The Intention to Use the APPs of Smartphone: An Integration of Individual Differences and Browsing Experiences Perspective

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Abstract

It is critical for developers to learn how to keep mobile APPlication users using that APPlication. On the other hand, in this age of the experience economy, consumers focus on experience interactions or subjective perceptions from experiences. Previous studies write little of the influences of individual differences and experience factors on continued use of a mobile APPlication. Thus, this study includes individual differences and experience-related factors to examine the determinants of a specific consumer behavior: continued use of APPlications. This study examined a sample of 170 valid questionnaires, after excluding 33 invalid responses to evaluate this research model. The results show that individual difference factors including mobile self-efficacy, innovative personality, following public opinion, and platform service quality factors including interface design and aesthetics influenced consumers' browsing experiences. Of these, consumers' browsing experiences is the key factor influencing consumers' adherence to the APPlication and public praise for the APPlication.

Keywords: APP usage behavior, Browsing experience, Individual differences, Word-of-mouth

1 Introduction

The number of smartphone mobile APPlications software (APPs) has grown tremendously since the inception of APP markets. For example, the number of available APPs in the APPle APP Store from July 2008 to June 2015 increased 6.67 times [1]. These mobile APPs can increase a smartphone's practicability and provide users with more relevant and attractive features. Therefore, an increasing number of people are beginning to download various APPs onto their phones to make their lives more convenient.

Of course, the market is aware of this characteristic, so mobile APPlication developers usually offer trial versions so that people may purchase the full APPs thereafter if they find them useful. Developers can also continue to profit by observing users' follow-up behaviors. Companies may develop different APPs producing very different user behaviors of continued use after users actually experienced using them. However, continued use of an APP makes a big difference in the developer's final profits.

Some studies explore consumer behavioral intentions to use mobile APPs. For example, Wang et al. examined the determinants of APP users' behavioral intentions based on the theory of consumption value and explored the roles of these values in the mobile APPs context [2]. Ho et al. investigated consumers' use attitude and repurchase intentions for APP services like APPle's APP Stores based on the Technology Acceptance Model via perceived usefulness, perceived ease of use, and perceived price on customer recognition, as well as perceived playfulness on emotions for APP services [3]. In addition, Kang et al. examined whether the characteristics of mobile location-based service (LBS) retail APPs-time convenience, interactivity, compatibility, and effort expectancy were related to consumers' affective and cognitive involvement, and found a relationship between these and intention to download and use mobile LBS retail APPs [4].

Although some papers discuss users' usage intention for mobile APPs, most focus on users' perception of the platform. Many previous studies discussed continued use of information systems, both traditional client-server information systems and web-based 3-tier information systems. Yet none addressed the user behavior of continued use. Since APPlications are software programs for individuals, personalization is a very important factor in continued use. For a developer to successful promote an APPlication for long-term use and make a profit, it has to offer APPropriate help

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services for users and target the right market. On the other hand, public praise for an APPlication by those who have used it can also make a huge difference in the developer's profits. Thus, exploring the influences of user stickiness and public praise for a mobile APP by users with experience using the APP on the e-commerce marketing strategies for the APP is crucial. Many studies into experiential marketing take the perspective consumers' direct experiences [5-9], while others explored the relationship between direct and indirect experiences of information technology [10]. However, there is an obvious gap in terms of the relationship between users' individual differences and their continued use behaviors toward an APP after having a browsing experience of that APP.

The experiential economy is a product of individualization and mobile commerce as future marketing trends and the service industry's focus on customers' perceptions. Pine and Gilmore [11] and Schmitt [12] indicated three marketing trends for the future: (1) the popularization of information technology, (2) brand recognition, and (3) the integration of communication and entertainment. Most enterprises currently promote consumer experiences as the basis of economic activities. It is the same for mobile commerce. An APP's competitive advantages lie in economic activities based on consumers' experiences. From experience perspective, consumers' perceived value focuses on subjective opinions based on experiential interactions or experiences themselves.

