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Recommended Citation

Long, Ting and Suomi, Reima, "User continuance intention toward theme park apps: a uses and gratification perspective" (2022). *PACIS 2022 Proceedings*. 247.

https://aisel.aisnet.org/pacis2022/247

User Continuance Intention Toward Theme Park Apps: A Uses and Gratification Perspective

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Abstract

Theme park apps are quickly becoming ubiquitous in the theme park industry. Understanding the factors that explain users' continuance intention of theme park apps has attracted considerable attention from researchers and practitioners in tourism and information systems. This study seeks to address this issue from the perspective of uses and gratification. Within the proposed theoretical model, social, utilitarian, and hedonic gratifications are conceptualized as the antecedents of continuance intention, which, in turn, is proposed to affect users' revisit intention toward theme parks. We conducted a partial-least-squares analysis of 204 survey answers. The findings indicate that utilitarian and hedonic gratifications are determinants of continuance intention of theme park apps, and continuance intention positively affects users' revisit intention. This study contributes to continuance research in the context of theme park apps and offers practical implications for managing such apps.

Keywords: Theme park, mobile app, continuance intention, uses and gratification theory, revisit intention

Introduction

In recent years, mobile applications (apps) have exerted a significantly growing effect on the development of the tourism industry with the popularity of mobile devices and the ubiquitous access to wireless Internet. An increasing number of theme parks have launched dedicated apps to improve their visitors' experience (Omnico 2019). Theme park apps refer to mobile apps that are intentionally designed for theme park visitors and offer multi-functional services to satisfy visitors' various needs throughout the journey (Kamboj and Joshi 2021). For instance, visitors can obtain real-time standby line information, book tickets, earn membership points, arrange visit routes, and reserve digital fast-pass tickets for specific attractions in the park via using a theme park app. Particularly, under the COVID-19 pandemic situation, theme park apps have become an important tool for theme park visitors to obtain safety notifications and touchless services. However, like other mobile apps, the low level of end-user acceptance and usage of theme park apps are still a challenge for the successful implementation (Gupta et al. 2018; Lu et al. 2015). Thus, it is important to investigate the factors that may facilitate individuals' acceptance and usage of theme park apps.

Prior studies have examined the determinants of acceptance and usage of mobile apps related to tourism from different perspectives. For instance, by integrating the technology adoption model, innovation diffusion theory, and social cognitive theory, Huang et al. (2019) found that the determinants of acceptance of mobile travel apps include perceived usefulness and customers' experience. Based on the extended

unified theory of acceptance and use of technology (UTAUT2), Gupta et al. (2018) demonstrated that performance expectancy, social influence, price saving, perceived trust, risk, and previous usage habits influence user acceptance of travel-related mobile apps. Although these findings offer important insights into this study, they emphasized the acceptance of such apps, with little focus on the continued use, which highlights the long-term use of an app (Bhattacherjee 2001). Continuance is essential for long-term IS success and commercial competitive advantages (Bhattacherjee 2001). Notably, many visitors only use the app once during their visits to a theme park and often drop it off after the trip. In order to attract repeated visitors, it is important to encourage them to continue using the app to get informed of promotions and events. Hence, it is critical to understand the factors that explain visitors' continuance intention of theme park apps.

Continuance intention of mobile apps has been widely studied in IS, such as mobile payment apps (Humbani and Wiese 2019; Susanto et al. 2016), mobile health apps (Chiu et al. 2021; Zhang et al. 2017), mobile brand apps (Murillo-Zegarra et al. 2020; Qing and Haiying 2021) and social media apps (Gan and Li 2018; Mouakket 2015). While the literature on continuance intention has grown rapidly, the research on individuals' continuance intention in the particular context of theme park apps is relatively rare (Yan et al. 2021). Unlike mobile apps in other contexts, a theme park app is a dedicated all-in-one app designed to fulfill visitors' various needs before-, in-, and after-trip. Specifically, since visitors often want to gain the most of their time on attractions (usually one day or two days), theme park apps aim to help visitors avoid wasting extra time and improve their efficiency especially during the visit, such as offering GPS-based map and virtual queue functions. Additionally, theme park apps can be used to match users' hedonic needs, such as listening to music and playing mini-games while queueing. Furthermore, visitors can use theme park apps to interact with other visitors or friends, such as sharing visiting moments and photos. The factors identified in prior literature mainly focus on the unitarian perspective, such as perceived usefulness and perceived ease of use (e.g., Chiu et al. 2021; Humbani and Wiese 2019). The hedonic and social perspectives have not been highlighted in the research on continuance of theme park apps. Thus, a fine-grained examination of the antecedents that drive the visitors' continuance intention in the particular context of the theme park app is needed.

