The role of utilitarian and hedonic aspects in the continuance intention to use social mobile Apps

Running Title: *Continuance use of social mobile Apps*

Abstract

The purpose of this research is to understand the main factors that determine users' continuance intention to use social mobile Apps, considering two utilitarian (i.e., perceived usefulness, perceived ease of use) variables and a hedonic (i.e., perceived enjoyment) variable. As social mobile Apps may be utilitarian or hedonic, we aim to evaluate possible differences in the significance of the aforementioned antecedent factors in utilitarian Apps (i.e., TripAdvisor) and hedonic Apps (i.e., Instagram). The data were collected from an international sample of users; the Partial Least Squares method was applied to analyze the research model, using SMARTPLS 3.0. To analyze the moderating effects, a multi-group PLS analysis was carried out to compare the differences between the path relationships in the two Apps. The results show that continuance intention to use is explained by perceived usefulness, perceived ease of use, perceived enjoyment, satisfaction and user experience (control variable), and the impact of utilitarian variables is generally greater for utilitarian Apps, whereas the impact of perceived enjoyment is higher for hedonic Apps. This study contributes to the general body of knowledge about mobile Apps by providing a comprehensive theoretical foundation and practical implications that illuminate the continuance use of social mobile Apps.

Keywords: Mobile Apps, continuance intention to use, utilitarian-hedonic approach, perceived ease of use, perceived usefulness, perceived enjoyment, satisfaction.

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1. INTRODUCTION

Recently, due the rise of smartphones, there has been a rapid increase in the number of people using social mobile Apps on their mobile phones. Extension to existing social networking sites accessed through desktop computers, social mobile Apps are mobile-device (e.g., smartphones or tablets) based software applications with location-based services that enable individuals to interact with others continuously through wireless networks (Qin et al., 2016). These Apps allow their users to share their experiences, photos, recommendations, etc. with their social networks wherever they go (De Oliveira et al., 2016). The shift toward mobile Apps increases users' engagement (Bilro & Loureiro, 2020), probably because of the notion of "fear of missing out", which describes the persistent feeling that pushes individuals to spend a lot of time in social mobile Apps in order not to miss vital opportunities to socialize (Schrock, 2015).

The growth of the social mobile App market has been phenomenal; 91% of all social media users access social channels via mobile devices. Similarly, almost 80% of total time spent on social networking sites is passed on mobiles (Mohsin, 2020). According to SensorTower (2019), social mobile Apps are the most downloaded Apps worldwide. Specifically, Facebook topped the list of the most popular social mobile Apps in terms of the number of monthly active users, with 2.85 billion active users, followed by YouTube (2.29B active users), and in the fourth place, Instagram with 1.4B active users (Statista, 2021). However, as the social mobile App market grows, so competition increases. Therefore, to ensure the long-term survival of the industry, App producers need to attract new users, to retain current users over time, and to facilitate continuance usage of their Apps.

Previous authors have pointed out the importance of the marketing field in responding to new technological developments such as virtual assistants (e.g., Ratchford, 2020) and mobile Apps (e.g., Bilro & Loureiro, 2020). Several studies have investigated the adoption of social mobile Apps in different contexts (e.g., Qin et al., 2016; Qin et al., 2018; Park et al., 2014; Lin & Lu, 2015), considering both utilitarian factors (e.g. perceived usefulness [e.g. Park et al., 2014]) and hedonic factors (e.g. perceived enjoyment [Qin et al., 2016], hedonic value [Lu, 2014]). However, to the best of the authors' knowledge, few empirical studies have

focused on continuance intention to use social mobile Apps (e.g. Ashraf et al., 2019; Hsiao et al., 2016; Tam et al., 2018). Table 1 presents a summary of these studies on mobile Apps continuance usage intention and briefly details their objectives, methodology, results, and type of mobile App (utilitarian vs. hedonic). While most of these studies focused mainly on utilitarian factors, such as perceived ease of use, facilitating conditions, price value, performance expectancy or effort expectancy (Tam et al., 2018; Kim et al., 2019), few works drew attention to hedonic values. In this respect, Ashraf et al. (2019) investigated continuance intention to use the mobile chat App "WeChat" by exploring the influence of personality traits, hedonic and utilitarian values, but their research focused on a limited sample of (Chinese) users and did not specify the hedonic and utilitarian variables that influenced continuance intention to use social mobile Apps. Similarly, Qing and Haiying (2021) studied, from the perspective of consumer-brand engagement, the factors influencing the continuance intention to use branded Apps. Their findings pointed out that the utilitarian and hedonic motives indirectly influence the continuance intention through consumer-brand engagement, without specifying the nature of the Apps analyzed. Indeed, most previous studies have just focused on one App (e.g., "We Chat App" [Ashraf et al., 2019]; "KakoaTalk App" [Oghuma et al., 2016]; "Instagram App" [Lee et al., 2016]), or have not differentiated between different types of Apps (e.g., Qing and Haiying, 2021; Choi et al, 2018; Ozturk et al., 2016). However, not only may individuals have different motivations (i.e., hedonic, utilitarian) to use social mobile Apps, but also each App may have a utilitarian or hedonic nature.

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The contribution of this study is thus twofold: first, we aim to determine the factors that drive continuance intention to use social mobile Apps following a utilitarian-hedonic approach, as users may have both utilitarian and hedonic motivations when using them. The technology acceptance model (TAM) has long been used to examine utilitarian systems (e.g., Davis, 1989; Childers et al., 2001). Then, Van der Heijden (2004) integrated the hedonic component into the TAM to investigate user acceptance of hedonic systems. Since then, several studies have extended the TAM model by integrating perceived enjoyment in different contexts (e.g., Qin et al., 2016; Qin et al., 2018). In this line, this work considers both components in a novel context (social mobile Apps) in order to provide a comprehensive theoretical foundation that illuminates how users continue to use these Apps. Second, this study is one of the first attempts to explore not only utilitarian and hedonic antecedent factors of

continuance intention to use social mobile Apps at the same time, but also distinguishes between two types of Apps: utilitarian and hedonic Apps. Even though previous studies have also explored some determinants of users' intention to continue using mobile Apps (see Table 1), none of them have evaluated potential differences in their influence between different types of Apps. To move on this topic, this research assesses whether the predictive importance of the determinants of continuance intention to use changes depending on the type of mobile App (utilitarian or hedonic).

