

A study of user's intention to purchase paid mobile apps

Research-in-Progress

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Abstract

While many reports indicate that the mobile application (app) market will be huge, little is known about why users have an intention to purchase paid apps. This study proposes a behavioral model by amending expectation confirmation model and incorporating app rating, free alternatives to paid apps and habit as belief-related constructs to predict users' behavior. Data will be collected via online survey. We believe the results may provide further insights into app marketing strategies.

Keywords

mobile app, expectation confirmation model, continuance.

Introduction

With the increasing number of smartphone subscribers, usage of mobile application software for mobile devices, also called apps, has increased in recent years. Recent statistics indicate that the global mobile app market is expected to reach US\$25 billion by 2015 (Marketsandmarkets, 2010). In-Stat (2011) also projects 48 billion mobile application downloads by 2015. Though the explosive growth of mobile application downloads continues, most of downloads are free apps. According to Gartner (2012), free apps account for 89 percent of total downloads worldwide in 2012. This reflects that apps market of paid-for downloads is still in its infancy.

To increase the sale of paid app has become an important issue for app providers. Therefore, it is imperative to understand what factors contribute to user intention to purchase paid app. In general, users usually use trial version of apps or various free apps to understand its contents before purchasing a specific paid app. Therefore, users have the initial experience of app usage while they make purchase decisions. In recent years, understanding the post-acceptance of IS continuance has been important to both practitioners and researchers. Bhattacharjee (2001) defined IS users' continuance as continued usage of IS by adopters, where a continuance decision follows an initial acceptance decision. He modifies expectation-confirmation theory (ECT) to propose the expectation-confirmation model (ECM) to explain which factors will influence the IS continuance intention. Moreover, the study empirically verified the ECM using a survey of online banking users. The results illustrated that users' continuance intention was decided by their satisfaction with IS usage and their perceived usefulness of continued IS usage. In addition, the new construct, confirmation plays a critical role in influencing perceived usefulness and satisfaction. Lee and Kwon (2011) indicated that Bhattacharjee's study is a landmark in that it brought consideration to the differences between the behavior of a user accepting an IS and the behavior of trying to continue using it. In the mobile apps context, users usually download the trial (free) version of apps to try it out. If they are satisfy with the trials, they, then, consider making purchases of the additional functions. This try-first and purchase-later behavior is similar to the behaviors studied by ECM. Therefore, this study will adopt ECM to explore users purchase paid apps behavior.

In many cases, the basic use of apps is free, and premium services are provided for a fixed monthly subscription fee. Moreover, many apps are free since providers adopt another business model such as advertisements, in-app purchases as well as additional functionality or value-added content fee. For example, users can pay to eliminate the advertisements or possibly get some additional functionality besides directly purchase paid apps. This is a typical digital business strategy for content providers in the digital age (Singer and Zalmanson, 2013). Therefore, this study broadly defined intention to purchase paid apps as the user would like to purchase paid apps, pay to eliminate ads, implement in-app purchases or pay to get more additional functionality and contents following an initial acceptance decision.

The purpose of this study will be to modify and extend ECM to examine apps users' intention to purchase. Owing to multi-purposes of using apps such as work, entertainment and social connection, etc., perceived usefulness in an ECM, an extrinsic motivation, may not comprehensively reflect the motivation of the apps purchase behavior. Therefore, we assumed a broader view of perceived value that included not only performance but also emotional, social, and value-for-money. Specifically, we also propose that additional variables, such as app ratings, free alternatives to paid apps and habit, will enhance our understanding of continuance behavior.

Related Literature

Expectation confirmation model (ECM)

ECM has received considerable attention of IS researchers in the post-acceptance behavior over the past decades. It is an adaptation of Expectation-Confirmation Theory (ECT). According to ECT, expectations and perceived performance lead to post-purchase satisfaction and then influence repurchase intention. This effect is mediated through positive or negative disconfirmation between expectations and performance (Oliver, 1980). Bhattacharjee (2001) further adapted the causal chain to predict user post-acceptance (continued use) of IT. Previous research has demonstrated the validity of ECM across a wide range of IT (Lin et al., 2005; Vatanasombut et al., 2008; Chen, 2008; Lin, 2012; Stone and Baker-Eveleth, 2013).

ECM attempts to predict and explain continued use IT/IS by positing the perceived usefulness and confirmation are two primary determinants of IS continuance intention. The former is defined as "the degree to which a users' perception of the expected benefits of IS use" and the latter is defined as "the degree to which a users' perception of the congruence between expectation of IS use and its actual performance." Both perceived usefulness and confirmation influence the individual's satisfaction. Satisfaction is defined as "the degree to which a user's affect with (feelings about) prior IS use." Satisfaction and perceived usefulness, in turn, predict the individual's IS continuance intention. IS continuance intention is defined as 'the degree to which a users' intention to continue using IS.' Additionally, confirmation will also influence perceived usefulness.