Furthermore, little research has explored the consequences of continuance intention of theme park apps. Several consequences of continuance intention of IS have been reported in prior literature. For instance, Li and Liu (2014) found that users' continuance intention of online travel services affects their word of mouth. In the work of Lu et al. (2019), continuance intention of the Internet positively influences users' well-being, perceived value, and four types of emotions. In fact, theme park operators wish to utilize the mobile apps to motivate visitors to repeat their visits to theme parks. However, few studies have offered empirical evidence to support the positive impacts of continuance intention of theme park apps on users' revisit intention. Therefore, further investigation is required.

To address above discussed research gap, this study aims to examine the determinants of continuance intention of theme park apps based on the uses and gratifications (U&G) theory. According to U&G theory (Katz et al. 1974), how people use a particular media is based on fulfilling their specific needs. This theory has been widely used to examine what gratifications affect user behavior in IS field (e.g., Ho and See-To 2018; Whiting and Williams 2013). In the context of theme park apps, users often use an app to satisfy their different needs, such as improving their experience and efficiency during the visit, gaining entertainment via using the app, and sharing experience with others. In light of this, a research model based on U&G theory is suitable for this study. In addition, a positive relationship between continuance intention and revisit intention is proposed. We tested the model with empirical data collected from Chinese users of theme park apps via an online survey (N = 204). In doing so, our study contributes to strengthening the roles of gratifications in motivating users' continuance intention in the specific context of theme park apps, as well as advancing the understanding of consequences of continuance intention of theme park apps.

The remainder of the paper proceeds as follows. The second section contains the relevant literature on mobile apps in tourism, uses and gratifications theory, and revisit intention. The research model and hypotheses are then introduced in the third section. Afterward, the research method used to collect and analyze the data are presented in the fourth section. The research findings are discussed in the fifth section. Finally, in the sixth section, the theoretical and practical implications are addressed as well as the research limitation.

Literature review

Mobile apps in tourism

The application of mobile apps in the field of tourism has attracted considerable attention from researchers, and prior studies can be categorized into two main research streams. One research stream focuses on the antecedents of individuals' adoption and usage of such mobile apps from different theoretical perspectives. For instance, by integrating the technology adoption model, social cognitive theory, and innovation diffusion theory, Lu et al. (2015) found that performance outcome, personal outcome, and innovation characteristics exhibit positive impacts on users' adoption intention of mobile travel apps regarding rural tourism destinations in China. In the research of Fang et al. (2017), based on the Stimulus-OrganismResponse (S-O-R) model, social, utilitarian, and hedonic benefits are identified as motivators of users' inten-Cabanillas et al. (2020) found that perceived usefulness, enjoyment, perceived value, and performance risk are antecedents of individuals' use intention.

The second research stream emphasizes the consequences of using mobile apps in tourism. For instance, Wang et al. (2014) suggested that the use of smartphones has the potential to substantially transform the visitors' experience. Specifically, after using smartphones, before-trip planning becomes easier than before, since smartphones can offer them a convenient solution for information search and arrangement. The on-site trip also becomes more flexible than non-use of apps since visitors can easily change their plans if the planned events do not meet their expectations. The after-trip experience also changes, such as visitors sharing their experience with others less since they have done this via smartphones during the trip (Wang et al. 2014). Studying sport-based mobile apps in tourism, Perez-Aranda et al. (2021) noted that continuance intention to use tourism apps positively affects their intention to visit the tourism destination.

Although these studies offer important insights for understanding the antecedents and consequences of continuance intention of theme park apps, there are several research gaps. Specifically, while researchers have investigated individual usage of mobile tourism apps, most focus on the initial adoption, and few emphasize the continuance intention. In addition, the understanding of the consequences of use intention of mobile tourism apps is fragile, and only several outcomes have been reported, such as the use behavior or visit intention. Other consequences, such as revisit intention, have not been studied. Furthermore, thus far, little research has examined theme park apps. Unlike general travel mobile apps (e.g., TripAdvisor and Hopper), theme park apps are dedicated apps for visitors to organize their visit to a specific theme park. They are designed as all-in-one applications that can provide theme park visitors with multiple features to satisfy their multiple needs, such as utilitarian needs (e.g., booking tickets/merchandise, obtain real time standby line information, ordering food or drinks in advance, and managing itineraries), hedonic needs (e.g., have fun), and social needs (e.g., sharing experience with others). In addition, these apps offer visitors a hybrid experience that combines a digital interactive service with physical attractions, which may influence visitors' revisit intention. Given these features, the antecedents and consequences of continuance intention of theme park apps may vary. These gaps encourage us to investigate the role of fulfillments of various needs in predicting continuance intention, which in turn, may impact visitors' revisit intention in the particular context of theme park apps.

Uses and gratification theory

Uses and gratifications theory derives from the domain of mass communication and aims to explain why and how people actively seek out specific media to satisfy specific needs (Katz et al. 1974). It posits that individual users are active in selecting a particular media to satisfy their specific needs. The uses and gratifications theory has been widely used in IS field to examine user behaviors in different contexts, such as online games (e.g., Li et al. 2015), mobile apps (e.g., Gan and Li 2018; Kaur et al. 2020; Lee and Cho 2017), and microblogs (e.g., Liu et al. 2020).

