the pilot test. After the pilot, a Web-based, self-administered survey was used

for data collection. The professional online research company, Qualtrics, was hired to collect data. On the basis of the convenience sampling method, an invitation email was sent to consumer panel members of the online research company, who were over 18 years old and represented the general population of the USA. Among those members, those who had stayed at a hotel in the previous 12 months and used a hotel mobile app in the past 12 months were qualified to participate in the survey.

A total of 350 surveys were collected within a week; however, 15 surveys were excluded from analysis owing to incomplete or invalid responses. This study aimed to collect 300 responses based on the rule of thumb for the sample size requirement of structural equation modeling (SEM). The required sample size was based on 10 responses per one variable or 5 to 10 observations per estimated parameter to apply SEM for the data analysis (Bentler and Chou, 1987). A total of 335 surveys were used for data analysis, which was enough to apply the SEM.

Data analysis

Data were analyzed using the LISREL 8.80 structural equation analysis package (Jöreskog and Sörbom, 1989) based on Anderson and Gerbing's (1988) two-step approach – confirmatory factor analysis (CFA) and SEM. Before conducting the two-step approach, initial data analysis was conducted. Non-response bias analysis was conducted since this study used a self-reported online survey. Early responses were compared with later responses (Ary *et al.*, 1996) and no significant differences were identified; thus, non-response bias was not an issue in this study. Normality was also checked based on the results of skewness and kurtosis values. Values of skewness and kurtosis were between -2 and +2, representing an acceptable range (Hair *et al.*, 2010). In addition, the Kaiser–Meyer–Olkin (KMO) test and the Bartlett's Test of Sphericity were used to measure sampling adequacy. The value of the KMO value was 0.958 and the significance of the Bartlett's Test of Sphericity was 0.00, indicating the suitability of factor analysis (Hair *et al.*, 2010).

An exploratory factor analysis was conducted to examine the underlying factor structure of the construct as measurement items were modified based on the study context (e.g. the hotel industry). Three measurement items from PSI were eliminated owing to cross-loadings and ambiguity. Moreover, a CFA of all items loading on a single latent factor was performed to rule out common method bias (Podsakoff *et al.*, 2003). Results of the CFA with a single factor indicated a poor fit compared with the multi-factor models; thus, common method bias was not an issue in this study.

Results

Sample characteristics

Almost half of the respondents were female (50.7 per cent). A majority of respondents were between 25 and 34 years of age (37.9 per cent), followed by 35 and 44 years (25.1 per cent) and 19 and 24 years (14.3 per cent; see Table I). Respondents had hotel app experiences with different brands, including Marriott (n = 120), Hilton (n = 60), Hyatt (n = 28), Intercontinental (n = 54), MGM Resorts (n = 5), Omni (n = 7), Choice Hotels

Table I Respondents' background (N = 335)

Characteristic	Frequency	(%)
Gender		
Female	170	50.7
Male	165	49.3
Age		
18-24 years old	48	14.3
25-34 years old	127	37.9
35-44 years old	84	25.1
45-54 years old	45	13.4
55-64 years old	22	6.6
65 years and older	9	2.7
Education		
High school	75	22.4
Associate degree	85	25.4
Bachelor degree	125	37.3
Master's degree	42	12.5
Doctoral degree	8	2.4
Annual household income		
Under \$50,000	84	25.1
\$50,000-\$74,999	108	32.2
\$75,000-\$99,999	72	21.5
\$100,000-\$124,999	31	9.3
\$125,000-\$149,999	22	6.6
\$150,000 and above	18	5.4

(n = 19), Drury Hotels (n = 2), Red Roof Inn (n = 4), Wyndham (n = 20) and Best Western (n = 16).

Measurement model

According to the results from the CFA, the goodness of fit indices were $\chi^2(80) = 158.31, p = 0.00; \chi^2/df = 1.97$; normed fit index (NFI) = 0.98; non-normed fit index (NNFI) = 0.99; incremental fit index (IFI) = 0.99; comparative fit index (CFI) = 0.99; goodness of fit index (GFI) = 0.94; standardized root mean square residual (SRMR) = 0.034; and root mean square error of approximation (RMSEA) = 0.054. Results indicated an acceptable value for each model fit index based on Bagozzi and Yi's (1988) recommendation. Therefore, it was concluded the measurement model fit well with the data.

Results of CFA were used to evaluate construct reliability and validity. Convergent validity was investigated through factor loadings, average variance extracted (AVE), Cronbach's alpha and composite reliability (CR; see Table II). Factor loadings exceeded the recommended level of 0.60; values of AVE were greater than 0.50; and values of reliabilities were close to 0.90 (Hair et al., 2010). In addition, discriminant validity was investigated by comparing the squared correlations between constructs and variance extracted from a construct. All AVE estimates were larger than the corresponding squared inter-construct correlation estimates, showing discriminant validity (see Table III; Fornell and Larcker, 1981).

