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Continuance Intention of Theme Park Apps: An Extended Expectation Confirmation Theory Perspective

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Abstract: The theme park apps have been used as an important platform for theme park visitors to engage with the theme park. The purpose of this paper is to investigate what motivates users to continue using theme park apps. By combining the expectation confirmation theory, IS success model, and perceived value, this study proposes a research model to examine the determinants of continuance intention. Specifically, information quality, system quality, and service quality are proposed to positively affect the users’ confirmation of theme park apps, while confirmation exerts positive influences on users’ revised perceptions regarding utilitarian and hedonic value. Confirmation, together with utilitarian value and hedonic value of theme park apps, impact both user satisfaction and continuance intention directly. Additionally, travel frequency and prior app usage experience are considered as moderators in this research model to investigate user differences in continuance intention regarding theme park apps. This study may contribute to a comprehensive understanding of the significant antecedents to theme park apps’ continuance intention.

Keywords: Continuance intention, Confirmation, Theme park apps quality, Utilitarian value, Hedonic value

1. INTRODUCTION

Recently, theme park applications (apps), such as My Disney Experience and LEGOLAND, have demonstrated their increasing impacts on the theme park industry. Theme park apps are mobile apps that are specifically targeted at theme park visitors. These apps are able to assist visitors at different stages of visiting experience, including pre-, in-, and post-visiting stages\textsuperscript{[1, 2]}. Specifically, by using theme park apps, people can obtain official information, plan their visit, and buy tickets before the visit. During the visit, people can organize itineraries efficiently with real-time information services on the apps, such as avoiding getting lost, ordering food, and queuing virtually. After their visit, people can share their experience with others on the apps, and continue their relationship with theme parks, such as obtaining timely promotions and personalized offers. For organizations, theme park operators can use the “big data” generated on apps to understand their customers better, which could improve their management capability, enhance their relationships with customers, and increase revenues\textsuperscript{[1]}. Although theme park apps have the potential to benefit both theme park visitors and operators, they are still facing challenges in retaining users\textsuperscript{[2]}. Most visitors are unlikely to continue their use of the app when completing a visit to a theme park. Though prior literature states that the continuance intention is critical for the long-term success of an Information System (IS)\textsuperscript{[3]}, few studies have explored the continuance intention of theme park apps. In order to explore the full potential of theme park apps as a bridge between visitors and theme park operators and achieve the sustainable development of such apps, this study seeks to investigate what determines users’ continuance intention in the specific context of theme park apps.

Prior research on travel technologies has paid a great amount of attention to the adoption of information systems regarding tourism. For instance, in the work of No and Kim\textsuperscript{[4]}, usefulness, ease of use, social influence, and satisfaction with travel websites were found to affect users’ intention to adopt information on smartphones for travel decision-making. Lu et al.\textsuperscript{[5]} discovered that perceived usefulness, perceived ease of use, and

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compatibility are important determinants of the intention to use travel apps. Perez-Aranda et al. [6] found that attitudinal factors, such as performance expectancy, effort expectancy, perceived satisfaction, perceived enjoyment and perceived gamification as well as subjective norms are important antecedents of sport-based applications use in the context of tourism. Although these studies have offered important insights into this study, several issues require further research. First, these studies have largely ignored the specific context of theme park apps. Unlike general travel apps (e.g., TripAdvisor), which can be used for different destinations, a theme park app is a dedicated app intentionally designed for or operated by a particular theme park. This makes the app works as a branded app that can be used for building and maintaining brand relationships between theme park operators and customers directly. Information and services offered by such apps may not only enhance individuals’ visiting experience, but also promote the brand image of a theme park (e.g., offering loyalty points). Given these unique features, one can assume that determinants of continuance intention of theme park apps may vary from other travel apps.

Second, previous studies on travel technologies have so far emphasized adoption, but with little focus on continuance intention [7-9]. Unlike adoption that focuses on the first-time use, continuance intention focuses on the maintenance of use over a long period after the initial use [3]. Users’ continuance intention toward an IS has been found to be determined primarily by their confirmation, perceived usefulness, and satisfaction with prior use [3], yet prior research has not investigated whether these factors retain their roles in predicting continuance intention in the specific context of theme park apps.

Third, previous studies on IS continuance have demonstrated factors that influence users’ continuance intention from a utilitarian focus, while less attention to the hedonic element [10, 11]. Theme park apps must not only fulfill visitors’ intended utilitarian function (e.g., the tour guide at theme parks) but also deliver a hedonically charged experience (e.g., onsite photography) [11]. Therefore, further investigation is required to explain the effects of utilitarian and hedonic value on users’ continuance intention of theme park apps.