Prior research has classified the gratifications related to using different IS to fulfill users' different needs. For instance, when studying computer adoption at home, Venkatesh and Brown (2001) categorized gratifications into utilitarian (utilitarian value), hedonic (fun), and social gratifications (status), and found

that all of them have positive influences on individuals' intention to use computers at home. Similarly, in the context of WeChat, Gan and Li (2018) divided gratifications into four types, including utilitarian, hedonic, social, and technical gratifications. The findings indicated that hedonic gratification (perceived enjoyment), utilitarian gratification (information sharing), and technology gratification (media appeal) positively affect users' continuance intention of WeChat. Regarding tourist attraction fan pages, Ho and See-To (2018) classified gratifications into entertainment, informativeness, and socializing gratifications. The findings of their study show that three different gratifications positively influence users' attitudes toward the fan page.

In summary, U&G theory has been applied to explain how individuals use an IS in different contexts. We selected it as the research framework for this study due to following reasons. First, this theory can help explain IS continuance on the individual level. Second, it can identify the types of gratifications obtained from previous use of a theme park app and help understand whether different gratifications play different roles in predicting individuals' continuance intention.

Revisit intention

Revisit intention refers to tourists' intention to visit a destination again (Isa et al. 2020; Meng and Han 2018). Unlike first-time tourists, repeat tourists are more likely to spend more time on a tourism destination, be more satisfied with it, and be more willing to recommend it to others (Meng and Han 2018; Um et al. 2006). In addition, the marketing costs for repeat tourists are much lower than for first-time tourists (Tjørve et al. 2018).

Prior studies in tourism have investigated the determinants of revisit intention. Some determinants have been identified, such as visitors' motivation (Hsu and Huang 2012; Soliman 2021), visitor satisfaction (Huang and Hsu 2009), loyalty (Kim et al. 2015), past visit experience (Huang and Hsu 2009; Lee et al. 2020), and destination image (Chen and Tsai 2007). In general, when tourists have a good experience at a travel destination, they are more likely to feel satisfied with the place and intend to visit it repeatedly (Huang and Hsu 2009; Lee et al. 2020). However, all these studies focus on visitors' intrinsic motivation, prior experience, and attitude toward the destinations. Few studies have examined the influences of technology related to the theme park, such as theme park apps. In fact, many theme parks have started to deploy theme park apps as tools to retain visitors and facilitate visitors' re-purchase behaviors. If visitors' needs can be fulfilled via using theme park apps, they might intend to revisit the theme park. However, few studies have empirically confirmed the relationship between users' continuance intention toward a theme park app and their revisit intention toward the relevant theme park. Thus, further exploration is required.

Research model and hypotheses

The proposed model

The research model is illustrated in Figure 1. Our study identifies three types of gratifications: social gratification (represented by social-related gamification), utilitarian gratification (captured by utilitarian value), and hedonic gratification (represented by entertainment). Construct adapted from prior literature are considered in our study to represent the different types of gratifications. Recent research has offered evidence that individuals use a smartphone during a theme park visit to satisfy their different needs, including social, utilitarian, and hedonic needs (Kirova and Thanh 2019). Specifically, users can use the social-related gamification features offered by a theme park app, such as inviting friends to explore the theme park together, to fulfill their social needs. In addition, they can use the app for obtaining utilitarian value, such as using the map navigation to avoid missing, utilizing the online order function to book tickets, foods, and VIP services in advance, and using the virtual queue function to save time. Moreover, they can fulfill their hedonic gratification from the entertainment by using it, such as playing mini-games, watching short videos, or winning a lottery prize. Thus, this study assumes that: (1) Social-related gamification is the social factor that can fulfill individuals' social expectations. (2) Utilitarian value can represent utilitarian. Furthermore, prior studies on tourism have indicated that travelers' revisit intention can be influenced by their attachment or engagement in online platforms, such as social media (Leung and Bai 2013) or mobile apps (Kuo et al. 2019). Thus, it is reasonable to assume that users' continuance intention of a theme park

could impact their intention to revisit the park. Finally, users' features, including age, gender, income, place of residence, and visiting length of their last visit to the theme park, are considered as moderators.



Hypotheses

Social-related gamification refers to one type of game-design element that aims to help users to achieve social-related purposes, such as interacting with others (Xi and Hamari 2019). It has been found to affect users' satisfaction with competence, autonomy, and relatedness needs in the context of online communities (Xi and Hamari 2019). The research of Rohan et al. (2021) revealed that social-related gamification positively influences users' motivation to use MOOCs, which affects users' continuance intention. In fact, within many theme park apps, the social interaction function is not initially included, as there are so many social networking alternatives (e.g., Facebook, Twitter, and WeChat). To fulfill users' social needs, some theme park apps include social-related gamification instead. For instance, the Fanta travel app has implemented social-related gamification, such as inviting friends to make travel plans and explore the based on the above reasons, we suppose that the more social-related gamification using a theme park app, the more likely they intend to sustain their use. Thus, we suggest the following hypothesis:

H1: Social-related gamification positively affects users' continuance intention of a theme park app.