ECM has been revised to incorporate additional variables with specific contexts. Thong et al (2006) proposed a new variable ('perceived enjoyment') for studying mobile internet service continuance intention. Extending perceived enjoyment into the ECM model enabled better explanation of mobile internet service continuance behavior. Similarly, numerous extended variables with specific contexts have been added to ECM, such as perceived playfulness in using the web portal (Lin et al. 2005), user loyalty and perceived incentive in e-commerce usage (Atcharyachanvanich et al., 2006), prior behavior and habit in internet-based learning (Limayem and Cheung, 2008), and intimacy and familiarity in a web service (Lee and Kwon, 2011). These studies with extended beliefs were proposed to improve understanding of user continuance usage behavior for specific contexts.

Perceived value

Perceived value has been described as 'consumer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given' (Zeithaml, 1988). Specifically, perceived value can be regarded as a trade-off between perceived benefits and perceived costs (Lovelock, 2001). For a specific product or service, perceived value increases when users believe it to be more beneficial compared to its expenditure. In many instances, perceived value has been linked to a number of positive outcomes, such as more satisfaction and loyalty (Minna, 2005; Lee et al., 2007; Ledden et al., 2007), a high degree of

behavioral intention to use IT/IS (Lin and Wang, 2006; Turel et al., 2007) and purchase intention (Chang and Tseng, 2013).

Perceived value is treated as a multi-dimensional construct that include performance/quality, emotional, value-for-money, and social value (Sweeney and Soutar, 2001). Past research has demonstrated the validity of four sub-values of consumer perceived value (Sanchez et al., 2009; Turel et al., 2007; Walsh et al., 2013). Functional/quality value is the utility derived from the perceived quality and expected performance of using the product. Emotional value is the utility derived from the feelings or affective states generated by the product. Value-for-money is the utility derived from the product due to the reduction of its perceived short term and longer term costs. Social value is the utility derived from the product's ability to enhance social self-concept. In this study, we believe the apps users can have four types of perceived value since they usually download and use various types of apps such as task-oriented apps, leisure-oriented apps, social media-related apps, and transaction related apps. Therefore, we define perceived value as the consumers' overall assessment of the four types of utility of an app based on perceptions of what is received and what is given.

In the original ECM, IT/IS usage derived from the perceived usefulness, a form of extrinsic motivation, emphasizes performing a behavior to achieve specific goals/benefits/rewards. In subsequent work, however, many studies empirically verified that extended variables had a significant effect on IT/SI continuance intention. Current work considers the purpose of using apps is for many reasons, not just to achieve specific goals nor improve performance as well as obtain benefit. Therefore, this study replaces perceived usefulness with perceived value and proposes the importance of apps use in smartphone app usage context since perceived value is considered to be key determinant of user satisfaction and loyalty.

Extended ECM variables

This study proposes three variables such as app rating, free alternatives to paid apps and habit as extended ECM variable and empirically tests its influences on continuance intention. The reasons are as follows. First, because the online transaction environment is highly uncertain, consumers need reliable and useful information to better understand products and subsequently support their purchase decisions (Hsu et al., 2013). In emerging markets, user review plays an increasingly important role in users' purchase decision (Chen and Xie, 2008). Moreover, empirical studies addressed that the strong positive online rating can positively influence the growth of product sales (Basuroy et al. 2003; Clemons et al., 2006; Bin et al., 2012). Therefore, this study believes that a positive rating of apps will impact user's intention to purchase paid apps since user online review influences online shopping behavior (Doh and Hwang, 2009; Yoo et al., 2013). Second, app providers usually provide trial version of apps for users to experience. Therefore, users usually have a number of free apps or trial apps to choose in app marketplace. Hence, we propose free alternatives to paid apps as a possible substitute and may be another influential factor to impact continuance intention to purchase paid apps. Finally, Venkatesh et al. (2012) proposed the unified theory of acceptance and use of technology 2 (UTAUT2) model and indicated that habit has been shown to have a direct effect on technology use. In mobile commerce contexts, Lin and Wang (2006) had empirically verified that habit had a significant effect on user loyalty. Therefore, this study also plans to test its effect on continuance intention to purchase paid apps.

Research Model

Figure 1 illustrates the research model, which was built based on modified ECM. It asserts that user intention to purchase paid apps is determined by perceived value (performance, value-for-money, emotional and social), satisfaction, app rating, free alternative to paid apps and habit. Further, satisfaction mediated the impact of perceived value and confirmation.