To pursue these aims, we develop a research model to investigate the main factors that determine user continuance intention for social mobile Apps based on a hedonic-utilitarian approach. On the one hand, following previous literature (Davis, 1989; Van der Heijden, 2004), we consider, in taking a utilitarian approach, perceived usefulness and perceived ease of use as key variables in the process. On the other, perceived enjoyment has been an important addendum to utilitarian models, such as the TAM (Van der Heijden, 2004). As a result, it is representative of the hedonic approach. Additionally, following the Information Systems (IS) continuance model (Bhattacherjee, 2001), we consider satisfaction to be a main driver of continuance intention to use (Bhattacherjee, 2001; Limayem et al., 2007), and due to its widely reported influence on continuance intentions, previous experience is used as a control variable (e.g. Amoroso & Lim, 2017, Bao et al., 2020). Finally, as social mobile Apps may have utilitarian or hedonic nature, we evaluate possible differences in the importance of the aforementioned antecedent factors between utilitarian (e.g., TripAdvisor) and hedonic (e.g., Instagram) Apps.

The present study is organized as follows. First, the theoretical framework is presented; this includes a description of the hedonic-utilitarian approach that is the basis of the hypotheses development. Thereafter, the methodology, empirical analyses and results are presented. Finally, the conclusions and implications of the study, and its limitations, which open future research opportunities, are discussed.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1 Utilitarian-hedonic approach

Usage experience is multi-dimensional and, to examine user behavior, we should focus both on utilitarian and hedonic motivations (Holbrook & Hirschman, 1982). Several authors have argued that consumer motivations can be divided into utilitarian and hedonic (Childers et al., 2001). Previous literature has indicated that, when consumers perceive they receive high

levels of utilitarian and hedonic value from their experiences, they tend to develop positive behavioral intentions, such as repeat purchase and continued use. In the social media realm, Ashraf et al. (2019) suggested that personality traits (personal innovativeness, face consciousness, need for uniqueness) have positive effects on both hedonic and utilitarian values, which in turn positively affect continuance intention. In the same vein, Sun et al. (2014) empirically validated that perceived enjoyment and perceived usefulness substantially explained Chinese users' continuance intention to use online social networks, which is consistent with previous findings in other contexts (e.g., repeat purchase intentions in e-commerce [Chiu et al., 2014], continued engagement with smartphones [Koo et al., 2011], game purchase and usage ([Davis et al., 2013], or mobile internet quality [Kim & Hwang, 2012]). Therefore, we followed a twofold approach, utilitarian and hedonic, to understand continuance intention to use social mobile Apps.

Sarkar (2011, p. 58) stated that "the utilitarian perspective assumes the buyer to be a logical problem solver". In this respect, perceived usefulness, perceived ease of use, price, and personal data security have traditionally been considered utilitarian factors (Childers et al., 2001). Similarly, Babin et al. (1994) stated that efficiency and achieving a specific aim during the shopping process are related to the utilitarian perspective. In our research context, we relate utilitarian motivations to the completion of any kind of task as quickly and effortlessly as possible. From this perspective, two variables, perceived usefulness and perceived ease of use, have usually been considered as the key variables in determining the acceptance of information technologies (e.g., see TAM for more details [Davis, 1989]). Perceived usefulness has been defined as "the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context" (Davis, 1989, p. 985). Adapted to our framework, we define perceived usefulness as the degree to which a user believes that a given social mobile App will help increase his/her performance. Perceived ease of use was defined by Venkatesh et al. (2003, p. 450) as "the degree of ease associated with the use of the system." Rouibah et al. (2011) defined it as the users' perception of whether performing a given technical task would require a mental effort. In general, users tend to prefer a simplicity-driven technology with maximized efficiency (Davis et al., 1989). Adapted to our research, we define perceived ease of use as the user's overall perception of the degree of ease and convenience of using a social mobile App.

Hirschmann and Holbrok (1982, p.92) suggested that the hedonic perspective "relates to the multisensory, fantasy and emotive aspects of product use". Hedonic motives are usually connected to desire, entertainment and the pleasure derived from an experience (Ozen & Kodaz, 2012). Other authors indicated that, when consumers perceive high levels of hedonic value from consumption experiences, they tend to express positive behavioral intentions, such as continued usage (Chiu et al., 2014). Several studies extended the TAM by integrating perceived enjoyment, which has traditionally been considered as the key hedonic variable (Van der Heijden, 2004). Drumwright and Kim (2016) defined perceived enjoyment as the intrinsic motivation that reflects the pleasure and joy associated with using a system. Perceived enjoyment has often been identified as an influencing factor in the adoption and acceptance of mobile information systems and services (Hew et al., 2018). Thus, in the present study, we adopt perceived enjoyment as the hedonic motive that affects continuance intention to use social mobile Apps. In summary, users may access social mobile Apps not only to acquire information or complete a given task (utilitarian motives), but also to enjoy pleasurable experiences (hedonic motive).

Finally, following the IS continuance model (Bhattacherjee, 2001), we consider satisfaction to be an antecedent factor of IS continuance use intention. According to Bhattacherjee (2001), satisfaction is an ex-post evaluation of consumers' initial experience with a product/service, and is captured as a positive feeling (satisfaction), indifference, or as a negative feeling (dissatisfaction). Similarly, expectation-disconfirmation theory represents satisfaction as the degree to which expectations generated on previous occasions have been met (Oliver, 1980), being a key predictor of IS continuance intention (Koo & Chung, 2015). This is because satisfaction sets the standard for what an individual expects from the other party in a relationship (Bauer et al., 2002), in this case, a social mobile App.