Utilitarian value refers to users' evaluation of problem-solving in using a theme park app (Griffin et al. 2000; Zhou et al. 2012). Prior studies have proven the links between utilitarian outcomes and continuance intention regarding IS. For instance, studying social media, Gan and Li (2018) found that individual users are more likely to maintain their use if they believe that they can achieve their utilitarian purposes when using social media, such as sharing information. Similarly, Fang et al. (2017) confirmed that utilitarian value has a positive influence on users' intention to engage in a travel-related mobile app. In the context of theme park apps, the utilitarian value may also affect users' continuance intention since the apps offer multiple functions to satisfy users' utilitarian needs. Specifically, functions like notifications in a theme park app can enable users to get up-to-date information on inside activities and promotions. In addition, the online order function can enable users to book tickets, food, and drink in advance, helping them improve their planning before a visit and manage their arrangements and time during the visit. Moreover, functions like virtual queue and fast-pass can enable users to avoid long lines, assisting them in enhancing their efficiency and experience during the visit. Based on the above discussion, we assume that users may have a stronger intention to continue using a theme park app when they perceive a higher level of utilitarian value via a theme park app. Therefore, we propose the hypothesis:

H2: Utilitarian value positively affects users' continuance intention of a theme park app.

¹ https://apps.apple.com/us/app/%E6%96%B9%E7%89%B9%E6%97%85%E6%B8%B8/id1089447593

Entertainment refers to users' assessment of the amusement and fun of using a theme park app (Griffin et al. 2000; Tsang et al. 2004). Prior literature has empirically supported that individual users continue their use of a specific IS if they perceive it as entertaining, fun, and enjoyable, such as in the context of social virtual world (Mäntymäki and Riemer 2014), online games (Li et al. 2015), and WeChat (Gan and Li 2018). In the context of theme park apps, various features are offered to users, such as enjoying beautiful photos of theme parks, watching short videos of performances, and playing mini-games related to the parks' theme, which may bring entertainment and fun to users. Kirova and Thanh (2019) identified that hedonic use is one important type of smartphone use during a theme park visit. Thus, it is reasonable to assume that the more entertainment users perceive in using a theme park app, the more likely they are to keep using it. Therefore, we suggest the following hypothesis:

H3: Entertainment positively affects users' continuance intention of a theme park app.

In prior literature, tourists' revisit intention toward a destination can be influenced by their attachment and involvement with its online platform. For instance, Leung and Bai (2013) found that when a traveler is attached to an organizational social media page, a higher revisit intention the traveler will have. Similarly, tourists' intention to share travel-related experiences in a destination on social media will positively affect their intention to revisit the place in the future (Kumar et al. 2021). Recent research has also indicated that tourists' intention to use tourism apps positively affects their intention to visit the travel destination (Kuo et al. 2019). In our studied context, theme park apps are often used to smooth visitors' offline visits and enhance their physical experience. Such app use experience could help form a positive attitude toward theme parks and eventually exerts influence on visitors' revisit intention. In other words, users with a strong continuance intention of the theme park app may have a strong intention to visit the place in the future. Thus, we assume that the stronger the will to continue using a theme park app, the more likely users are to revisit the relevant theme park. Hence, the following hypothesis is developed:

H4: Users' continuance intention of a theme park app affects their intention to revisit the theme park.

In addition, previous studies have suggested that user characteristics, such as age, gender, place of residence, income, and visiting length of theme parks (Kirova and Thanh 2019; Yan et al. 2021), can moderate the relationships between antecedents and continuance intention. Thus, we consider these factors as moderators in our proposed research model.

Research method

Development of the measurement

The research model contains five constructs, social-related gamification, utilitarian value, entertainment, continuance intention, and revisit intention. We used previously validated multiple-item scales to measure the constructs in our proposed research model. Precisely, social-related gamification was measured by adopting items from Xi and Hamari (2019), the measurement items for utilitarian value were taken from Griffin et al. (2000) and Zhou et al. (2012), and entertainment was measured by using items from Griffin et al. (2000) and Tsang et al. (2004). Items for continuance intention and revisit intention came from Bhattacherjee (2001) and Hutchinson et al. (2009), respectively. All measurement items were reworded to fit the context of theme park apps.

Data collection

The data was collected via online surveys in China. The survey questionnaire was initiated in English as all constructs are measured by adapting prior validated scales from IS international journals. Then the author, who is a native Chinese speaker, translated the survey from English to Chinese. To validate the quality of the questionnaire, a pretest was conducted with 15 Chinese who had rich usage experience regarding theme park apps to acquire feedback. We further revised the questions and options based on their comments to make the expression clearer and more fluent. Several ambiguous sentences were removed to improve the clarity of the questionnaire. Finally, the finalized survey was distributed to the target respondents via the sample service of wix.com, which is a crowdsourcing online survey platform in China. It already has 2.6 million registered respondents in its sample services.