Structural model and hypothesis testing

SEM results confirmed an acceptable value for each model fit index (Bagozzi and Yi, 1988). The goodness-of-fit statistics for

the structural model were $\chi^2(82) = 158.92; p = 0.00; \chi^2/df = 1.93$; NFI = 0.98; NNFI = 0.99; IFI = 0.99; CFI = 0.99; GFI = 0.94; SRMR = 0.035; and RMSEA = 0.053.

The proposed hypotheses were investigated based on the results of the SEM (see Table IV). Argument quality positively influenced usefulness of the branded app ($\beta = 0.43, p < 0.00$) and feelings of PSI ($\beta = 0.20, p < 0.05$), supporting Hypotheses 1 and 2. The effects of argument quality on customers' responses were consistent with previous research (Cheng and Ho, 2015; Teng et al., 2014). Source credibility also positively influenced usefulness of the branded app ($\beta = 0.20, p < 0.05$) and feelings of PSI ($\beta = 0.75, p < 0.00$), supporting Hypotheses 3 and 4. Consistent with previous research (Aych, 2015; Teng et al., 2014), results indicated a positive influence of source credibility on customers' responses. These findings confirmed that when customers perceived high levels of argument quality and source credibility from a branded app, they developed positive evaluations toward the branded app.

Moreover, usefulness of the branded app influenced customers' continued mobile app use intentions ($\beta = 0.37, p < 0.00$), supporting Hypothesis 5. Customers' feelings of PSI positively influenced usefulness of the branded app ($\beta = 0.24, p < 0.00$) and customers' continued mobile app use intentions ($\beta = 0.54, p < 0.00$); thus, Hypotheses 6 and 7 were supported. The impact of PSI on customers' continued mobile app use intentions showed a stronger path coefficient than the path from usefulness of the branded app. This result supported the importance of PSI on the branded apps, in addition to usefulness in the service industry. PSI promoted customers' continued app use intentions in the service industry where relationship building played a vital role in enhancing customers' mobile experiences.

Discussion

Mobile marketing strategies were based on how customers accessed information through mobile devices and interacted with a company (Chou et al., 2015). Previous studies investigated mobile marketing by examining risk avoidance (Gao et al., 2013), personal traits (such as innovativeness) (Rohm et al., 2012), value co-creation (Morosan and DeFranco, 2016), perceived value (Turel et al., 2007) and social influence (such as subjective norm; Ozturk et al., 2016b). With the increased role of mobile marketing, little attention was paid to factors that promoted customers' continued mobile app use behavior and examined the persuasiveness of a branded app. Therefore, this study investigated important factors that promoted customers' continued mobile app use intention in the service industry.

As central and heuristic cues of the persuasion process, both argument quality and source credibility of a branded app positively influenced usefulness and feelings of PSI. Among those relationships, the strongest was between source credibility and PSI, followed by the relationships between argument quality and usefulness, argument quality and PSI and source credibility and usefulness. The effects of argument quality and source credibility were consistent with previous research. Jin et al. (2009) identified positive effects of argument quality on information usefulness and positive effects of source

Table II Measurement model results ($N = 335$)

Measurement items	Mean (SD)	SFL	CR	α
Argument quality				
Using the branded mobile app is informative	5.80 (0.90)	0.89	0.91	0.91
Using the branded mobile app is valuable	5.80 (0.89)	0.88		
Using the branded mobile app is helpful	5.56 (0.92)	0.72		
Source credibility				
Using the branded mobile app is trustworthy	5.57 (1.01)	0.81	0.90	0.90
Using the branded mobile app is credible	5.76 (1.00)	0.88		
Using the branded mobile app appears to be an expert	5.68 (0.98)	0.91		
Usefulness				
Using the branded mobile app would be useful in requesting my service	6.12 (0.97)	0.85	0.90	0.90
Using the branded mobile app would make my hotel stay easier	5.90 (1.05)	0.92		
Using the branded mobile app would be useful in meeting my needs	5.78 (1.06)	0.85		
Parasocial interaction				
Using the branded mobile app makes me comfortable, as if I am with a friend	5.39 (1.43)	0.84	0.89	0.89
When I interact with the branded mobile app, I feel included	5.76 (1.19)	0.85		
I can relate to the branded mobile app	5.74 (1.14)	0.88		
Continued use intention				
I intend to use the branded mobile app for the next time	4.55 (1.62)	0.92	0.94	0.94
I expect to use the branded mobile app in the future	4.72 (1.62)	0.97		
I plan to use the branded mobile app in the future	4.67 (1.66)	0.89		

SFL refers to standard factor loadings, and CR refers to composite reliability

Table III Discriminant validity ($N = 335$)

Constructs	1	2	3	4	5
1. AQ	<i>0.85</i>				
2. SC	0.46	<i>0.88</i>			
3. USE	0.35	0.35	<i>0.84</i>		
4. PSI	0.35	0.49	0.32	<i>0.84</i>	
5. UI	0.14	0.18	0.18	0.20	<i>0.80</i>

Note: The values in italic represent the average variance extracted and the values below represent the squared inter-construct correlations

credibility on customer satisfaction in the context of a computer-supported social network.