To address the above research gaps, this study purposes to investigate user continuance intention of theme park apps. Drawing upon expectation confirmation theory (ECT), IS success model, and perceived value, this study proposes a research model that posits: (1) Users’ confirmation of expectation is influenced by information quality, system quality, and service quality. (2) Confirmation affects users’ perception of utilitarian and hedonic value. (3) Users’ satisfaction with theme park apps is determined by confirmation, utilitarian value, and hedonic value jointly. (4) Users’ continuance intention is affected by utilitarian value, hedonic value, and user satisfaction.

The rest of the paper is structured as follows. In Section 2, prior literature on expectation confirmation theory, IS success model, and perceived value are reviewed. Then, the research model and hypotheses are proposed in Section 3. The methodology and data collection plan are introduced in Section 4. Finally, expected results and potential contributions are discussed in Section 5.

2. LITERATURE REVIEW AND THEORETICAL MODEL

2.1 Expectation confirmation theory

Expectation confirmation theory was first developed by Oliver [12] in marketing literature to investigate customer satisfaction and repurchase intention. In the IS field, Bhattacharjee [3] alleged that users’ post-adoption expectation is more credible as it is based on actual IS usage, and he combined the ECT with perceived usefulness to develop the post-acceptance model of IS continuance. In this model, users’ degree of confirmation, together with users’ perceived usefulness after the actual use of an IS, positively affect users’ satisfaction. User satisfaction, in turn, determines users’ continuance intention [3].

The ECT has been empirically validated in different research contexts, such as online travel services [13],
smart fitness wearables [14], ride-hailing applications [15], and mobile branded apps [16]. Some studies have recently extended the ECT to deeply understand IS users’ satisfaction or post-adoption toward mobile apps. Hsu and Lin [17] extended the ECT by integrating perceived value into performance value, value-for-money, emotional value, and social value to explore the users’ intention to purchase paid apps. Also, they added app rating, free alternatives to paid apps, and habit as other antecedents which impact the intention to purchase paid apps. Tam et al. [18] found satisfaction, habit, performance expectancy, and effort expectancy are the most important drivers of continuance intention of mobile apps. Choi et al. [2] emphasized functional value (perceived functional benefits, ease of use, and financial benefits), hedonic value (perceived enjoyment), trust, and satisfaction are the factors that lead to continued use intention for travel apps. The widespread use of the ECT to explore the post-adoption behavior in mobile app context makes it reasonable to use ECT as the theoretical framework to explore the continuance usage intention of theme park apps in this research.

2.2 IS success model

IS success model was first proposed by DeLone and McLean [19] to describe the information systems success measures. It posits that information quality and system quality are the key antecedents of user satisfaction, which in turn, has a positive influence on system usage [19]. Later, DeLone and McLean [20] updated the model by including service quality. Since then, information quality, system quality, and service quality have been widely used to explore user adoption of IS in different contexts. For instance, Lin et al. [21] discovered that information quality, system quality, service quality are key determinants of people’s perceived switching value and satisfaction with the mobile platform. In the work of Wang et al. [22] regarding mobile catering apps, the perceived value was found to be determined by information quality, system quality, and service quality, while user satisfaction is influenced only by systems quality. Additionally, Ali et al. [23] revealed that user engagement with smartphone travel apps is significantly impacted by system quality, information quality, and service quality positively. All of these studies confirm that three factors, including information quality, system quality, and service quality, are important in influencing users’ perceptions and behavioral intention. Hence, this study uses these three factors to explore the important driving forces of users’ perceptions regarding theme park apps.

2.3 Perceived value

Perceived value has been acknowledged in marketing literature as an important predictor of customers’ repeat purchase intention [24]. According to Woodruff [25], perceived value refers to “a customer’s perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer’s goals and purposes in use situations.” Specifically, perceived value can be considered as a trade-off between perceived benefits and perceived costs. If a user believes the benefits exceed the costs, the perceived value of a product or service will increase. Perceived value has been found to produce a number of positive outcomes in different contexts, such as a high level of engagement in retail shopping [26], increased intention to use IS [27], and high levels of purchase intention for paid mobile apps [17].