2.2 Research model and hypotheses development

The proposed model, based on a hedonic-utilitarian approach, combines crucial utilitarian variables (perceived ease of use and perceived usefulness), a hedonic variable (perceived enjoyment), and consumer satisfaction, to achieve a better understanding of continuance intention to use social mobile Apps. In addition, user experience plays a crucial role in bridging the separate stages of pre and post adoption of technologies (Kim & Kim, 2014) and, as a consequence, it promotes IS continuance intention usage (Amoroso & Lim, 2017; Tam et al., 2018). Therefore, we include user experience as a control variable that could affect the continuance intention to use the mobile Apps. Furthermore, as social networking

services are multi-purpose IS (Pillai & Mukherjee, 2011), social mobile Apps may have a utilitarian or hedonic nature. Specifically, social mobile Apps, in our context, can be used for utilitarian purposes (e.g., to acquire information to make business, leisure and/or professional decisions) or for hedonic and socio-psychological purposes (such as networking with friends, collecting pictures/videos for fun, and to share experiences). Therefore, as some social mobile Apps are more utilitarian, and others more hedonic, we include App type as a moderator to help us gain a deeper understanding of the variables that influence continuance intention to use both types of social mobile App. Figure 1 summarizes the research model and the proposed relationships.

INSERT FIGURE 1 ABOUT HERE

2.2.1 The influence of perceived usefulness on satisfaction and continuance intention to use social mobile Apps

A substantial body of research has shown that perceived usefulness is a crucial determinant of satisfaction (Suki & Ramayah, 2010) and continued use of IS (Lin & Lu, 2011). On the one hand, perceived usefulness is the most salient ex-post expectation influencing users' post-acceptance affect, that is, satisfaction (Bhattacherjee, 2001). On the other hand, people may form continuance intentions because they believe the behavior will improve their performance, regardless of the positive or negative feelings evoked by the behavior (Davis et al., 1989).

The perceived usefulness of mobile Apps has been associated with obtaining useful information that may result in improved performance of a specific task or in making a decision (Weng el al., 2017). More specifically, in the social media field, a user might freely and quickly obtain a lot of information and perform various actions (e.g., find location maps, promotions, contact numbers, addresses, etc.) (Blasco-López et al., 2019). Thus, when App users discover they can obtain the information they seek and can interact through an App, they may develop positive feelings and feel satisfaction toward the technology. In addition, the technology may help individuals achieve a goal or increase their performance. These individuals, thus, because of its perceived usefulness, become more willing to reuse the technology (Lin & Lu, 2011).

These proposals are consistent with previous findings about mobile Apps analyzed in other contexts. For example, Bahruni et al. (2013) found a significant relationship between perceived usefulness and continuance intention to use e-Government Apps. Additionally, Lu

et al. (2019), evaluating Massive Open Online Courses, found that students' satisfaction with these courses increased when they perceived they were highly useful. Similarly, Fouroughi et al. (2019) found that users are willing to continue using mobile banking if they find it useful for their transactional activities. In summary, as Tam el al. (2018) suggest, when mobile Apps increase their users' productivity and help them to accomplish tasks efficiently and quickly, users feel satisfied with the Apps. Thus, adapting these ideas to our research context, the following hypotheses are proposed.

H1a. Perceived usefulness positively affects user satisfaction with social mobile Apps.
H1b. Perceived usefulness positively affects continuance intention to use social mobile Apps.

2.2.2 The influence of perceived ease of use on perceived usefulness, satisfaction and perceived enjoyment in the use of social mobile Apps

Davis (1989) described perceived ease of use as a main predictor of perceived usefulness. This is probably because users feel that the perceived ease of use of an IS improves their task performance with the technology (Davis et al., 1989), thus increasing its perceived usefulness. In addition, perceived ease of use affects user satisfaction because it generates positive feelings toward systems that require little cognitive processing (Venkatesh & Davis, 1996). Moreover, perceived ease of use impacts positively on perceived enjoyment (Ramayah & Ignatius, 2005); if an IS is relatively easy to use, users are more likely to enjoy their interactions with it (Tam et al., 2018).

Adapted to our framework, when mobile Apps are user-friendly and (relatively) effortless to operate, their users are more productive and efficient in their use and are, therefore, able to benefit from the App (Camilleri & Camilleri, 2017). In addition, when mobile Apps have good interfaces and formats, their users perceive they have the ability to successfully interact with them and use their content easily, and with minimum effort; as a result, they feel more satisfied (Montazemi & Saremi, 2013). A similar argument can be made for the influence of perceived ease of use on perceived enjoyment. If an App is relatively easy to use, users are more willing to learn about its features and, consequently, will enjoy the experience of using it (Tam et al., 2018).

A sizable body of research supports the significant relationship between perceived ease of use and perceived usefulness in the context of new technologies (e.g., Kim et al. 2008;

Belanche et al., 2012). For example, Kim et al. (2008) concluded that the less effort that consumers expect to invest in using a given technology, the more useful they perceive it to be. More specifically, Muñoz-Leiva et al. (2012) argued that, when users find social networks easy to use, they believe that the posted content will be useful for their decision-making. Similarly, scholars have widely discussed the importance of perceived ease of use in relation to IS customer satisfaction (Venkatesh & Davis, 1996). Jun et al. (2004) evaluated customers' perceived satisfaction in the context of online retailing and found that online retailers should focus on easy-access, well-designed catalogs, concise contents, and easy to understand terms and conditions. Hansen et al. (2018) showed that an increase in the perceived ease of use is associated with an increase in the perceived usefulness of engaging in transactions through social network sites. Moreover, it has been found that, when the simple menu structure and easy navigation of an App meets its users' expectations, positive feelings, which lead to feelings of satisfaction, are generated (Choi et al., 2018). Finally, as to the link between perceived ease of use and perceived enjoyment, several authors found that systems perceived as convenient to use are more likely to be perceived as enjoyable (Davis et al., 1992). This result has also been found in the online context (e.g., Hsu & Lu, 2007; Casaló et al., 2012). For example, Hsu and Lu (2007) suggested that, when virtual communities have easy to use interfaces, perceived enjoyment is enhanced and people is encouraged to continue participating in them. Considering all the above, we propose that:

H2a. Perceived ease of use positively affects the perceived usefulness of social mobile Apps.
H2b. Perceived ease of use positively affects user satisfaction with social mobile Apps.
H2c. Perceived ease of use positively affects perceived enjoyment of social mobile Apps.