Interestingly, effects of argument quality on usefulness of the branded app were stronger than those of source credibility. Effects of source credibility on PSI were stronger than those of argument quality. These results were owing to dual-routes of the persuasion process (Sussman and Siegal, 2003). Argument quality was based on cognitive evaluation, whereas source credibility was based on affective evaluation (Sussman and Siegal, 2003). Thus, the effects of each process were different. Results not only made comparisons between the systematic and heuristic persuasion process toward the branded app, but also contributed to mobile marketing research by examining the dual-route of persuasive communications in enhancing customers' continued mobile app use intentions.

Moreover, usefulness of the branded app had significant effects on customers' continued mobile app use intention, supported in the IAM and previous literature (Bhattacharjee and Sanford, 2006; Zhu *et al.*, 2016). Consistent with previous

research (Lee and Lee, 2017; Yuan *et al.*, 2016), results supported a positive influence of PSI on usefulness and customers' continued mobile app use intention. Mobile technologies transformed the mobile device into an innovative, powerful platform that engaged customers (Gao *et al.*, 2013). As more customers adopted mobile technology, it became an indispensable distribution channel in the service industry. It was imperative to understand key determinants of customers' continued mobile app use intentions. Success of information systems depended on customers' continued use of technology, rather than initial acceptance (Bhattacharjee, 2001). Thus, encouraging customers' continued mobile app use intention was a desirable marketing approach because the brand grew by increasing return on investment and attracting more customers to the business.

Conclusions

Theoretical contributions

This research developed and empirically examined a theoretical model that investigated antecedents of customers' continued mobile app use intentions. Results demonstrated the IAM was highly predictive of customers' continued mobile app use intentions, examining the formation of customers' continued mobile app use intentions. Results of this research provided theoretical contributions to the mobile marketing in a general context and to branded apps in a service industry context.

This study contributed to previous mobile marketing research by providing a conceptual model that predicted customers' continued app use intention in the service industry. While the importance of adoption and use behaviors is recognized in mobile marketing (Muk and Chung, 2015;

Table IV Structural model results ($N = 335$)

Structural paths	Standardized path coefficients	t-statistic	Results of hypotheses testing
H1: AQ → Usefulness	0.43 ^{***}	4.50	Supported
H2: AQ → PSI	0.20 ^{**}	2.21	Supported
H3: SQ → Usefulness	0.20 ^{**}	1.80	Supported
H4: SQ → PSI	0.75 ^{***}	8.68	Supported
H5: Usefulness → Use intention	0.37 ^{***}	3.29	Supported
H6: PSI → Usefulness	0.24 ^{***}	2.85	Supported
H7: PSI → Use intention	0.54 ^{***}	4.88	Supported

Notes: ^{***} $p < 0.01$; ^{**} $p < 0.05$; NFI = 0.98; IFI = 0.99; CFI = 0.99; RMSEA = 0.048

Slade *et al.*, 2015), the conceptualization and empirical validation of continued mobile app use behavior derived from the dual-persuasion process in a branded app has not been addressed. Simply investigating customers' intentions to adopt technology does not guarantee long-term success of the branded app (Wang and Wang, 2010). Investigating and validating customers' continued mobile app use intentions provided a theoretical contribution by determining a role of persuasive process in the development of customers' continued use behavior.

In addition, this study investigated the persuasion process of the branded app, derived from IAM research (Sussman and Siegal, 2003). Applying IAM to a mobile app context of the service industry extended the applicability of IAM theory to other contexts. By using the IAM to gain insights into branded apps in the service industry, this study revealed central and peripheral routes were not mutually exclusive in branded app contexts, as customers relied on both information processes to evaluate branded apps. Building upon previous research on the dual-routes of persuasion, this study revealed both dimensions were critical determinants that significantly influenced customers' continued mobile app use intentions.

Moreover, results provided insights on the role of PSI in a branded app context. Reflecting on unique characteristics of the service industry, an additional construct was incorporated into the IAM model to better understand factors influencing customers' continued mobile app use intention. Investigating the formation of usefulness perceptions and PSI helped researchers understand the dynamics of branded apps at the micro-level. Results of this research were supported in the behavioral decision theory (Edwards, 1961). Behavioral decision theory explained customers' decision-making processes were based on their values and beliefs (Einhorn and Hogarth, 1981; Khan *et al.*, 2005). When customers were confronted with options, they weighed available options before making decisions. Customers needed to use their time and skills when requesting service via mobile apps, compared to when they received service via a standardized method or a person-to-person interaction. Therefore, findings contributed to the emerging mobile marketing literature on PSI, proposing how positive relationship marketing was achieved via mobile apps.