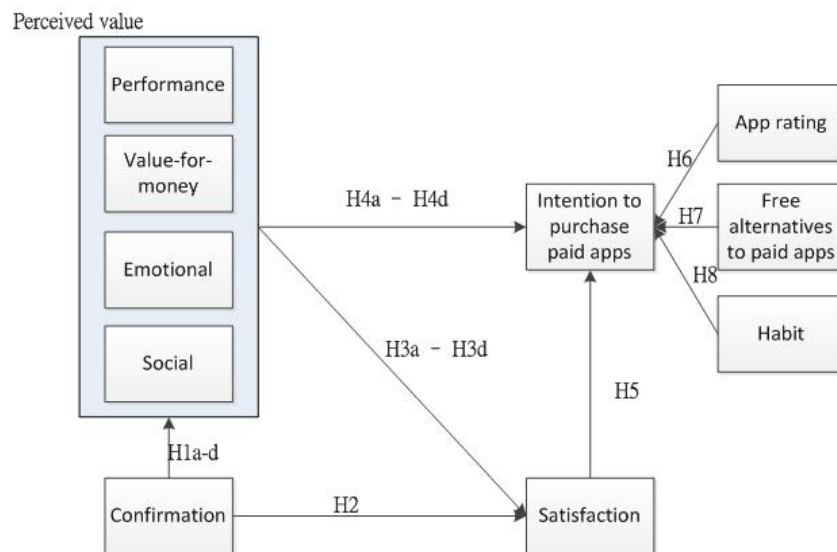


Fig. 1 Research Model

Past studies have verified that the user satisfaction and behavioral intention were influenced by perceived value (Brady et al., 1999; Cronin et al., 2000; Yang and Peterson, 2004; Li et al., 2012). Moreover, because ECM is used as the baseline model, the following ECM hypothesized relationships are also verified in the context of paid apps.

Hypothesis 1a: Confirmation will positively affect user's performance/quality value.

Hypothesis 1b: Confirmation will positively affect user's value-for-money value.

Hypothesis 1c: Confirmation will positively affect user's emotional value.

Hypothesis 1d: Confirmation will positively affect user's social value.

Hypothesis 2: Confirmation will positively affect user's satisfaction.

Hypothesis 3a: Performance/quality value will positively affect user's confirmation

Hypothesis 3b: Value-for-money value will positively affect user's confirmation

Hypothesis 3c: Emotional value will positively affect user's confirmation.

Hypothesis 3d: Social value will positively affect user's confirmation.

Hypothesis 4a: Performance/quality value will positively affect user's intention to purchase.

Hypothesis 4b: Value-for-money value will positively affect user's intention to purchase.

Hypothesis 4c: Emotional value will positively affect user's intention to purchase.

Hypothesis 4d: Social value will positively affect user's intention to purchase.

Hypothesis 5: *Satisfaction will positively affect user's intention to purchase.*

To reduce risk and uncertainty in buying, consumers usually depend on opinions or suggestions from others to evaluate purchases (Brown and Reingen, 1987; Kotler, 1999). Past research identified a positive relationship between positive user review and behavioral intention to purchase (Clemons et al., 2006; Xue and Zhou, 2010). Specifically, a product rating is usually regarded as the one of the useful features of user review in enhancing purchasing behavior (Kim et al., 2006). Accordingly, we hypothesize:

Hypothesis 6: Positive app rating will positively affect user's intention to purchase.

Users usually choose free apps while they have acceptable free apps or free alternatives to paid apps. According to Porter's five forces analysis (1980), threat of substitute product impacts competition within an industry. Empirically, many studies had confirmed that alternatives will impact user behavior. For

instance, Campo et al. (2000) show that the availability of acceptable alternatives is negatively related to store switching and positively related to brand switching. The number of alternative stores in the vicinity of the store has a positive effect on store switching (Sloot et al., 2005). Therefore, we infer that the availability of free app will influence the users' intention to purchase paid apps. Accordingly,

Hypothesis 7: Free alternatives to paid apps will negatively affect user's intention to purchase.

When users have prior experiences in IT/IS usage, they usually form a habit and then shapes the continuation of the same type of behavior. Empirically, Gefen (2003) indicated that habit alone can explain a large proportion of the variance of continued use of a website. Moreover, Lin and Wang (2006) had verified that habit had a significant effect on loyalty in mobile commerce contexts. Limayem et al. (2007) have integrated habit into expectation-confirmation theory and addressed that habit having a direct effect on IS continuance usage. Therefore, the user has habitually used apps in the past will impact the user's intention to purchase paid apps. Accordingly,

Hypothesis 8: Habit will positively affect user's intention to purchase.

Methodology and Expected Results

The current study plans to employ an online survey to examine the research model and test the proposed hypotheses. Measurements of all constructs (except for app rating and free alternatives to paid apps) are based from prior studies with slight modifications to fit the context by using five-point Likert scales, ranging from "strongly disagree" (1) to "strongly agree" (5). To develop scales for measuring constructs such as perceived value (i.e., performance value, value-for-money, emotional value and social value), confirmation, satisfaction and intention, we plan to use measures adapted from past research (Bhattacharjee, 2001; Turel et al. 2007), with modifications to suit the context of mobile apps. The scale items for app ratings and free alternatives to paid apps will be self-developed. Furthermore, to develop a scale to measure habit, we will adapt materials from Lin and Wang (2006) and modify them to fit the context of mobile apps. This study amends and extends ECM to help in understanding the factors contributing to the behavioral intention to purchase paid apps. The results may provide valuable insights in developing marketing strategies for mobile apps.

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