Taken together, we can then understand that mobile commerce enterprises must explore consumers' perceived values resulting from their experiences from a more comprehensive angle. If an enterprise can offer significant added value in terms of consumers' psychological aspects, it can definitely build a strong competitive niche in the experiential economy. This study proposes a comprehensive research model to address how the perception of user's individual differences and platform service quality related to users' browsing experiences, and these relationships to users' sickness and word of mouth (WOM) related to mobile APPs.

The remainder of this paper is organized as follows. Section 2 describes the theoretical background for this study's model. Section 3 presents the research model and develops hypotheses and Section 4 describes the data analysis. Section 5 summarizes and discusses the findings and Section 6 covers conclusions and suggestions.

2 Literature review

2.1 Experiential Theory

"Experience" is not merely a certain kind of rational or emotional APPeal. It intends to create an overall sense about what it feels like being a consumer. In the past two decades, marketing and consumer researchers have become aware of the importance of consumer pleasure (hedonic consumption) and consumer experience. Schmitt argued that consumer experience can be shaped, and marketers should look beyond product characteristics, the endless features, and competitive brands. He emphasizes that the core of experiential marketing is to create a different experience form for the customer. Customer experience can be described in five forms, namely sense, feel, think, act, and relate. McLuhan [13] proposed that no two people will have exactly the same experience because experience is the interaction between the mind and individual events. Experience is not just about entertainment. As long as the consumer feels some emotional connection with the product, it can be considered an experience.

2.2 Individual Differences

Mobile self-efficacy. The concept of self-efficacy was introduced by Bandura and McClelland [14]. Here, "self-efficacy" refers to an individual's belief in his own power, which in turn influences that individual's life status. An individual's belief in self-efficacy characterizes his/her perceptions, ideas, and self-motivation, as well as the behaviors that drive his/her actions. They pointed out that even if an individual is aware of the consequences of certain actions, he/she may not engage in that behavior or activity before evaluating his/her ability to carry out that behavior, regardless of whether he/she has the capability or confidence to do so. This process of speculation is a representation of self-efficacy.

According to Compeau and Higgins [15], computer self-efficacy refers to how individuals evaluate their skill using a computer; this evaluation has nothing to do with the past, but is rather determined by what can be done in the future. Tsai et al. developed an instrument to measure students' attitude and self-efficacy using the personal digital assistant in a ubiquitous learning (u-learning) environment [16] According to Mahat et al., self-efficacy is related to respondents' belief that they can integrate m-learning with the conventional learning process. This study extends the concept of computer self-efficacy to mobile self-efficacy, which is defined as an individual's evaluation of his/her ability to use mobile APPs in the mobile devices [17].

Personal innovation. Roger's innovation diffusion theory is the most widely used theory in the field of innovative technologies [18]. The theory uses a dynamic perspective to explain how a new product or concept is able to propagate in a society, from its inception to its APPlication, and become known to the public. Roger believes that innovation propagation is the process through which a new product, through certain propagation channels, becomes known to and is adopted by a certain group of people and, eventually,

becomes popular and is accepted by most people. When an individual makes the decision to adopt a particular innovative product, he does not do so spontaneously but instead goes through a series of behavioral and decision-making processes. These processes define the individual's decision regarding the innovation. The individual develops a certain attitude after learning about the product but before choosing to either accept or reject it – a decision that the individual will re-confirm after the product is implemented.

Herd behavior. The term "herd behavior" originated from social psychology, and is related to terms such as "sheep-flock behavior," "sheep-flock effect," and "group behavior." Herd behavior refers to the process through which an individual's beliefs and behaviors are affected by the group and become aligned with those of the group [19]. Keynes [20] said that investors may not follow their own instincts and judgments, which are based on their beliefs and knowledge, when making certain decisions; instead, they are likely to be influenced by group psychology and follow its lead. Social psychologists believe that even if the majority of people are wrong, the individual may still submit to the opinion of the majority [21]. Marketing expert Wilkie discovered that consumers sometimes seek APProval from the group and follow that group's expectations [22], thus, they will adopt beliefs and behaviors that are similar to those of the other group members. Researchers have also indicated that when an individual is affected by others' behaviors, they may make decisions that contradict their original information; this is called herd behavior [23].