Industry implications

Results suggest ways to gain competitive advantages for branded app use in the service industry. As the mobile app is a popular communication channel, understanding how and why customers engage provides useful implications for service businesses to gain competitive advantages (Tsotsou, 2015). More companies are adopting branded apps given the potential advantages of adopting this technology (Jan and Contreras, 2011). For instance, Marriott implements a mobile request function in its app, enabling customers to request service before, during or after their hotel stay (Wolf, 2017). If the customer's requested room is ready before check-in, the app provides an automatic notification to the customer. Conard Hotels' app from Hilton serves as a full-service concierge. The Conard Hotel app enables customers to customize and arrange their room service options, bath amenities and airport transportation (Weissman, 2013). Even though apps are powerful advertising tools, their positive impact on customer relationship building occurs only when customers are willing to continuously use the mobile app (Kim *et al.*, 2015). Thus, branded apps should include features that enhance customers' continued use intentions.

The results identified both central and peripheral processing persuaded customers. Service organizations should convey strong arguments in their mobile app strategies. Argument quality had a significant impact on perceived usefulness and PSI; thus, the service industry should contribute high-quality content given that accuracy of information is a vital factor influencing customers' continuous branded app use behavior. For instance, a branded app can convey updated and relevant information and include detailed and in-depth information to enhance central processing.

In addition, service organizations should enhance source credibility of branded apps. Branded apps need to incorporate trustworthy perceptions and integrity as a way of source credibility. Mobile apps use different types of peripheral cues, such as pictures and virtual tours, to formulate source credibility. For instance, branded apps can include vivid pictures and live videos to enhance trustworthy perceptions and believability of the branded apps. Moreover, mobile apps enhance usefulness and PSI to promote customers' continued use intentions. Branded apps can be integrated with other communication channels, such as websites and social media, to promote usefulness and PSI features of branded apps. When customers feel PSI and usefulness, they are more likely to use the mobile app in their daily life. With easily incorporated and user-friendly technologies, service organizations can foster a favorable relationship with customers via branded apps.

Limitations and suggestions for future research

This study had limitations, suggesting the need for future research. Respondents were previous hotel customers in the USA. Many service organizations pursue globalization to serve customers worldwide. Thus, cultural differences might play a significant role in responses. For instance, investigating different cultural backgrounds could provide different perceptions of mobile app persuasiveness. In addition, there were technological issues for customers to adopt branded apps. Mobile apps often required updates, and installing updates burdened customers. Therefore, future research should

investigate the role of technological issues, such as technology compatibility, to better understand customers' mobile app use behavior.

In addition, this study focused on argument quality and source credibility as mobile app features based on the IAM. Different styles influence customers' attitudes and behaviors in the branded app (Bellman *et al.*, 2011). Therefore, future research should investigate how to design mobile app interfaces, and what content create real-world app practices that encourage customers' engagement. Moreover, individual differences and situational characteristics should be explored. For instance, the role of customers' involvement (Jung *et al.*, 2016) should be investigated in the proposed model investigate persuasive branded app use in the service industry.