2.2.3 The effect of perceived enjoyment on satisfaction and continuance intention to use social mobile Apps

Several authors suggested that perceived enjoyment, as a hedonic motivation, affects customer satisfaction and continuance intention to use. On the one hand, when the use of a technology arouses pleasure and perceived enjoyment, this might produce shifts in users' affective states, thus creating positive feelings that may increase satisfaction levels (Casaló el al., 2017a). On the other hand, interactions with technologies that are perceived as "fun" and enjoyable create expectations that one will receive an internal psychological reward, enough to motivate the continued use of the technology (Igbaria et al., 1996).

In the context of social mobile Apps, entertainment features such as chat rooms, photo/video sharing, and gaming applications, etc. may entertain their users and lead them to feel satisfied

with the Apps (Pillai & Mukherjee, 2011). As well, users are more motivated to undertake or repeat an activity that is enjoyable (Suki & Suki, 2011); therefore, if a user experiences perceived enjoyment through interacting with a social mobile App (e.g., viewing photos/videos, reading shared experiences, etc.), the probability that (s)he will continue to use it will increase.

As to previous studies on the mobile context, Joo et al. (2018) evaluated digital textbook classes and showed that learners who experienced high levels of perceived enjoyment were more likely to be satisfied with using the digital textbook technology. Similarly, Zhou (2014) suggested that when users find using mobile Internet devices enjoyable and fun, they feel greater satisfaction and tend to continue using them. Moreover, Hew et al. (2018), in the context of mobile travel Apps, highlighted that when users undergo an enjoyable experience, they may continue to use the relevant mobile App. Therefore, we propose that:

H3a. Perceived enjoyment positively affects user satisfaction with social mobile Apps.
H3b. Perceived enjoyment positively affects continuance intention to use social mobile Apps.

2.2.4 The effect of satisfaction on continuance intention to use social mobile Apps

Various authors suggested that satisfaction is the core element in continuance intention to use (e.g., Bhattacherjee, 2001; Zhou, 2014), probably because it captures the current experience of IS use (Bhattacherjee & Lin, 2015). As a result, users decide whether to continue or discontinue using them based on their levels of satisfaction (Li & Liu, 2014).

Anderson and Srinivasan (2003), in the context of e-commerce, argued that satisfaction is linked to user's contentment with his/her experience. Thus, it can be argued that if the outcomes of using social mobile Apps match or exceed users' expectations, they are more likely to be pleased with their experiences. Accordingly, users who are pleased with their experiences with social mobile Apps are more motivated to continue using them. In this respect, many authors suggested that user satisfaction is a reliable predictor of continuance intention to use ISs (Wang & Wang, 2010; Weng et al., 2017; Hepola et al., 2020). Weng et al. (2017) found that users who were satisfied with a mobile taxi booking App were more likely to develop continuance intention to use it. Moreover, this relationship has recently been proved by Wang and Wang (2010) in the context of mobile catering Apps. In summary, these results are consistent with the Forrester Q3 2016 survey undertaken in the US and the UK, which affirmed that customer satisfaction is a crucial enabler of continuance intention

to use mobile Apps (Singh & Jang, 2020). Drawing on the previous literature, we propose that:

H4. User satisfaction positively affects continuance intention to use social mobile Apps.

2.2.5. Moderating effects: Utilitarian vs. Hedonic Apps

To predict users' continuance intention to use social mobile Apps, it is necessary to understand both its main antecedent factors (e.g., perceived usefulness, perceived ease of use, perceived enjoyment and satisfaction), and how users process information based on social mobile App type (utilitarian vs. hedonic). The information processing literature has demonstrated that consumers develop different perceptions of the same stimuli depending on the context in which they integrate the information (Stewin & Anderson, 1974). Previous authors proposed so-called duality models to distinguish between two modes of information processing (Chaiken, 1980; Petty & Cacioppo, 1986). The systematic mode is guided by analytical reflection and cognition. Consumers process information in a deep and methodical way. In the heuristic mode, in contrast, consumers rely primarily on mental shortcutting rules in their decision-making to minimize their cognitive processing (Chaiken, 1980).

Utilitarian products/services are predominantly instrumental, and their consumption/use is motivated by functional attributes (Khan et al., 2005). Therefore, the performance demands set for the functions of utilitarian products/services are particularly high (Myers & Shocker, 1981), so consumers tend to process perceptions in a more consistent and functional way (Hirschman & Holbrook, 1982). Adapted to our context, perceived usefulness and perceived ease of use will be more relevant for utilitarian social mobile Apps, and their effects will be greater in these Apps. Indeed, previous literature has confirmed the great importance of these variables in utilitarian-oriented activities, such as online banking (Rodrigues et al., 2016) and mobile hotel bookings (Ozturk et el., 2016). Thus, we propose the following hypotheses:

H5. The influence of perceived usefulness on (a) user satisfaction and (b) continuance intention to use will be greater for utilitarian than for hedonic Apps.

H6. The influence of perceived ease of use on user satisfaction will be greater for utilitarian than for hedonic Apps.

Hedonic products/services, on the other hand, are multisensory and provide fun, entertainment and excitement. Therefore, when users employ hedonic products/services their perceptions tend to be processed less systematically and more heuristically (Ratchford & Haines, 1987). In our research context of social mobile Apps, these assertions imply that

perceived enjoyment will be more relevant for hedonic Apps and its effects will be thus higher.