The survey questionnaire includes three parts: the first part is informed consent, which introduces the research aim, confidentiality of data, and researchers' contact information. Only respondents who agree and sign electronically, and report that they have used theme park apps, will be proceeded to complete the survey. The second part consists of questions regarding respondents' demographic information (e.g., age, gender, income, and place of residence) and their prior experience of visiting theme parks (e.g., the name of a theme park they have visited, and the visiting length of their last visit in the theme park). The final part aims to collect answers regarding respondents' perceptions about using theme park apps. Four attention check questions have been provided to ensure that respondents actually pay attention to all questions, such as selecting "disagree" or "agree".

We received 224 submissions. After checking each submission carefully, we found that 20 respondents offered dishonest answers. For instance, they reported that their home city has a theme park but no theme park in that city actually. Finally, we obtained 204 valid responses for data analysis. As shown in Table 1, 68.1% of respondents were women, and 31.9 % were men. Most respondents were aged from 26 to 35 (67.6%). Near half of them reported their income over 55,000 RMB every year. Additionally, 62.7% were residents of the theme park host city. Around 55% of them spent half a day to a day on their last visit to a theme park.

Measure	Items	Frequency	Percent (%)		
Age	>18 and ≤25	34	16.7		
	<mark> >26 and ≤35</mark>	138	67.6		
		- 29	14.2		
	->46 and ≤55		0.5		
	>55	2	1.0		
Gender	Male		31.9		
	Female	139	68.1		
Income (RMB)	<u>≤15,000</u>	18	8.8		
	15,001-25,000		10.3		
	25,001-35,000	- 21	10.3		
	35,001-45,000	15	7.4		
	45,001-55,000	19	9.3		
	≥ <u>55,000</u>	110	53.9		
Place of residence	Local	128	62.7		
	Non-local	76	37.3		
Visiting length of their last visit	-				
	Half-day and less	4	2.0		
	Half-day to one day	112	54.9		
	One to two days	78	38.2		
	Over two days	10	4.9		
Table 1. Demographic Information of Respondents					

Common method bias and collinearity

The common method bias was tested via Harman's single-factor test (Podsakoff et al. 2003). The results show that the highest total variance for any factor was 34.367%, lower than the recommended threshold (50%), indicating that common method bias is not a critical concern in this study (Podsakoff et al. 2003).

The collinearity was measured via the variance inflation factors (VIFs) proposed by (Kock and Lynn 2012). The results show that all VIFs values ranged from 1.232 to 2.370, below 3.3, suggesting collinearity was also not a critical issue in this study (Kock and Lynn 2012).

Data analysis

Construct

Items

The measurement model and structure model were tested by using SmartPLS 3.0. The test of measurement model includes the assessments of convergent validity and discriminant validity. To validate convergent validity, we measured factor loadings for each item, composite reliability (CR), Cronbach's alpha, and average variance extracted (AVE). We removed one item of continuance intention (COI3) because its value of factor loading was lower than 0.7. The results in Table 2 show that others' values of factor loadings were greater than 0.7. All values of Cronbach's alpha and CR were higher than 0.7 and 0.8, respectively, and the values of AVE exceeded 0.5, indicating adequate convergent validity (Hulland 1999; Tenenhaus et al. 2005).

To assess the discriminant validity, the Fornell–Larcker (Fornell and Larcker 1981) criteria, the cross loading, and the heterotrait–monotrait (HTMT) ratio of correlation (Henseler et al. 2015) were used in this study. As shown in Table 3, a construct's correlations with other constructs were all below the square root of the construct's AVE (Fornell and Larcker 1981). In Table 4, the factor loading of each construct item for the relevant construct is greater than the cross-loading on other constructs. In Table 5, all values of HTMT were smaller than 0.85 as recommended by Henseler et al. (2015). Therefore, the discriminant validity was confirmed in this study.

Factor

			Cronbach's Alpha	CR	AVE
SRG	SRG 1	0.818	0.852	0.899	0.691
	SRG 2	0.770			
	SRG 3	0.878			
	SRG 4	0.856			
ENT	ENT1	0.753	0.778	0.857	0.601
	ENT2	0.785			
	ENT3	0.821			
	ENT4	0.739			
UTV	UTV1	0.774	0.711	0.836	0.629
	UTV2	0.794			
	UTV3	0.812			
COI	COI1	0.765	0.724	0.845	0.645
	COI2	0.817			
	COI4	0.825			
REI	REI1	0.864	0.814	0.890	0.729
	REI2	0.848			
	REI3	0.849			

Table 2. The Results for Test Reliability and Convergent Validity

(Notes: SRG: Social-related gamification; ENT: Entertainment; UTV: Utilitarian value; COI: Continuance intention; REI: Revisit intention; CR: Composite reliability; AVE: Average variance extracted)

	SRG	ENT	UTV	COI	REI
SRG	0.832				
ENT	0.46	0.775			
UTV	0.305	0.629	0.793		
COI	0.23	0.578	0.51	0.803	
REI	0.3	0.387	0.295	0.447	0.854