References

- Adams, D., Nelson, R. and Todd, P. (1992), "Perceived usefulness, ease of use, and usage of information technology: a replication", *MIS Quarterly*, Vol. 16 No. 2, pp. 227-247.
- Ajzen, I. (2002), *Constructing a TPB Questionnaire: Conceptual and Methodological Considerations*, available at: http://chuang.epage.au.edu.tw/ezfiles/168/1168/attach/20/pta_41176_7688352_57138.pdf
- Ajzen, I. and Fishbein, M. (1980), *Understanding Attitudes and Predicting Social Behavior*, Prentice-Hall.
- Amirkhanpour, M., Vrontis, D. and Thrassou, A. (2014), "Mobile marketing: a contemporary strategic perspective", *International Journal of Technology Marketing*, Vol. 9 No. 3, pp. 252-269.
- Anderson, J. and Gerbing, D. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-423.
- Anuar, J., Musa, M. and Khalid, K. (2014), "Smartphone's application adoption benefits using mobile hotel reservation system (MHRS) among 3 to 5-star city hotels in Malaysia", *Procedia-Social and Behavioral Sciences*, Vol. 130, pp. 552-557.
- Ary, D., Jacobs, L. and Razavieh, A. (1996), *Introduction to Research in Education*, Rinehart and Winston, Ft Worth, TX.
- Ayeh, J. (2015), "Travellers' acceptance of consumer-generated media: an integrated model of technology acceptance and source credibility theories", *Computers in Human Behavior*, Vol. 48, pp. 173-180.
- Bagozzi, R. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.
- Ballantine, P. and Martin, B. (2005), "Forming parasocial relationships in online communities", *NA-Advances in Consumer Research*, Vol. 32.
- Bellman, S., Potter, R., Treleven-Hassard, S., Robinson, J. and Varan, D. (2011), "The effectiveness of branded mobile phone apps", *Journal of Interactive Marketing*, Vol. 25 No. 4, pp. 191-200.
- Bentler, P. and Chou, C. (1987), "Practical issues in structural modeling", *Sociological Methods & Research*, Vol. 16 No. 1, pp. 78-117.
- Berman, M. (2017), "Three elements of a hospitality mobile app that drive loyalty", available at: www.martechadvisor.com/articles/loyalty-referral-gamification/three-elements-of-a-hospitality-mobile-app-that-drive-loyalty/
- Bhattacharjee, A. (2001), "Understanding information systems continuance: an expectation-confirmation model", *MIS Quarterly*, pp. 351-370.
- Bhattacharjee, A. and Sanford, C. (2006), "Influence processes for information technology acceptance: An elaboration likelihood model", *MIS Quarterly*, Vol. 30 No. 4, pp. 805-825.
- Center for retail research (CRR) (2015), "Mobile retailing 2015", available at: www.retailresearch.org/mobileretailing.php
- Chang, Y., Yu, H. and Lu, H. (2015), "Persuasive messages, popularity cohesion, and message diffusion in social media marketing", *Journal of Business Research*, Vol. 68 No. 4, pp. 777-782.
- Cheng, Y. and Ho, H. (2015), "Social influence's impact on reader perceptions of online reviews", *Journal of Business Research*, Vol. 68 No. 4, pp. 883-887.
- Cheung, M., Luo, C., Sia, C. and Chen, H. (2009), "Credibility of electronic word-of-mouth: Informational and normative determinants of on-line consumer recommendations", *International Journal of Electronic Commerce*, Vol. 13 No. 4, pp. 9-38.
- Chou, Y., Chuang, H. and Shao, B. (2015), "The impact of e-retail characteristics on initiating mobile retail services: a modular innovation perspective", *Information & Management*, Vol. 53 No. 4, pp. 481-492.
- Cohen, S. (2004), "Social relationships and health", *American Psychologist*, Vol. 59 No. 8, pp. 676.
- Davidson, C. (2017), "Hospitality is on the move - How mobile apps are empowering guests and boosting hotels' bottom lines", available at: http://hotelexecutive.com/business_review/3313/hospitality-is-on-the-move-how-mobile-apps-are-empowering-guests-and-boosting-hotels-bottom-lines
- Davis, F. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of in-formation technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-340.
- Davis, F., Bagozzi, R. and Warshaw, P. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 982-1003.
- Delone, W. and McLean, E. (2003), "The DeLone and McLean model of information systems success: a ten-year update", *Journal of Management Information Systems*, Vol. 19 No. 4, pp. 9-30.
- Dogtiev, A. (2015), "App usage statistics: 2015 roundup", available at: www.businessofapps.com/app-usage-statistics-2015/
- Edwards, W. (1961), "Behavioral decision theory", *Annual Review of Psychology*, Vol. 12 No. 1, pp. 473-498.
- Einhorn, H. and Hogarth, R. (1981), "Behavioral decision theory: processes of judgment and choice", *Annual Review of Psychology*, Vol. 32 No. 1, pp. 53-88.
- eMarketer (2015), "By 2016, most digital travel bookers will use mobile devices", available at: www.emarketer.com/Article/By-2016-Most-Digital-Travel-Bookers-Will-Use-Mobile-Devices/1013248
- Filieri, R., Alguezaui, S. and McLeay, F. (2015), "Why do travelers trust TripAdvisor? Antecedents of trust towards consumer-generated media and its influence on