A significant number of authors confirmed the important impact of perceived enjoyment on satisfaction and intention behaviors in the use of hedonic systems. Basak and Calisir (2015) found that perceived enjoyment is one of the main factors that generate feelings of satisfaction while using hedonic social networking sites. In addition, Casaló et al. (2017a) confirmed that perceived enjoyment significantly affects user satisfaction and intention to follow a brand community on Instagram App. Therefore, it is reasonable to conclude that it is particularly important that users undergo enjoyable experiences when using hedonic Apps; this can produce changes in their emotional states, increasing their satisfaction levels and, consequently, their continuance intention to use the Apps. As a result, we propose that:

H7. The influence of perceived enjoyment on (a) user satisfaction and (b) continuance intention to use will be greater for hedonic than for utilitarian Apps.

2.2.6 Control variable: User experience

For the sake of completeness, we consider user experience with the App as a control variable to explain continuance intention to use social mobile Apps, as previous usage experience is relevant in building continuous usage intentions (Dorsch et al., 2000). Specifically, users with prior experience in using IS typically form learning skills, which then promote the continuation of the same type of behavior (Amoroso & Lim, 2017; Gefen, 2003). According to Barnes (2011), continuance intention can be predicted by the extent to which a behavior has become automatic because of prior learning. In our case, the user experience of using social mobile Apps will encourage the intention to continue using the same mobile Apps, as individuals tend to perform automatic behaviors. Therefore, we control for the positive influence that user experience may exert on continuance intention to use social mobile Apps.

3. RESEARCH METHODOLOGY

3.1 Research context: Instagram and TripAdvisor

Since younger generations seem to prefer viewing images than reading text, image-based social networks, such as Instagram, have gained popularity during the last years (Choi & Sung, 2018). Instagram is the fourth biggest social media App surpassing one billion registered accounts and currently sits at more than 1.3 billion monthly active users (Statista, 2021). At its outset, Instagram allowed users to take photos, apply filters, and share them as posts (Casaló et al., 2017b), with followers who could “like” and comment (Kim et al.,

2018). Recently, new formats have been incorporated (e.g. “Instagram stories”, live videos) to improve the user experience.

Much people have incorporated social mobile Apps into their media consumption routines. Instagram use can be highly gratifying as it provides a reliable source of pleasure (Bahri-Ammari et al., 2019), helps manage the individual’s mood (Frison & Eggermont, 2017), fuels psychological well-being and fulfills various other needs, ranging from less (e.g., passing time) to more fundamental (e.g., the need to belong) (Sarita, & Suleeman, 2017). Therefore, Instagram is the most popular and hedonic social mobile App of the social networks (Bahri-Ammari et al., 2019).

TripAdvisor launched its mobile App in 2010; most of the information posted is generated by its users. Users post reviews, comments and ratings about destinations, hotels, attractions, or any tourism-related product/service. Furthermore, the App offers discussion forums when the travelers can exchange their experiences (Hoo et al., 2016). While various websites provide traveler-generated content, TripAdvisor is the world’s largest travel content community (TripAdvisor.com, 2019), and the most popular travel information App (Yoo et al, 2016). It covers 8.6M lodgings, restaurants and attractions, attracts over 460M unique users and features 859M reviews per year (Statista, 2020). TripAdvisor can be considered a type of social travel network, given that it allows users to add other travelers to their travel maps by connecting to pre-existing advice sources/fellow travelers (Yoon et al., 2019). These linkages between people form real social networks and are designed to save time on finding others who share similar travel tastes. Therefore, TripAdvisor is partly a social network in that it is possible to share information with friends and family, but its primary function is to carry out goal-directed actions (Prideaux & Coghlan, 2010), such as the collection and dissemination of travel-based user-generated content (UGC) and to reduce connection costs and individual effort (Ban & Ramsaran-Fowdar, 2013). In this regard, TripAdvisor is considered a utilitarian social mobile App as it allows its users to achieve their expected outcomes and efficiently complete travel-related tasks.

3.2 Data Collection

Data was collected at the end of 2019; the participants were recruited through an online survey; a market research company, Prolific, assisted in the process. To take part on the study, participants had to be users of the TripAdvisor or Instagram Apps. These Apps were selected because they are well-known multi-purpose social mobile Apps (e.g., message-texting, looking for information, purchasing products/services, sharing photos/videos and

experiences, etc.) and have, respectively, utilitarian and hedonic natures. In a pre-test conducted to determine whether the Apps were utilitarian or hedonic, sixty-seven consumers responded to a 7-point evaluative semantic differential (SD) item scale (1 = "hedonic" and 7 = "utilitarian"), adapted from Eisenbeiss et al. (2015). The participants were provided with these authors' short general definition of hedonic and utilitarian products/services; that is, "Hedonic products/services are primarily consumed for pleasure-oriented reasons. They are associated with providing fun and excitement. Utilitarian products are primarily consumed for functional aspects. They are associated with helping to reach a goal or accomplish a task". The results confirmed that there are significant differences in consumer perceptions of the TripAdvisor and the Instagram social mobile Apps. More particularly, it is found that TripAdvisor is perceived as a utilitarian App, while Instagram is perceived as hedonic. The mean for TripAdvisor ($M = 4.48$, $t = 1.99$, $p < 0.05$) was significantly higher than the central point of the scale ("4"); in turn, the mean for Instagram was significantly lower ($M= 2.95$, $t= -4.26$, $p < 0.01$).

A total of 397 users from 33 countries undertook the survey. The participants could choose either App (TripAdvisor [N=203], Instagram [N=194]) for analysis. Screening questions were posed to ensure that only respondents with previous experience of using the selected Apps participated in the survey. Brief information about the research was provided at the start of the survey, just before the screening questions. The latent variables were measured using multiple-item measurement scales with 7-point Likert-type response formats. The respondents rated them from 1 ("strongly disagree") to 7 ("strongly agree"). The measurement scales were adapted from previous literature. The items about perceived usefulness were adapted from Venkatesh et al. (2003), Amin et al. (2014) and Oghuma et al. (2016); perceived ease of use from Li and Yeh (2010), Venkatesh (2003) and Amin et al. (2014); perceived enjoyment from Nambisan and Baron (2007) and Venkatesh et al. (2012); satisfaction from Bhattacherjee (2001) and Vila and Küster (2011); and, finally, continuance intention to use from Tarute et al. (2017), Bhattacherjee (2001) and Venkatesh et al. (2003). Finally, the user experience was added as control variable considering its potential impact on the use of social networks, as suggested within the extant literature (e.g., Shao et al., 2020). Specifically, participants indicated if their experience with the selected App was less than a year, between 1 and 3 years, or more than three years.