Table 3. Discriminant Validity: Fornell-Larcker Criterion

(Notes: SRG: Social-related gamification; ENT: Entertainment; UTV: Utilitarian value; COI: Continuance intention; REI: Revisit intention)

	SRG	ENT	UTV	COI	REI
SRG 1	0.818	0.312	0.194	0.189	0.222
SRG 2	0.77	0.362	0.195	0.138	0.212
SRG 3	0.878	0.419	0.253	0.212	0.273
SRG 4	0.856	0.432	0.351	0.213	0.281
ENT1	0.402	0.753	0.399	0.43	0.249
ENT2	0.345	0.785	0.453	0.399	0.344
ENT3	0.409	0.821	0.555	0.497	0.306
ENT4	0.269	0.739	0.529	0.454	0.303
UTV1	0.265	0.43	0.774	0.309	0.316
UTV2	0.254	0.524	0.794	0.412	0.157
UTV3	0.218	0.526	0.812	0.465	0.249
COI1	0.137	0.417	0.409	0.765	0.32
COI2	0.176	0.47	0.453	0.817	0.324
COI4	0.235	0.5	0.372	0.825	0.426
REI1	0.273	0.356	0.297	0.403	0.864
REI2	0.231	0.334	0.22	0.382	0.848
REI3	0.266	0.298	0.236	0.357	0.849

Table 4. Discriminant Validity: Cross-loading

(Notes: SRG: Social-related gamification; ENT: Entertainment; UTV: Utilitarian value; COI: Continuance intention; REI: Revisit intention)

	SRG	ENT	UTV	COI	REI
SRG					
ENT	0.562				
UTV	0.389	0.828			
COI	0.283	0.762	0.694		
REI	0.356	0.486	0.396	0.577	

Table 5. Discriminant Validity: Heterotrait–Monotrait (HTMT)

(Notes: SRG: Social-related gamification; ENT: Entertainment; UTV: Utilitarian value; COI: Continuance intention; REI: Revisit intention)

The structural model was tested by using a bootstrapping technique in SmartPLS, including the path significance and variance explained. As shown in Figure 2, the research model explains 37.1% of the variance for continuance intention and 20% of the variance for revisit intention. Both utilitarian value ($\beta = 0.244$, p < 0.05) and entertainment ($\beta = 0.447$, p < 0.001) have significantly positive impacts on continuance intention. Continuance intention positively affects revisit intention ($\beta = 0.447$, p < 0.001). There is no significant relationship between Social-related gamification and continuance intention. Therefore, H2, H3, and H4 are supported, while H1 is not.



(Notes: *: p < 0.05; ***: p < 0.001; n.s.: not significant)

Post hoc analysis

To test for moderating effects of age, gender, users' residence, income, and visiting length, we used multigroup analysis (MGA) to ascertain whether the paths' strengths differ with the user group. Regarding age, since the majority of respondents were aged from 26 to 35, we classified them into two groups: (1) the young group refers to users who were aged from 26 to 35, and (2) other groups refer to users who were aged under 25 and above 36. Two groups were categorized regarding income: (1) high level refers to users whose annual income exceeded 55,000RMB, and (2) low level refers to users whose annual income was under 55,000RMB. Two groups were used regarding visiting length: (1) short visit users refer to those who spent less than one day on their last visit to a theme park, and (2) long visit users refer to those who spent more than one day on their last visit in the theme park. Two groups were identified related to the place of residence: (1) local residents refer to those who live in the city where the theme park is; (2) non-local residents refer to those who do not live in the same city where the park locates.

After assessing the measurement invariance by means of the measurement invariance of composite models (MICOM) procedure (Henseler et al. 2016). The MICOM procedure comprises a three-step approach to

evaluate (1) configural invariance, (2) compositional invariance, and (3) the equality of composite mean values and variances. The full measurement invariance will be established when all three types of invariance exist, while the partial measurement invariance will be established when both configural invariance and compositional invariance are proven (Henseler et al. 2016). Our results show that full measurement invariance was established between low-income and high-income users. Regarding age, visiting length, and users' place of residence, partial measurement invariance was confirmed. The measurement invariance was not established between male and female users. Thus, MGA was acceptable for user groups regarding income, age, visiting length, and users' place of residence between different groups regarding age, income level, users' place of residence, and visiting length of their last visit to a theme park (see Tables 6, 7, 8, and 9).