- recommendation adoption and word of mouth”, *Tourism Management*, Vol. 51, pp. 174-185.
- Filieri, R. and McLeay, F. (2013), “E-wom and accommodation: an analysis of the factors that influence travelers’ adoption of information from online reviews”, *Journal of Travel Research*, Vol. 53 No. 1, pp. 44-57.
- Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research Reading*, Addison-Wesley, MA, p. 6.
- Fornell, C. and Larcker, D. (1981), “Structural equation models with unobservable variables and measurement error: Algebra and statistics”, *Journal of Marketing Research*, Vol. 18 No. 3, pp. 382-388.
- Gao, T., Rohm, A., Sultan, F. and Pagani, M. (2013), “Consumers un-tethered: a three-market empirical study of consumers’ mobile marketing acceptance”, *Journal of Business Research*, Vol. 66 No. 12, pp. 2536-2544.
- Gunawan, D. and Huarng, K. (2015), “Viral effects of social network and media on consumers’ purchase intention”, *Journal of Business Research*, Vol. 68 No. 11, pp. 2237-2241.
- Hair, J., Black, B., Babin, B. and Anderson, R. (2010), *Multivariate Data Analysis: A Global Perspective*, Pearson Education, Upper Saddle River, NJ.
- Horton, D. and Wohl, R. (1956), “Mass communication and Para-social interaction: observations on intimacy at a distance”, *Psychiatry*, Vol. 19 No. 3, pp. 215-229.
- Hovland, C., Janis, I. and Kelley, H. (1953), *Communication and Persuasion; Psychological Studies of Opinion Change*, Greenwood Press.
- Hsiao, C., Chang, J. and Tang, K. (2016), “Exploring the influential factors in continuance usage of mobile social apps: satisfaction, habit, and customer value perspectives”, *Telematics and Informatics*, Vol. 33 No. 2, pp. 342-355.
- Hsieh, J., Rai, A. and Keil, M. (2008), “Understanding digital inequality: comparing continued use behavioral models of the socio-economically advantaged and disadvantaged”, *MIS Quarterly*, Vol. 32 No. 1, pp. 97-126.
- Hur, K., Kim, T., Karatepe, O. and Lee, G. (2017), “An exploration of the factors influencing social media continuance usage and information sharing intentions among Korean travelers”, *Tourism Management*, Vol. 63, pp. 170-178.
- Im, H. and Ha, Y. (2013), “Enablers and inhibitors of permission-based marketing: a case of mobile coupons”, *Journal of Retailing and Consumer Services*, Vol. 20 No. 5, pp. 495-503.
- Jan, A. and Contreras, V. (2011), “Technology acceptance model for the use of information technology in universities”, *Computers in Human Behavior*, Vol. 27 No. 2, pp. 845-851.
- Jin, X., Cheung, C., Lee, M. and Chen, H. (2009), “How to keep members using the information in a computer-supported social network”, *Computers in Human Behavior*, Vol. 25 No. 5, pp. 1172-1181.
- Joinson, A. (2008), “Looking at, looking up or keeping up with people? Motives and use of facebook”, *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, ACM, Florence, pp. 1027-1036.
- Jöreskog, K. and Sörbom, D. (1989), *LISREL 7: A Guide to the Program and Applications*, Spss., Scientific Software, Chicago, IL.

- Jung, E., Walsh-Childers, K. and Kim, H. (2016), “Factors influencing the perceived credibility of diet-nutrition information websites”, *Computers in Human Behavior*, Vol. 58, pp. 37-47.
- Khalifa, M., Cheng, S. and Shen, K. (2012), “Adoption of mobile commerce: a confidence model”, *Journal of Computer Information Systems*, Vol. 14 No. 11, pp. 14-22.
- Khan, U., Dhar, R. and Wertenbroch, K. (2005), “A behavioral decision theory perspective on hedonic and utilitarian choice”, *Inside Consumption: Frontiers of Research on Consumer Motives, Goals, and Desires*, Vol. 1, pp. 144-165.
- Kim, J. and Rubin, A. (1997), “The variable influence of audience activity on media effects”, *Communication Research*, Vol. 24 No. 2, pp. 107-135.
- Kim, E., Lin, J. and Sung, Y. (2013), “To app or not to app: engaging consumers via branded mobile apps”, *Journal of Interactive Advertising*, Vol. 13 No. 1, pp. 53-65.
- Kim, M., Chung, N., Lee, C. and Preis, M. (2016), “Dual-route of persuasive communications in mobile tourism shopping”, *Telematics and Informatics*, Vol. 33 No. 2, pp. 293-308.
- Kim, S., Wang, R. and Malthouse, E. (2015), “The effects of adopting and using a brand’s mobile application on customers’ subsequent purchase behavior”, *Journal of Interactive Marketing*, Vol. 31, pp. 28-41.
- Labrecque, L. (2014), “Fostering consumer-Brand relationships in social media environment: the role of parasocial interaction”, *Journal of Interactive Marketing*, Vol. 28 No. 2, pp. 134-148.
- Law, R., Leung, R., Lo, A., Leung, D. and Fong, L. (2015), “Distribution channel in hospitality and tourism: revisiting disintermediation from the perspectives of hotels and travel agencies”, *International Journal of Contemporary Hospitality Management*, Vol. 27 No. 3, pp. 431-452.
- Lee, S. and Lee, M. (2017), “Effects of relationship types on customers’ parasocial interactions: promoting relationship marketing in social media”, *Journal of Hospitality and Tourism Technology*, Vol. 8 No. 1, pp. 133-147.
- Li, C. (2013), “Persuasive message on information system acceptance: a theoretical extension of elaboration likelihood model and social influence theory”, *Computers in Human Behavior*, Vol. 29 No. 1, pp. 264-275.
- Li, C. (2015), “The effects of source credibility and argument quality on employees’ responses toward information system usage”, *Asia Pacific Management Review*, Vol. 20 No. 2, pp. 56-64.
- Linton, H. and Kwortnik, R. (2015), “The mobile revolution is here: are you ready?”, *Cornell Hospitality Report*, Vol. 18 No. 1, pp. 18.
- López-Nicolás, C., Molina-Castillo, F. and Bouwman, H. (2008), “An assessment of advanced mobile services acceptance: contributions from TAM and diffusion theory models”, *Information & Management*, Vol. 45 No. 6, pp. 359-364.
- Morosan, C. and DeFranco, A. (2016), “Co-creating value in hotels using mobile devices: a conceptual model with empirical validation”, *International Journal of Hospitality Management*, Vol. 52, pp. 131-142.
- Muk, A. and Chung, C. (2015), “Applying the technology acceptance model in a two-country study of SMS advertising”, *Journal of Business Research*, Vol. 68 No. 1, pp. 1-6.