The total sample of the study has been divided into two subsamples: Instagram (representing hedonic Apps) and TripAdvisor (representing utilitarian Apps). As to the hedonic App

sample's characteristics: 57.4% are male and 42.6% female; 88% are between 18 and 39 years, 10% between 40 and 60, and 2% over than 61 years old; as to education level, 37.5% have high school diplomas, 33.2% are university/college graduates, 27.3% have post-graduate qualifications, 1.2% have primary school level and 0.8% remaining prefer not to say. As to usage experience with the selected App, 44.3% of the respondents have more than 3 years, 41.7% have between 1 to 3 years, 13.7% less than a year and 0.3% prefer not to answer. Whereas, the utilitarian App sample is characterized by 51% of males and 49% of females; 83% are between 18 and 39 years, 14.7% between 40 and 60 and 2.3% over than 61 years old; as to education level, 32% have high school diplomas, 37% are university/college graduates, 30% have post-graduate qualifications, and 1% have primary school level. As to usage experience with the selected App, 46% of the respondents have more than 3 years, 42% have between 1 to 3 years, and 12% less than a year. Therefore, both subsamples have relatively similar socio-demographic characteristics.

3.3 Measurement validation

A confirmatory factor analysis was carried out to confirm the dimensional structure of the scales. The Partial Least Squares method was applied, using SMARTPLS 3.0 (Ringle & Sarstedt, 2016). PLS was employed because it is especially useful in situations with limited theoretical information, and when the cause-effect model is exploratory and presents novel relationships unexamined in previous empirical studies (Hair et al., 2017). This is the case in the present study, where an analysis of the continuance intention to use social mobile Apps is made distinguishing between two types of App, utilitarian and hedonic.

To evaluate the dimensional structure of the scales, we examined factor loadings to make an initial assessment of the internal consistency of the constructs. Factor loadings exceeded the 0.7 threshold (Henseler et al., 2009) in their respective constructs (see Table 2). The reliability of the measures was then analyzed using composite reliability (CR). The CR values are shown in Table 2; they exceed the recommended value of 0.7 (Hair et al., 2014). Similarly, Cronbach's α surpassed the recommended 0.7 threshold for all reflective constructs (Nunnally & Bernstein, 1994), as can also be seen in Table 2. Convergent validity was also assessed using average variance extracted (AVE), which should be greater than 0.5 (Fornell & Larcker, 1981). The results shown in Table 2 meet this criterion. Finally, the results shown in Table 3 confirm the discriminant validity of the measures, as the square roots of the AVE of each construct are greater than their corresponding inter-construct correlations (Fornell & Larcker, 1981).

INSERT TABLE 2 ABOUT HERE

INSERT TABLE 3 ABOUT HERE

4. RESULTS

4.1 Structural model

Having confirmed the reliability and validity of the measurement scales and the dimensionality of the constructs, we next evaluate the direct effects proposed in the research model through PLS. The path relationships and the R2 levels of the endogenous latent variables are initially assessed, and a bootstrapping procedure method is conducted to calculate the statistical significance of the path relationships (Temme et al., 2006), using 5000 subsamples.

As depicted in Figure 2, perceived ease of use has a positive influence on both perceived usefulness (β=0.141, $p<0.01$) and perceived enjoyment (β=0.337, $p<0.001$). Thus, both H2a and H2c are supported. Perceived usefulness (β=0.428, $p<0.001$), perceived ease of use (β=0.261, $p<0.001$) and perceived enjoyment (β=0.285, $p<0.001$) also have significant influence on satisfaction; therefore, H1a, H2b and H3a are also supported. In addition, perceived usefulness (β=0.176, $p<0.001$), perceived enjoyment (β=0.133, $p<0.001$) and satisfaction (β=0.540, $p<0.001$) positively influence continuance intention to use, supporting H1b, H3b and H4, respectively. Furthermore, the control variable, user experience has a positive influence on the continuance intention to use (β= 0.142, $p<0.001$).

As to the explanatory power of the research model, we can partially explain the study's main endogenous variables: continuance intention to use (R^2=0.571) and satisfaction (R^2=0.470). According to Chin (1998), these findings suggest that the R^2 values aforementioned are both moderate.

INSERT FIGURE 2 ABOUT HERE

4.2 Multiple group analysis

To test H5-H7 and analyze the moderating influence of App type (utilitarian vs. hedonic), we divide the full sample into two sub-samples: those participants who selected the hedonic App (i.e., Instagram), and those who selected the utilitarian one (i.e., Tripadvisor). Following Keil et al. (2000), we conduct a multi-group PLS analysis to compare the differences

between the path relationships in the two sub-samples. This procedure has been widely adopted in the prior literature (Picon-Berjoyo et al., 2016).