The manifestation of an individual's herd behavior arises from the influence exerted by others in his/her group. In the field of social psychology, numerous studies on herd behavior have been conducted by consumer behavior researchers [24-26]. Lascu and Zinkhan [27] summarized the conclusions of various scholars from the perspective of market research, concluding that herd behavior occurs when an individual alters his product evaluation, willingness to purchase, and purchase behaviors by referencing the group's purchase behavior, evaluation, and willingness to purchase to meet the group's expectations. They proposed a model that divides herd behavior into three levels: obedience, recognition, and internalization.

2.3 Service Quality

Parasuraman et al. [28] believed that service quality determines customer loyalty; good service quality can help businesses win their customers' loyalty. Services purchased over the Internet generally involve person-to-machine rather than person-to-person transactions; therefore, the clients who use these services are unaware of the APPearance and attitude of service personnel, a situation that is significantly different from the traditional way of evaluating service quality. Thus, many scholars have proposed recommendations and corrections to the evaluation model in terms of the quality of information systems and Internet services. In this study, we used SERVQUAL to analyze the service quality of the APP platform. The features of the APP service platform slightly differ from those of information systems or general online shopping sites. Therefore, we followed scholars' recommendations [29-33] and adjusted the conditions and features of the platform. Subsequently, we developed six variables for analyzing the APP platform: convenience, responsiveness, customization, website design, reliability, and safety. In this study, we selected the convenience, interface design, and aesthetics of APP designs as the metrics for determining the service quality of the APP platform.

Service-quality evaluation in the past primarily focused on manufacturing activities, and the discussed topics centered on the quality of the physical products; therefore, the quality of services was difficult to measure. This was the case until Parasuraman et al. [28] derived the concept of service quality from the quality of tangible products, which refers to the difference between the customer's expectation regarding the service and the perceived quality of the service, as arising from the customer's actual experience of the service. This conclusion demonstrated three characteristics of service quality: (1) evaluating service quality is more difficult than product quality; (2) the difference between the customer's expectation and the perceived quality from the customer's actual experience is what determines the customers' perception of good or bad service; and (3) evaluating service quality extends beyond just results to include an evaluation of the service delivery process. In addition, Parasuraman et al. [34] explained that service quality is defined as the value of the service generated from the interactions between the service provider and the customer during the service delivery process; he then proposed the SERVQUAL scale for measuring service quality.

2.4 Social Impact

In terms of social impact, this study measures two relevant variables: Stickiness and word of mouth. Stickiness refers to situations in which a website constantly attracts returning users and captures the attention of visitors, causing them to become permanent members. To measure this, we consider the amount of time a user spends on an APP, the frequency of APP usage, and the depth of the community level for that APP each time the user browses it. These three indicators enable us to measure whether or not the APP has a high level of stickiness [35]. APP managers should emphasize creating cohesive APPs, because a user's desire to remain on an APP is influenced by their strong expectation and transaction intentions.

Word-of-mouth communication is an interpersonal behavior in which individuals discuss or exchange

information, increasing their knowledge and understanding of a specific product or service and subsequently influencing their evaluation and purchase intention toward that product or service. The content spread through word-of-mouth can be divided into positive and negative. Positive word of mouth consists of sharing the satisfactory experience of a product with others. Negative word of mouth generally arises from dissatisfied purchase experiences, which results in the sharing of warnings or complaints about a specific poor service or product. Therefore, word of mouth is an informal communication channel between consumers.

However, the Internet has gradually replaced traditional public media as the main source of information for most people. Word-of-mouth is no longer limited to physical means, but also includes content delivered over the Internet. Consumers can collect information and learn about other consumers' opinions on the product through webpage browsing, where they can read about their different consumer experiences, and through other people's opinions and knowledge of the product; this process is known as electronic word-of-mouth [36], Internet word-of-mouth, or word-of-mouse [37]. Traditional word-of-mouth communication differs from Internet word-of-mouth. The former relies on face-to-face communication, while the latter relies on sharing personal experiences with others through the Internet [38]. Internet word-of-mouth differs from traditional word-of-mouth as it involves real-time, interactive communication that provides the non-synchronic, one-to-many, and rapid spread of information. As comment providers are usually anonymous in the Internet's virtual environment, they do not need to be concerned about feelings or stakes, and are therefore more willing to share their honest positive or negative feedback and first-hand experiences [37].