- Navimipour, N. and Soltani, Z. (2016), "The impact of cost, technology acceptance and employees' satisfaction on the effectiveness of the electronic customer relationship management", *Computers in Human Behavior*, Vol. 55, pp. 1052-1066.
- Ohanian, R. (1990), "Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness, and attractiveness", *Journal of Advertising*, Vol. 19 No. 3, pp. 39-52.
- Oh, S. (2014), "Effective mobile marketing across retail, travel, automotive, & financial services", available at: <http://marketingland.com/tips-effective-mobile-marketing-across-industries-83820>
- Ozturk, A., Bilgihan, A., Nusair, K. and Okumus, F. (2016b), "What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience", *International Journal of Information Management*, Vol. 36 No. 6, pp. 1350-1359.
- Ozturk, A., Nusair, K., Okumus, F. and Hua, N. (2016a), "The role of utilitarian and hedonic values on users' continued usage intention in a mobile hotel booking environment", *International Journal of Hospitality Management*, Vol. 57, pp. 106-115.
- Pan, Y., Sheng, S. and Xie, F. (2012), "Antecedents of customer loyalty: an empirical synthesis and reexamination", *Journal of Retailing and Consumer Services*, Vol. 19 No. 1, pp. 150-158.
- Pantano, E. and Priporas, C. (2016), "The effect of mobile retailing on consumers' purchasing experiences: a dynamic perspective", *Computers in Human Behavior*, Vol. 61, pp. 548-555.
- Park, E. and Kim, J. (2014), "An integrated adoption model of mobile cloud services: exploration of key determinants and extension of technology acceptance model", *Telematics and Informatics*, Vol. 31 No. 3, pp. 376-385.
- Petty, R. and Cacioppo, J. (1986), "The elaboration likelihood model of persuasion", *Advances in Experimental Social Psychology*, Vol. 19 No. 1, pp. 123-205.
- Podsakoff, P., MacKenzie, S., Lee, J. and Podsakoff, N. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Rahimi, R. and Gunlu, E. (2016), "Implementing customer relationship management (CRM) in hotel industry from organizational culture perspective: case of a chain hotel in the UK", *International Journal of Contemporary Hospitality Management*, Vol. 28 No. 1, pp. 89-112.
- Ravuri, L. (2016), "Mobile apps quickly becoming financial services' biggest asset", available at: <https://blogs.adobe.com/aemmobile/2016/03/mobile-apps-quickly-becoming-financial-services-biggest-asset.html>
- Rohm, A., Gao, T. and Sultan, F. (2012), "Brand in the hand: a cross-market investigation of consumer acceptance of mobile marketing", *Business Horizons*, Vol. 55 No. 5, pp. 485-493.
- Rubin, A. and Step, M. (2000), "Impact of motivation, attraction, and parasocial interaction on talk radio listening", *Journal of Broadcasting & Electronic Media*, Vol. 44 No. 4, pp. 635-654.
- Rudra, S. (2016), "Can mobile apps make for happy hotel guests?", Available at: www.jllrealviews.com/industries/can-mobile-apps-make-happy-hotel-guests/
- Schramm, H. and Wirth, W. (2010), "Testing a universal tool for measuring parasocial interactions across different situations and media", *Journal of Media Psychology*, Vol. 22, pp. 26-36.
- Shankar, V. and Balasubramanian, S. (2009), "Mobile marketing: a synthesis and prognosis", *Interactive Journal of Marketing*, Vol. 23 No. 2, pp. 118-129.
- Shankar, V. and Malhotra, E. (2007), "The growth of interactions and dialogs in interactive marketing", *Journal of Interactive Marketing*, Vol. 21 No. 2, pp. 2-4.
- Sheth, J. and Parvatiyar, A. (2002), "Evolving relationship marketing into a discipline", *Journal of Relationship Marketing*, Vol. 1 No. 1, pp. 3-16.
- Slade, E., Dwivedi, Y., Piercy, N. and Williams, M. (2015), "Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: extending UTAUT with innovativeness, risk, and trust", *Psychology & Marketing*, Vol. 32 No. 8, pp. 860-873.
- Statista (2017), available at: www.statista.com/statistics/322786/mobile-phone-boarding-pass/
- Sultan, F. and Rohm, A. (2005), "The coming era of "Brand in the hand" marketing", *MIT Sloan Management Review*, Vol. 47 No. 1, p. 83.
- Sussman, S. and Siegal, W. (2003), "Informational influence in organizations: an integrated approach to knowledge adoption", *Information System Research*, Vol. 14 No. 1, pp. 47-65.
- Teng, S., Khong, K., Goh, W. and Chong, A. (2014), "Examining the antecedents of persuasive eWOM messages in social media", *Online Information Review*, Vol. 38 No. 6, pp. 746-768.
- Tseng, S. and Wang, C. (2016), "Perceived risk influence on dual-route information adoption processes on travel websites", *Journal of Business Research*, Vol. 69 No. 6, pp. 2289-2296.
- Tsiotsou, R. (2015), "The role of social and parasocial relationships on social networking sites loyalty", *Computers in Human Behavior*, Vol. 48, pp. 401-414.
- Turel, O., Serenko, A. and Bontis, N. (2007), "User acceptance of wireless short messaging services: deconstructing perceived value", *Information & Management*, Vol. 44 No. 1, pp. 63-73.
- Venkatesh, V. and Davis, F. (2000), "A theoretical extension of the technology acceptance model: four longitudinal field studies", *Management Science*, Vol. 46 No. 2, pp. 186-204.
- Verleye, K. (2015), "The co-creation experience from the customer perspective: its measurement and determinants", *Journal of Service Management*, Vol. 26 No. 2, pp. 321-342.
- Wang, B., Kim, S. and Malhotra, E. (2016), "The new advertising: branding, content, and consumer relationships in the data-driven social media era", In Ruth, E., Valerie, K., & Wang, M. (Ed.), *Branded apps and mobile platforms as new tools for advertising*, ABC-CLIO, Santa Barbara, CA.
- Wang, H. and Wang, S. (2010), "Predicting mobile hotel reservation adoption: insight from a perceived value standpoint", *International Journal of Hospitality Management*, Vol. 29 No. 4, pp. 598-608.
- Watson, C., McCarthy, J. and Rowley, J. (2013), "Consumer attitudes towards mobile marketing in the smart phone era", *International Journal of Information Management*, Vol. 33 No. 5, pp. 840-849.