As shown in the Figure 3, the multi-group test results reveal that there are no between-groups differences in terms of the influence of perceived usefulness on satisfaction ($\beta_{\_Hedonic\_App}$=0.285, $\beta_{\_Utilitarian\_App}$=0.262, t=0.202, p>0.1) and continuance intention to use ($\beta_{\_Hedonic\_App}$=0.134, $\beta_{\_Utilitarian\_App}$=0.236, t=1.062, p>0.1), and the influence of perceived enjoyment on continuance intention to use ($\beta_{\_Hedonic\_App}$=0.187, $\beta_{\_Utilitarian\_App}$=0.058, t=1.220, p>0.1). These results, thus, do not support H5a, H5b and H7b. However, the effect of perceived ease of use on satisfaction is stronger for utilitarian Apps than for hedonic Apps ($\beta_{\_Hedonic\_App}$=0.150, $\beta_{\_Utilitarian\_App}$=0.397, t=3.221, p<0.01), supporting H6. The test also reveal that the path coefficient between perceived enjoyment and satisfaction is significantly greater in hedonic Apps than in utilitarian Apps ($\beta_{\_Hedonic\_App}$=0.485, $\beta_{\_Utilitarian\_App}$=0.191, t=3.277, p<0.01), which supports H7a. Although not hypothesized, the influence of perceived ease of use on perceived usefulness is also greater for the utilitarian App, which is consistent with the idea that perceived ease of use is more relevant for utilitarian systems.

INSERT FIGURE 3 ABOUT HERE

5. DISCUSSION

The present study contributes to the general body of knowledge of social mobile Apps by developing and testing a comprehensive research model that explains consumers' continuance intention to use social mobile Apps. The utilitarian-hedonic approach applied in this research highlights the important roles of perceived ease of use, perceived usefulness and perceived enjoyment in explaining satisfaction and continuance intention to use.

Our research model shows good fit, most of the hypotheses are supported and our key variables are largely explained. The results confirmed that satisfaction is the strongest predictor of continuance intention to use social mobile Apps. This is consistent with previous research that also found that satisfaction is the salient factor influencing continuance intention behavior (Osatuyi et al., 2020; Bhattacherjee, 2001). Satisfaction reflects the individual's current experience with the use of a technology (Bhattacherjee & Lin, 2015) and, for satisfied users, if the outcomes derived from using an App are greater than their expectations, they will be motivated to continue using it. In turn, users dissatisfied with an App may stop using it because it does not provide them with sufficient benefits. It is also

found that perceived enjoyment has a significant effect on continuance intention of usage; these results are consistent with various previous studies (e.g., Qin et al., 2016; Yoon et al., 2019). Furthermore, perceived usefulness is also a significant determinant of continuance intention to use social mobile Apps. This is in line with previous literature (e.g., Davis et al., 1989); users may decide to continue using an App simply because it improves their performance when undertaking different tasks. Additionally, user experience positively affects continuance intention to use. The usage experience might reduce uncertainty and help obtain information on technology services (Limayem et al., 2007). This finding is consistent with Amoroso and Lim (2017) and Gefen (2003) studies, which suggested that users with prior experience in IS usage form learning skills that may subsequently promote the continuation intention to use the technology.

We also observe that utilitarian (perceived ease of use and perceived usefulness) factors and a hedonic factor (perceived enjoyment) exert a significant positive influence on users' satisfaction with social mobile Apps. First, this link is especially strong between perceived usefulness and satisfaction; this finding is consistent with previous studies, as perceived usefulness has been found to be the factor that most consistently influences post-acceptance satisfaction (Bhattacherjee, 2001). Second, perceived enjoyment also positively affects satisfaction; the users experience positive feelings when they enjoy their Apps. Various previous studies supported this relationship, such as Qing and Haiying (2021) in the context of branded mobile Apps, and Hsiao et al. (2016) and Thong et al. (2006) in the context of mobile websites. Third, the perceived ease of use significantly impacts satisfaction; this can be explained by the fact that users are more satisfied when the App features are user-friendly and well designed. This finding is in line with Alahuhta et al. (2005), who suggested that user-friendly mobile services lead to user satisfaction in mobile commerce.

Finally, perceived ease of use also has a key influence on both perceived usefulness and perceived enjoyment. On the one hand, it is found that perceived ease of use has a strong positive effect on perceived enjoyment, which suggests that, when users find Apps easy to access, convenient to navigate and well-structured, they will enjoy using it. Several authors confirmed this relationship in other contexts; for example, Bruner and Kumar (2005) showed that the ease of using mobile shopping give users a sense of control that, in turn, induces enhanced feelings of perceived enjoyment and fun. On the other hand, it is also found that, when social mobile Apps are easy to use, this positively affects their users' perceptions of perceived usefulness; that is, users perceive social mobile Apps to be useful when they can

use them effortlessly and easily. Our results in this regard are in line with previous studies on mobile services (e.g., Chong et al., 2011) which found that users perceive services to be useful when they believe they are easy to use.

Previous research have studied the utilitarian nature (e.g., purchase intention in rewards Apps [Baek & Yoon, 2020]) and the hedonic nature (e.g., usage intention in Instagram App [Bahri-Ammari et al., 2019]) of mobile Apps; however, none of them has distinguished between utilitarian and hedonic Apps as it is the case of this study. Thus, the present study contributes to the previous literature by analyzing the predictive relevance of the determinants of continuance intention to use social mobile Apps depending on whether the Apps are utilitarian or hedonic. The multi-group PLS test results reveal that there are no between-groups differences in terms of the influence of perceived enjoyment on continuance intention to use and the influence of perceived usefulness on satisfaction and continuance intention to use. Thus, these relationships do no vary depending on the mobile App type. However, there is a significant difference between the two types of Apps in terms of the effects of perceived enjoyment and perceived ease of use on satisfaction, highlighting that the impact of perceived enjoyment is significantly greater in hedonic Apps. This is in line with a recent study conducted by Lee and Kim (2019), which suggests that hedonic shopping orientation was found to be an antecedent of the continuance intention to use mobile Apps for apparel shopping. Hedonic social mobile Apps are designed to provide their users with videos/pictures, experiences, message-texting, and so on; it seems to be crucial to offer users enjoyable navigation while they use these Apps. This finding reinforces the fact that perceived enjoyment is a vital antecedent of satisfaction toward the use of hedonic systems (e.g., Reinecke et al., 2014; Shiau & Luo, 2013).