Smartphone consumers collect online word-of-mouth information about an APP from sources such as forums and discussions that are found on the Android marketplace or on other Internet platforms and major networks' websites. Therefore, in addition to the price and practicality of the APPs, the consumer's willingness to download and run an APP is also influenced by the recommendations and evaluations made by other users about that APP on the Internet. Therefore, in this study, we consider word of mouth and stickiness as the influential factors behind a consumer's decision to download smartphone APPs.

3 Methods

3.1 Smartphone Mobile APPlications Development

There are different types of individual preferences when users adopt an APP, which exist in categories such as business, food and drink, lifestyle, social networking, games, photography, music, entertainment, business, health & fitness, and so on. In Taiwan, the low birth rate problem is worsening, so this study developed a "Good Pregnancy Daisakusen" APP platform providing the following functionality: pregnancy weight control, pregnancy and childbirth welfare policy, pre-childbirth period calculation, analysis of pregnancy symptoms, changes during pregnancy, precautions for pregnancy and childbirth, and childbirth preparation, among others. This study thus focuses on the category of health & fitness APPs, users experience value, stickiness, and WOM factors.

Figure 1 illustrates some of the interface of the "Good Pregnancy Daisakusen" APP platform.

Figure 1. The main interface

3.2 Research Framework and Hypotheses

This study incorporated the literature from scholars to develop the research framework shown in Figure 2, taking Holbrook [39] experiential value as the foundation for the framework and incorporating features such as platform service quality and individual differences. We discuss how these factors influence customers' behavioral intention to use smartphone APPs through this framework, which includes the four dimensions of individual differences, service quality, browsing experience, and social impact. The study also proposes three individual difference factors: mobile self-efficacy, innovative personality, and herd behavior. We categorize the service quality characteristics of the APP platform into convenience, interface design, and

aesthetics in the framework. We represent consumers' subjective psychological awareness by their platform browsing-experience process, and use experiential value to determine the decision-making process. The eventual behavioral reaction reflects the stickiness and WOM effects in the dimension measuring the behavioral reaction to social impact.

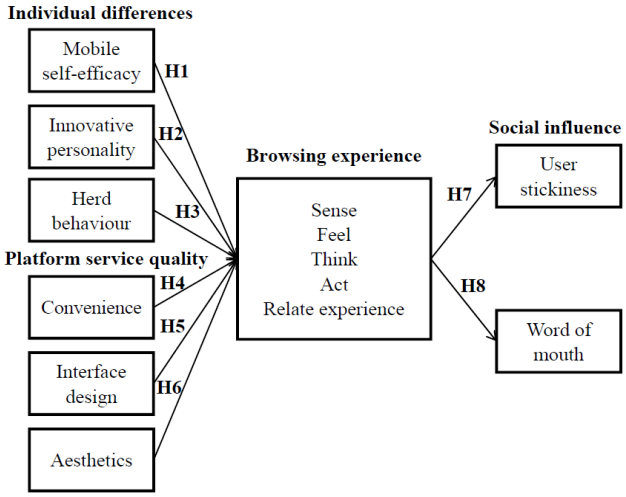

Figure 2. Research framework

Individual differences. An individual's self-efficacy evaluation, which relates to the use of equipment [14] and their innovative personality, is the key factor behind APP use [18]. In addition, others' behaviors can influence an individual's intention to use an APP [23]. Based on the aforementioned literature, we propose that individual differences positively affect the evaluation and judgment process for APP use. Therefore, we propose the following hypotheses:

H1: A significant and positive relationship exists between mobile self-efficacy and browsing experience.