- Weathers, D., Sharma, S. and Wood, S. (2007), "Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods", *Journal of Retailing*, Vol. 83 No. 4, pp. 393-401.
- Weissman, S. (2013), "5 hotel brands with useful mobile apps", Available at: <https://digiday.com/marketing/5-hotel-brands-with-useful-mobile-apps/>
- Wohlfeil, M. and Whelan, S. (2012), "Saved!" by Jena malone: an introspective study of a consumer's fan relationship with a film actress", *Journal of Business Research*, Vol. 65 No. 4, pp. 511-519.
- Wolf, J. (2017), "Marriott reimagines its mobile app to meet the needs of modern world travelers", available at: <http://news.marriott.com/2017/02/marriott-reimagines-mobile-app-meet-needs-modern-world-travelers/>
- Wu, S. and Lu, C. (2012), "The relationship between CRM, RM, and business performance: a study of the hotel industry in Taiwan", *International Journal of Hospitality Management*, Vol. 31 No. 1, pp. 276-285.
- Yuan, C., Kim, J. and Kim, S. (2016), "Parasocial relationship effects on customer equity in the social media context", *Journal of Business Research*, Vol. 69 No. 9, pp. 3795-3803.

- Zhang, K., Zhao, S., Cheung, C. and Lee, M. (2014), "Examining the influence of online reviews on consumers' decision-making: a heuristic-systematic model", *Decision Support System*, Vol. 67, pp. 78-89.
- Zhao, Y., Smith, J. and Alanson, S. (2015), "NFC-WISP: a sensing and computationally enhanced near-field RFID platform" *Proceedings of International Conference on RFID, IEEE*, pp. 174-181.
- Zhu, D., Chang, Y. and Luo, J. (2016), "Understanding the influence of C2C communication on purchase decision in online communities from a perspective of information adoption model", *Telematics and Informatics*, Vol. 33 No. 1, pp. 8-16.

Further reading

- Oh, H., Jeong, M. and Baloglu, S. (2013), "Tourists' adoption of self-service technologies at resort hotels", *Journal of Business Research*, Vol. 66 No. 6, pp. 692-699.

Corresponding author

Seonjeong (Ally) Lee can be contacted at: slee89@kent.edu