	Comparison by age Path coefficients of separate structur		
	Young vs. other	Young (N = 138)	Other (N = 66)
H1	n.s.	n.s.	n.s.
H2	n.s.	n.s.	0.412**
H3	n.s.	0.502***	0.346**
H4	n.s.	0.505***	0.309*
	Table 6. Test for A	ge as a Moderator	
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	Comparison by income	Path coefficients of separate structural models		
	High vs. low	High (N = 110) Low (N = 94)		
H1	n.s.	n.s.	n.s.	
H2	n.s.	0.313*	n.s.	
H3	n.s.	0.329**	0.506***	
H4	n.s.	0.512***	0.375***	
Table 7. Test for Income as a Moderator				

	Comparison by place of residence	Path coefficients of separate structural models		
	Local vs. non-local	Local (N = 128)	Non-local (N = 76)	
H1	n.s.	n.s.	n.s.	
H2	n.s.	0.371***	n.s.	
H3	n.s.	0.435***	0.401*	
H4	n.s.	0.445***	0.473***	
Table 8. Test for Place of Residence as a Moderator				

	Comparison by visiting length	Path coefficients of sep	Path coefficients of separate structural models		
	Short visit vs. long visit	Short visit (N = 116)	Long visit (N = 88)		
H1	n.s.	n.s.	n.s.		
H2	n.s.	n.s.	0.291*		
H3	n.s.	0.496***	0.377***		
H4	n.s.	0.375***	0.590***		
Table 9. Test for Visiting Length as a Moderator					

We also conducted a mediator analysis to ascertain whether the continuance intention mediates the relationship between gratifications and revisit intention. As shown in Table 10, there are no direct influences of utilitarian, hedonic, and social gratifications on revisit intention, but there are significant indirect effects of utilitarian value and entertainment on revisit intention via continuance intention. In other words, continuance intention fully mediates the influences of utilitarian value and entertainment on users' revisit intention.

Path	Direct effects	Indirect	
		effects	Mediation
Social-related gamification \rightarrow continuance intention \rightarrow revisit intention	n.s.	n.s.	No mediation
Utilitarian value \rightarrow continuance intention \rightarrow revisit intention	n.s.	0.081*	Full mediation
Entertainment \rightarrow continuance intention \rightarrow revisit intention	n.s.	0.154**	Full mediation

Table 10. Test for Continuance Intention as a Mediator

Discussion

Our study examines the factors that affect individuals' intention to use theme park apps in China. Our results show that utilitarian and hedonic gratifications exert significant effects on users' continuance intention of theme park apps, which, in turn, affects users' revisit intention of theme parks. Our findings raise some points of interest.

First, hedonic gratification (entertainment) is found to be a significant motivator determining users' continuance intention toward theme park apps. This is consistent with the findings regarding the social virtual world (Mäntymäki and Riemer 2014), online games (Li et al. 2015), and social media (Gan and Li 2018). In our studied context, users perceive using a theme park as entertaining, since they can select multiple choices for fun, such as pictures, music, video, and mini-games. A satisfactory level of entertainment can fulfill users' need for hedonic gratification, thus leading to a strong intention to continue their use of theme park apps. This is particularly important for app operators to notice the significance of hedonic gratification in retaining users. Many users stop using or uninstall these apps after they complete their visit to a theme park. Our finding suggests that it is possible to retain these users by fulfilling their hedonic needs, even though they have completed their visit to a theme park.

Consistent with previous findings regarding social media (Gan and Li 2018) and mobile travel apps (Fang et al. 2017), utilitarian gratification (utilitarian value) is found to have a positive influence on users' continuance intention. Theme park apps often offer users various features, such as real-time standby line information, map navigation, checking in and out, ordering tickets in advance, and lining up virtually, enabling users to satisfy their utilitarian needs. When users believe that a theme park app can enable them to do these things conveniently, they are more likely to maintain their use of the app.

Surprising, contradicting prior IS literature that has acknowledged a positive influence of social gratification on users' continuance intention in different contexts, such as online games (Li et al. 2015) and MOOCs (Rohan et al. 2021), our findings indicate no significant relationship between social gratification and continuance intention in the context of theme park apps. One possible explanation is that the impact of social gratification on continuance intention varies depending on the context and user needs. Unlike MOOCs and online games, in which the social factors are relatively important for satisfying user needs for cooperation and competition, theme park app users can use alternatives like the widely used social media platforms to fulfill their social needs, such as using Facebook or WeChat, to share their experience in a theme park app, compared to other common social media applications, users' social networks are limited since theme park apps do not include those who are not interested in theme parks and do not use saving time; thus, they are unlikely to spend too much time communicating with others via the apps during a visit. Another possible reason is that most tourists only make one trip, and it is unlikely to establish a social relationship with the same travel experience in the theme park apps.

Our finding is consistent with the finding regarding social media (Gan and Li 2018), which found that social gratification has no significant influence on continuance intention of WeChat in China. Their explanation is that Chinese users have a strong culture of collectivism and have lots of social interactions in their daily lives. Our survey respondents are also from China. They visit theme parks might because they tend to escape from their daily lives and social networks. Thus, it is unlikely for them to use social functions in theme park apps.