H2: A significant and positive relationship exists between innovative personality and browsing experience.

H3: A significant and positive relationship exists between herd behavior and browsing experience.

Platform service quality. Adopting Parasuraman et al.'s view [34], we provide a new operational definition for service quality: the results of a comparison between the perceived quality of the service and the product of the platform industry and the initial expectations following the APP customers' usage of the APP platform. We used SERVQUAL to discuss the APP platform's service quality because an APP platform's features differ from those of an information system or of regular shopping sites. We also adjusted the APP's status and features according to scholars' recommendations to develop three variables: convenience, interface design, and aesthetics.

The internet-service dimension differs from the traditional service-quality dimension in terms of convenience because consumers can shop online at home and do not have to visit a store. Internet shopping thus provides a faster and more convenient service than the services provided by regular stores, which is then the standard for evaluating the service quality of online shopping. In this study, we measure convenience by whether or not the APP can reduce transaction times and provide convenient services on demand.

The original SERVQUAL is tangible because it references physical facilities, devices, and staff appearance for services and products. In this study, we define interface design as the content design of various functions and the ease of operating the APP platform. The original aesthetics of SERVQUAL refer to the sensory impression conveyed by the product to the customer, which is a relatively subjective judgment. In this study, aesthetics refers to the images and aesthetic characteristics of the APP platform. If the consumer has a relatively good sensory impression of the APP, then there is greater incentive for that consumer to continue using the APP service.

The literature on service-quality dimensions above shows the significance of service quality in this study's research topics. The literature review indicates that service quality can positively influence consumer loyalty through their perception of the service [28]. This study aims to discuss the impact of an APP platform's service quality on the overall browsing experience. We thus propose the following hypotheses:

H4: An APP platform's convenience has a significant and positive effect on the users' browsing experience.

H5: An APP platform's interface design has a significant and positive effect on the users' browsing experience.

H6: An APP platform's aesthetics has a significant and positive effect on the users' browsing experience.

Browsing experience. Holbrook [39] proposed that the positive experiences that stem from comparing, evaluating, and interacting with a product create experiential values. Pine and Gilmore [40] argued that actual customer experience might vanish right after the service is provided, whereas the experiential values become lasting memories. Williams [9] proposed that delivering positive consumer experiences increases the intention to travel again. From a theoretical perspective, when the perceived benefits of a product or service exceed its costs, the probability of purchase increases [41].

Gordon and Anand [42] noted the direct relationship between website experience and consumer intentions. McAlexander et al. [43] stated that community experience is part of the customers' WOM experiences and affects customer loyalty.

To summarize the literature review on customer

loyalty [35, 44-46] and measurements of customer loyalty indicators, we propose "on-site loyalty" and the "WOM effect" as measurement indicators for an APP platform's customer loyalty. On-site loyalty indicates customers' stickiness, which refers to their willingness to remain on the platform, their visiting frequency, and the depth of their browsing. The WOM effect indicates a customer's willingness to advertise, inform, or introduce the platform to other customers. When the customer receives internal and external benefits from their browsing experience, they will stay on the platform and share it with friends and family so they can browse the site together. Positive browsing experience establishes customer loyalty: when the experiential value is high while browsing the platform, both the likelihood of return browsing and the loyalty of friends and family increases. Thus, we propose the following hypotheses:

H7: The user's APP browsing experience has a significant positive relationship with the level of user stickiness.

H8: The user's APP browsing experience has a significant positive relationship with WOM.

3.3 Measurement Dimensions

We took measurements dimensions from past research, including mobile self-efficacy, innovative personality, herd behavior, convenience, interface design, aesthetics, browsing experience, stickiness, and WOM. We propose the mobile self-efficacy measurement items based on Compeau and Higgins's proposed enjoyment scale [15], that for innovative personality on Roger's proposed items [18], and that for herd behavior on Bikhchandani and Sharma's proposed items [23]. To measure convenience, interface design, and aesthetics, we used Zeithaml et al. and Parasuraman et al.'s proposed items [33, 47], and measured browsing experience based on Schmitt's proposed scale [12]. We used Gillespie et al. and Lin's proposed enjoyment scale for the user stickiness measurement items [35, 48]. Finally, we based WOM on Bansal and Voyer, and Hennig-Thurau et al.'s proposed scale [49-50].