In prior literature, perceived value is treated as a multi-dimensional construct in marketing literature [28]. Ledden et al. [29] summarized the perceived value from five dimensions: functional value, social value, epistemic value, emotional value, and conditional value from the context of education. In the IS field, the two widely used sub-value are utilitarian value and hedonic value [30]. Utilitarian value refers to users’ cognitive evaluation of the utility of using an IS regarding problem-solving or task completion [31]. Hedonic value refers to users’ positive emotions or feelings derived from the appreciation of user experience [31]. In this study, theme park app users can derive these two types of perceived value. They can use theme park apps not only for problem-solving, such as purchasing theme park tickets and advancing dining reservations, but also for entertainment and leisure, such as taking photos and videos. Therefore, this study explores the roles of both utilitarian and hedonic value in
affecting users’ satisfaction and continuance intention.

3. THE RESEARCH MODEL AND HYPOTHESES

3.1 The proposed model

In this study, the expectation confirmation model is the basis for measuring the users’ confirmation, satisfaction, and continuance intention of theme park apps. With the additional utilitarian and hedonic value as predictors in this model, it will provide a detailed understanding of the continuance usage intention of theme park apps. Following the literature on continuance attention, we propose to incorporate the information quality, system quality, and service quality as antecedents of confirmation. Therefore, the combined expectation confirmation model and IS success model constitute the main framework for understanding the continuance intention of theme park apps. The travel frequency and prior app usage experience of theme park app users will be considered as moderators in this proposed model. The model is shown in Figure 1.

3.2 The Hypotheses Development

According to the IS success model [20], information quality, system quality, and service quality are three key factors that influence users’ information system use behavior. Information quality is the degree to which users consider the obtained information is personalized, complete, relevant, and easy to understand. System quality is the degree to which the IT services/products provide systems to their users with usability, availability, reliability, friendly, and stability. Service quality is the degree to which the overall support which delivered by the service provider. According to the ECT, confirmation is defined as users’ perception of benefits they have gained from their actual usage experience compared with their initial expectation of the IT services/products [3]. Previous research has examined the relationship between the quality of IT services/products and confirmation. For instance, Zhao et al. [32] found that IS success variables (system quality, information quality, and service quality) exert a positive effect on users’ confirmation within the context of mobile library apps. Liu et al. [33] posited that information quality, system quality, and service quality are positively related to users’ confirmation with the travel apps. Likewise, users’ perceptions of information, system, and service quality will likely confirm (or disconfirm) expectations of theme park apps. Users who find the theme park apps to be high quality with information, system, and service are likely to confirm expectations of the app. Therefore, we posit the following hypotheses:

H1: The theme park app’s information quality is positively related to a user’s confirmation.

H2: The theme park app’s system quality is positively related to a user’s confirmation.

H3: The theme park app’s service quality is positively related to a user’s confirmation.

Utilitarian value refers to the users’ evaluation of the extent to which the IT services/products are able to offer services in terms of purpose fulfillment and problem-solving [31]. Hedonic value refers to the users’ evaluation of the extent to which the IT services/products are able to offer services that create positive emotions.
or feelings. Previous research found the relationship between confirmation and utilitarian value, such as perceived usefulness. In other words, after using a system, expectations of the system are confirmed or disconfirmed, and lead to revised and updated perceptions of usefulness regarding the system. Recent studies also suggested that confirmation is also linked to hedonic value, such as perceived enjoyment. In the context of tourism, Kim et al. found that users’ confirmation could exert a positive influence on both utilitarian and hedonic value of travel-related social media usage. Similarly, in the context of theme park apps, when users’ expectations are confirmed, their perceptions regarding utilitarian value (e.g., solving problems) and hedonic value (e.g., achieving fun and pleasure), could be enhanced. Thus, we propose the following hypotheses:

**H4**: A user’s confirmation with the theme park app is positively related to their utilitarian value with the app.

**H5**: A user’s confirmation with the theme park app is positively related to their hedonic value with the app.

The positive relationship between confirmation and satisfaction has been confirmed in various contexts. In the context of theme park apps, when individual users initially engage with an app, they are likely to have expectations about using it. Over time, after using the app, those initial expectations will be confirmed or disconfirmed. If the app does not meet users’ original expectations, users are unlikely to feel satisfied with it. In contrast, if users’ expectations are confirmed, they tend to be satisfied with it. Additionally, users’ revised and updated perceptions regarding the app, such as utilitarian and hedonic value, could also influence users’ satisfaction with it. When users believe that the use of the app can help them solve problems in the theme park (e.g., queuing virtually or finding ways), and can make them feel enjoyable (e.g., taking photos), they are like to be satisfied with it. The positive impacts of utilitarian and hedonic value on user satisfaction have been reported in prior studies, such as mobile social apps, travel social media, and smart wearable devices. Based on the above discussion, it is reasonable to assume that the utilitarian value and hedonic value can also determine users’ satisfaction with theme park apps. Hence, we propose the following hypotheses:

**H6**: A user’s confirmation with the theme park app is positively related to their satisfaction with the app.

**H7**: A user’s utilitarian value with the theme park app is positively related to their satisfaction with the app.

**H8**: A user’s hedonic value with the theme park app is positively related to their satisfaction with the app.

The extant literature has found that utilitarian value and hedonic value have direct influences on users’ behavioral intention. For instance, Fauzi and Sheng discovered that users’ perceived utilitarian value and perceived hedonic value strongly affect the continuance intention of the ride-hailing apps. Similarly, in our research context, when users perceive that the app usage could fulfill their utilitarian and hedonic needs, they tend to continue their use of the app. Additionally, users’ satisfaction has been reported to be a crucial determinant of users’ continuance intention. In the context of tourism, Liu et al. found that satisfied users are more likely to sustain their use of travel applications. Likewise, when users feel satisfied with a theme park app, they tend to continue using it. Therefore, we propose the following hypothesis:

**H9**: A user’s utilitarian value with the theme park app is positively related to their continuance intention.

**H10**: A user’s hedonic value with the theme park app is positively related to their continuance intention.

**H11**: A user’s satisfaction with the theme park app is positively related to their continuance intention.

Finally, considering the potential influences of user characteristics, such as frequency of travel and prior app usage experience, as moderators, have been suggested for examining users’ behavioral intention toward travel technologies. Thus, we propose that these two factors as moderators in this study.
4. METHODOLOGY

4.1 Sample and Data-collection Procedures

This study will use the online survey method for data collection. Data will be gathered with the support of the online survey platform of wjx.cn, which is a leading survey service provider in China. The respondents should have installed theme park apps and used them when visiting theme parks. To ensure this, the following strategy will be implemented: the screening questions are used to record respondents’ prior use of theme park apps, such as “Have you installed a theme park app on your smartphone?” and “What is the theme park app you are using?”.

The questionnaire consists of three parts. First, informed consent will be given to the participants in explaining the purpose of this research and the detailed descriptions of the survey procedures. If the participant agrees to start the survey, they could proceed to the next part of the questionnaire. If the participant disagrees, the questionnaire will be ended. Second, the participants should report their demographic background and previous travel experience. Finally, as most of the theme parks have their own apps, the participants will be asked to recall the theme park app that they have used most frequently. Then, they will be requested to evaluate the extent to which the initial perceptions of the theme park app quality, post-adoption utilitarian value, hedonic value of the theme park app, and their perceptions of confirmation, satisfaction, and continuance intention. The collected data will be analyzed by Structural Equation Modelling (SEM) to test the proposed research model.

4.2 Development of Survey Measures

All the items for measurement of the constructs in the research model are adopted from validated instruments used in previous literature. Measures for the theme park app’s information quality, system quality, and service quality are adapted from DeLone and McLean [20]. Measures for utilitarian value and hedonic value are adapted from Zhou et al. [31]. Finally, the items for measuring confirmation, satisfaction, and continuance intention are adapted from Bhattacherjee [3]. Considering the research context, some items will be reworded to fit the theme park app context. A seven-point Likert scale, ranging from strongly disagree to strongly agree, will be used to measure all items in this research.

5. EXPECTED RESULTS

This study may have some theoretical and practical implications. Firstly, this study may advance research on IS continuance by examining how app quality, users’ confirmation, satisfaction, and perceived value affect users’ continuance intention towards theme park apps jointly. Secondly, this study may contribute to confirmation literature by employing IS success model to unpack the antecedents to confirmation in the context of theme park apps. The quality of information, system, and service could be potential determinants of confirmation. This might extend our understanding of how the quality of apps affects users’ confirmation. Third, this study might extend our understanding of the multi-dimension of perceived value by examining the effects of utilitarian value and hedonic value on users’ satisfaction and continuance intention. The role of two dimensions of perceived value might vary in predicting satisfaction and continuance intention due to the context of theme park apps. Fourthly, this study will take the travel frequency and prior app usage experience as moderators to explore the influences of individual users’ features. This may deepen the understanding of individual differences in the theme park apps. Finally, this study may also provide practical implications for managing theme park apps and strengthening the relationship between theme park visitors and theme parks.

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