Finally, continuance intention is found to predict users' intention to revisit the theme park. This finding is consistent with prior studies in tourism, which found that travelers' revisit intention can be influenced by their adoption and engagement in relevant IS, such as social media (Leung and Bai 2013) and mobile apps (Kuo et al. 2019). In our studied context, the more users want to continue using the theme park app, the stronger their intention to revisit the place offline. This might be explained by the hybrid experience that users have during their visit to a theme park. Users can use these apps to satisfy their utilitarian and hedonic gratifications, which can smooth and improve their physical experience. When users feel their utilitarian and hedonic needs are fulfilled, they will also feel positive toward the hybrid experience during the visit, which may lead to a strong intention to visit the place again. Hence, a stronger intention to keep using a theme park app, the more likely a user will revisit the theme park.

Conclusion

This study offers several theoretical contributions. First, this study finds that different gratifications play different roles in retaining users of theme park apps. Specifically, hedonic gratification is the main motivator, and utilitarian gratification is the second important determinant. The findings help explain how a theme park app is a multi-purpose-oriented app. Users of a theme park app decide to continue their use of the app on the basis of hedonic and utilitarian gratifications they could achieve in using it. Second, this study finds that social gratification has no significant effect on the continuance intention of a theme park app. However, social gratification has not been found to be an important determinant that affects users' continuance intention of an IS. This inconsistency makes us cautious when examining the effects of different types of gratifications in retaining users and rethinking the role of social gratification in the specific context of theme park apps. Finally, this study reveals that users' continuance intention can predict their revisit intention. This finding advances our understanding of the relationships between online behavioral intention in hybrid settings regarding theme parks.

This study also has several practical implications. First, this study highlights the salient role of hedonic gratification in retaining users of theme park apps. Thus, the app operators could improve the services to make the usage process more entertaining and enjoyable. For instance, they could add novel interfaces and interactivity to the apps, such as theme-based pictures, audio, music, video, or even mini-games, to entertain users. They could also offer more memorable photos and videos via the apps to help users remember the great times of the day they experienced in the theme park. They could further redesign the apps as interactive experiences platforms with augmented reality content and immersive experiences where users become an integral part of the story, encouraging users to continue using the apps after leaving the park. Second, this study notes that utilitarian gratification is another important motivator of continuance

intention. Thus, the app operators could optimize the functions of the apps to eliminate pain points for users during the entire journey, such as offering virtual queues to help users save time, providing online order function to assist users in booking tickets, products, food, and drink in advance, or including GPS-based maps to help visitors find the right way. Third, this study finds that social gratification has no significant influence on users' continuance intention. Thus, the app operators or designers could pay less attention to the social features in these apps than to utilitarian and hedonic features. Fourth, this study finds that users' continuance intention of an app can motivate users to revisit the theme park. Thus, the theme park operators could recognize the value of theme park apps in retaining visitors and develop their dedicated mobile apps to maintain their relationships with their guests. Finally, the findings of moderation analysis indicate that non-youth, high-income, and local user groups pay greater intention to utilitarian gratification. These people might be local families; thus, app operators customize the app functions to improve perceived utilitarian value for these specific user groups, such as parking guides, suggested routes for families, and offering season pass benefits.

This study has some limitations. First, we only gathered data in China. Future research should consider collecting data in different countries to enhance the generalizability of our findings. Second, our study was limited to the use of three factors to represent three dimensions of gratification in the context of theme park apps. Other factors closely relevant to theme park apps, such as mobile convenience in the utilitarian dimension (Palos-Sanchez et al. 2021), curiosity fulfillment in hedonic dimension (Li et al. 2015), and social presence in social dimension (Hu et al. 2015), could be investigated in future research. Third, the online survey method we used may limit our understanding of the changes regarding users' continuance intention of theme park apps. Considering users' beliefs regarding theme park and theme park apps may be dissimilar at different stages (e.g., first theme park visitors and repeated visitors, early app users and skilled users), a longitudinal study is needed to better understand continuance intention in the specific context of theme park apps.

Acknowledgements

This study is supported by the Finnish Foundation for Economic Education (Under grant 20-11123).

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Appendix

Construct	Measurement items	References
Social-related gamification	 The frequency of interacting with team/cooperation. The frequency of interacting with social networking features. The importance of interacting with team/cooperation. The importance of interacting with social networking features. 	Xi and Hamari (2019)
Utilitarian value	 I accomplished just what I wanted to do on the theme park app. I could do what I really needed to do in the theme park app. While using the theme park app, I found just the functions I need. 	Griffin et al. (2000); Zhou et al. (2012)
Entertainment	 I feel that the theme park app is enjoyable and entertaining. To me, it is amusing to use the theme park app. I feel that it is pleasant to use the theme park app. The use of this theme park app gave me pleasure. 	Griffin et al. (2000); Tsang et al. (2004)
Continuance intention	 I intend to continue using the theme park app rather than discontinue its use. My intentions are to continue using this theme park app than use any alternative means. I will recommend others to use the theme park app. (Removed item) I could, I would like to continue my use of the theme park app. 	Bhattacherjee (2001)
Revisit intention	 I intend to revisit the theme park again. It is very likely that I will revisit the theme park in the future. The likelihood of my return to the theme park for another travel is high. 	Hutchinson et al. (2009)