The questionnaire used in this study contains five sections, each consisting of single-choice questions: personal data, the service-innovation scale, standardized-assessment scale, service-quality scale, and customer satisfaction scale. We used a 7-point Likert scale to score the answers, ranging from "strongly disagree" = 1 to "strongly agree" = 7, with higher scores indicating that the customer has a higher degree of agreement with the question. We modified the survey contents with the guidance of a few relevant experts to adapt it to the APP platform.

3.4 Data Collection

We issued online surveys to collect the data for analysis by placing the questionnaires on popular social networks, where members and visitors of the sites could browse and answer the surveys based on self-evaluations. This study targeted students who had used APP platforms in the past. We received 203 surveys and dropped 33 invalid responses, leaving 170 valid responses, an 83.7% response rate, for analysis. Of the respondents, 62% were male and 38% were female, and 44% of the respondents were under the age of 20 and 56% were above the age of 20. Moreover, 12% of the respondents did not have a college education, 84% did have a college education, and 4% were studying at a graduate School. Among the respondents, 24% had downloaded APPs from the Apple APP store in the past and 84% had downloaded APPs from Google Play. In addition, 58% of participants downloaded less than 10 times within the past three months, 17% of respondents downloaded APPs 10 to 29 times, 9% of respondents downloaded APPs more than 30 times, and 16% did not download any APPs within the past three months. Lastly, in terms of APP usage, 26% of respondents used it once a day on average, 44% used it more than once a day, 20% used it three or four times a week, 5% used it once a month, and 6% used it less than once a month.

4 Results

We adopted the partial least squares method (PLS) to analyze the empirical data to study the respondents' psychological characteristics related to the study's measurement dimensions and the verification research models simultaneously. PLS has fewer limitations and more advantages in terms of sample size, measurement scale, and data distribution [51]. In this section, we analyze the survey samples, including the reliability and validity of the survey, and verify the research models and hypotheses.

4.1 Reliability

Reliability refers to the consistency or stability of the measurement results, or whether the researcher obtains consistent results from the measurements (via different forms or at different times) on identical or similar phenomena (or groups of phenomena). Nunnally [52] states that the Cronbach's α coefficient has to be above 0.7 for a result to exist in the high acceptance range. For this study, the Cronbach's α coefficients for all 10 dimensions ranged from 0.93 to 0.96, exceeding the standard value of 0.7. The reliability analysis results in Table 1 indicate that the surveys have a high reliability level, and we need not delete any entries at this stage.

Table 1. Results of reliability, convergent validity, and discriminant validity analysis

	M	SD	CR	AVE	MSE	INNO	BWG	SEQC	SEQWD	SEQB	BROEXP	STICK	WOM
MSE	5.44	1.08	0.94	0.72	0.85								
INNO	5.06	1.19	0.93	0.72	0.56	0.85							
BWG	4.97	1.12	0.93	0.63	0.51	0.60	0.79						
SEQC	5.23	1.13	0.94	0.83	0.58	0.66	0.72	0.91					
SEQWD	4.97	1.06	0.93	0.72	0.52	0.55	0.65	0.72	0.85				
SEQB	5.16	1.08	0.93	0.80	0.60	0.53	0.63	0.69	0.79	0.90			
BROEXP	5.08	1.05	0.96	0.69	0.72	0.69	0.73	0.78	0.82	0.82	0.83		
STICK	4.61	1.47	0.96	0.88	0.36	0.49	0.67	0.60	0.66	0.62	0.65	0.94	
WOM	4.92	1.26	0.95	0.79	0.50	0.53	0.69	0.71	0.71	0.74	0.81	0.72	0.89

Notes. (1) "AVE" stands for average variance extraction rate and 'CR' stands for composite variance. (2) The bolded text on the diagonal represents the square root of the average variance extraction rate. Values outside the diagonal represent the correlations between the dimensions.

4.2 Survey Method

Table 1 also provides analyses for convergent and discriminant validity. The composite variances for all dimensions under all models exceeded 0.80, a value significantly higher than the recommended value of 0.5 [53]. These findings indicate that more than half of the entries in the proposed hypothetical dimensions were valid. This conditional index is the explanatory power of the measurement questions for the calculated dimensions in terms of the variances of the dimensions. A higher average variance extraction rate indicates greater reliability and convergent validity for that dimension. In addition, to determine discriminant validity, we compared the average variances of the individual dimensions and the shared variances to show that the shared variables between the dimensions do not exceed the average variances of the individual dimensions [54]. Overall, the measurement model has an Appropriate level of reliability, convergent validity, and discriminant validity.

4.3 Structural Mode

We tested the research models using the SmartPLS 2.0 software package. PLS does not provide moderations for the entire model, but instead verifies the predictability of the measurement's structural paths using explanatory power. We also used the nonparametric bootstrap method to estimate the parameters, which estimates the statistical distributions based on a re-sampling of the sample data. We followed Chin's recommendation and re-sampled up to 500 times to further test and verify the estimates of the structural paths. Figure 3 shows that the explanatory power of the browsing-experience variable is 0.853, indicating that mobile self-efficacy, (b=.234, $p < .001$), innovative personality (b=.142, $p < .001$), herd behavior (b=.129, $p < .01$), website design, (b =.271, $p < .001$), and the aesthetics of a platform's service quality (b =.307, $p < .001$) are personal factors with significant influence. The explanatory powers of these five influence factors total 85.3%. Browsing experience has a significant effect on stickiness (b =.651, $p < .001$) and WOM (b =.807, $p < .001$), with the explanatory powers of these two variables measuring 42.4% and 65.1%, respectively. In addition, the convenience of a platform's service quality (b =.082, $p > .05$) does not have a significant effect on intention conversion. The results support all eight hypotheses eight except hypothesis four.

From these research results, we can see that the greater an individual's ability to use a mobile device, the greater their openness to new products, and the greater their likelihood to follow herd behavior and the higher their perceived feelings toward their browsing experience. In addition, the better the interface design and aesthetics of the platform's service quality, the greater the users' perceived browsing experience. A higher level of browsing experience positively influences the user's stickiness with the APP platform and their WOM communication. In addition, neither the reference group's use behavior nor the APP's convenience affects the user's perceived browsing experiences.

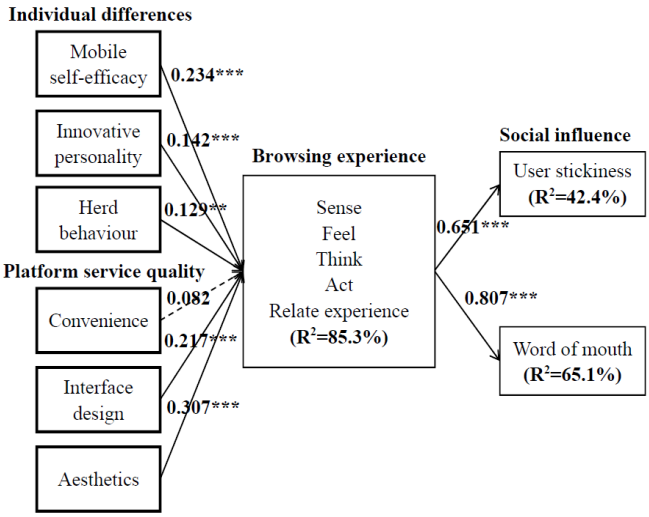

Figure 3. Research Model Analysis Results

Note. (1) * indicates $t < 0.05$; ** $t < 0.01$; and *** $t < 0.001$. (2) ———— indicates a significant level; ---------- indicates a non-significant level.

5 Discussion

In this study, we identified the factors that influence users' intention to download and use mobile APPs by investigating individual differences, platform service quality, browsing experiences, and customer loyalty.

Individual differences. the effects of mobile self-efficacy, innovative personality, and herd behavior on browsing experience and customer loyalty.

A higher level of confidence in using a mobile device increases the intensity of a user's browsing experience and enhances customer loyalty, which matches past observations that self-efficacy influences users' attitudes toward using certain devices. In addition, the more a customer accepts a new product, the better their browsing experience and customer loyalty are. An innovative user displays a higher willingness to browse and use a new APP. Moreover, a higher degree of herd behavior increases the degree to which a user is influenced by surrounding users, thereby increasing their loyalty and willingness to browse the APP.

Platform service quality. the effect of an APP platform's service quality, including convenience, interface design, and aesthetics on the overall browsing experience.

The results show the effect of an interface's design and aesthetics on browsing experience, stickiness, and reputation, but APP convenience does not significantly affect a user's browsing experience, possibly because APP use has been quite common for users, so convenience makes little difference. Instead, the functional interface design and aesthetics are the important factors influencing users' browsing experience when users can choose many types of APPs. The results indicate that consumers do pay attention to the interface design and the aesthetics of the platform, but do not pay much attention to the platform's convenience.

Browsing experience. consumer-perceived values arising from the interaction of rationality and emotions that influence loyalty, including user stickiness and WOM.

The user's browsing experience affects stickiness and the effectiveness of WOM information. Users with high experiential values also demonstrate a high degree of stickiness toward and WOM about the APP platform.

6 Conclusion

This study provides original research. We used the perceived model and drew references from the influential factors discussed in earlier works, modifying these factors and integrating them into perceived factors to construct this study's framework. We then used the framework to explain factors that influence users' intentions to download mobile APPs. The results show that individual differences and service quality of platform have significant effects on users' browsing experience, which then affects users' stickiness and WOM. The study may serve as a basis for future discussions of user intentions toward smartphone APPs.

Since many factors influence smartphone APP use, this study cannot include all possible factors. We therefore recommend that researchers study other relevant variables to understand how additional factors influence users' usage intentions. Furthermore, most respondents in this study were students, and thus do not represent a more comprehensive sample. We therefore recommend expanding the sample group in the future to include different age groups and to determine how the degree of influence varies for these groups.

We propose the following recommendations for management: (1) users are attracted by better interface design and aesthetics, (2) the cluster effect motivates users to try demo versions of an APP and may be encouraged to purchase the full product after the demo to benefit from its complete functionality, and (3) users with a higher innovative personality and more familiarity with mobile devices tend to have higher willingness to browse and use smartphone APPs. The present study provides a number of academic and practical contributions as follows:

6.1 Academic Contribution

Previous research focused on the users' needs for APPs by investigating the effect of user satisfaction, behavior, and use for different types of APPs such as games and tourism. Few studies examine the effect of stickiness and WOM in terms of users' individual differences, quality of the APP platform, and users' perceptions of the browsing experience. This study investigated the effect of these factors on users' behavior toward using APPs. We hope that the results of this study contribute to the broader scholarship.

6.2 Practice Contribution

The research results yielded insights that may serve as recommendations for APP developers for product development and in marketing strategies.

Increasing interactive marketing or experiential marketing. We found that perceived sacrifice positively affects perceived value, indicating that when a user purchases and downloads a mobile APP, they also enjoy the process of searching for and trying out demo versions of it. Therefore, in addition to ensuring a certain standard for the functionality and interface, developers can also offer demo versions of the APP or offer giveaways to increase the number of discussion topics relating to that APP.

Aesthetics of platform interface design. The findings in this study show that users pay relatively more attention to the interface design and aesthetics of the

APP platform. Thus, APP platform developers should focus on these factors to attract more downloads and use of their APPs, and to enhance their APP's stickiness and WOM communication.

Purchasing power of high-stickiness customers. This study shows that users who spend more than two hours a day on APPs do enjoy a higher perceived service quality, browsing experience, and purchasing intention than users who spend less than 30 minutes a day on APPs. The results indicate that if developers can satisfy the various perceived aspects of intense users, and then it would be easier for them to attract more downloads.

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