The results also confirm that the influence of perceived ease of use on satisfaction is stronger for utilitarian Apps than for hedonic ones. Utilitarian social mobile Apps are designed to undertake specific tasks as effortlessly and quickly as possible, helping their users save time, among other outcomes. The perceived ease of use feature of utilitarian social mobile Apps seems to be very important to their users, probably because this allows them to complete their goal-oriented tasks efficiently. These findings are in line with TAM research, which supports the importance of utilitarian aspects, in particular, perceived ease of use (e.g., Amin et al., 2014; Kim et al., 2019) in technological contexts, such as mobile travel Apps (Choi et al., 2018), e-learning (Abdel-Maksoud, 2018) and e-banking (Liébana- Cabanillas et al., 2013).

5.1 Managerial implications

The study provides guidance to practitioners who want to attract potential users of social mobile Apps, and to maintain enduring relationships with their current users. The results show perceived ease of use is a significant predictor of perceived usefulness, perceived enjoyment and satisfaction. Social mobile marketers should, therefore, understand the importance of the perceived ease of use of social mobile Apps. First, they should provide technical assistance that show their users how to operate the App, and carry out pre-tests to ensure that their target audience is able easily to use them. Second, designers could add innovative features that facilitate the interaction (e.g., the voice recognition technology that allows translating human voice into text form or change it to another language) since this will help users to communicate fast and to interact easily.

This study also reveals that perceived usefulness is an important variable that affects satisfaction and continuance intention to use, particularly for utilitarian social mobile Apps. Thus, service providers must thoroughly understand the needs of their users to ensure that they offer them what they are looking for in order to increase the perceived usefulness of their Apps, and to fulfill the users' expectations. It is important, therefore, that operators include an accurate content in their Apps. Posting reliable information will increase the perceived usefulness of the social mobile App content. For instance, utilitarian Apps could integrate virtual reality or 360 panorama videos in order to offer more accurate and realistic experiences, increasing the perceived usefulness of the information provided in the App. In addition, users have a strong demand for personal/social information disclosure when using social mobile Apps. Therefore, practitioners could implement strategies to develop a sense of identity. For example, high-level interactive functions (e.g., videos, pictures) are able to convey more accurate personal/social information of users; hence, users may perceive similarities between themselves and others and develop the sense of belonging.

Additionally, practitioners should emphasize the potential perceived enjoyment of their Apps, especially those of a hedonic nature, by providing more entertainment elements. These might include, for instance, music, advertising messages with emotional appeal, and visually attractive and fun elements/games. In this kind of Apps, for example, practitioners could take advantage from some innovative technologies such as digital touch. Integrating such technology in social mobile Apps could be a great option to quickly send personalized and funny messages to friends based on hand drawn sketch or sensor read touches; such as virtual kiss or digital touch heartbeat. Moreover, during the Covid-19 outbreak, the filters

technology has emerged in social mobile Apps, being a part of a basic tool for talking about a day during which nothing at all happened. Thus, practitioners could reinforce the augmented reality technology in filters in order to allow users to have more fun and to enjoy the sharing, among others, of their ridiculous or unrecognizable faces. On the other hand, malfunctions, such as anonymous friend requests, may damage the users' perceptions of the App's hedonic features, affecting their perceived enjoyment of the App. Therefore, these malfunctions should be identified and minimized.

In a nutshell, the study's findings help to distill the aggregate effects of the perceived usefulness, perceived ease of use and perceived enjoyment on satisfaction and continuance intention to use social mobile Apps, into separate effects for hedonic and utilitarian Apps. This disaggregation in turn enables practitioners to better align their Apps development.

5.2 Limitations and directions for future research

The present study has limitations that open avenues for future research. First, although the authors shed light on one hedonic and two utilitarian factors that affect the continuance use of social mobile Apps, we examined a limited number of antecedents. The analysis of other important variables, such as flow or social influence, may also help explain satisfaction and continuance intention in this context. Additionally, the study focuses only on continuance intention to use as the key dependent variable. In the future, authors might investigate other post-adoption behaviors (e.g., eWOM). Second, the proposed model measures users' intentions at a single point of time. As Wang and Wang (2010) pointed out, users' perceptions of innovations change over time as they become more experienced. Hence, future research might examine the evolution of continuance intentions as users' experience increases. Similarly, we just focused on one hedonic App (Tripadvisor) and one utilitarian App (Instagram), which may have a different intensity of use. Even though we have analyzed continuance intention to use, a more in-depth analysis of frequency of use may be useful. Third, the respondents are mostly between 18 and 39 years (87.2%); typically, this age group has higher capacity to accept and use advanced technologies. Future studies might analyze possible differences among different generations (Bilgihan et al., 2014). Moreover, the present study does not examine the role of culture in determining continuance intention. Future studies might examine the drivers of continuance intention to use social mobile Apps in different cultures (e.g., Anglo-Saxon, Latin-American, etc.). Finally, this study does not analyze whether or not the selected Apps are perceived by users to be essential, a necessity for them, thing that could be critical for explaining the continuance intention to use these

Apps (Katrodia, 2020; De Araujo et al. 2018). Further research can focus on this users' perception of necessity and evaluate its role in forming individual behavioral intentions.

6. CONCLUSIONS

Social mobile App market is experiencing a great rise (Research and Markets, 2021). However, as the market grows, the competition increases. Therefore, to ensure a return on investment, service operators need to retain users over time and facilitate continuance use. The present study employs a utilitarian-hedonic approach to understand better continuance intention to use social mobile Apps. The results show that continuance intention to use is explained by perceived usefulness, perceived ease of use, perceived enjoyment and satisfaction, which is in line with previous studies in different contexts (Davis, 1989; Bhattacherjee, 2001; Van der Heijden, 2004). However, this study goes further than previous research by analyzing the antecedents of continuance intention differentiating between two App types, utilitarian and hedonic. As Childers et al. (2001) noted, the significance of these variables may vary depending on the environment (hedonic vs. utilitarian). A multi-group analysis show that the effects of perceived ease of use are greater for utilitarian Apps, while the effect of perceived enjoyment on satisfaction is greater for hedonic Apps.

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APPENDIX 1: Information summary of the two social mobile Apps

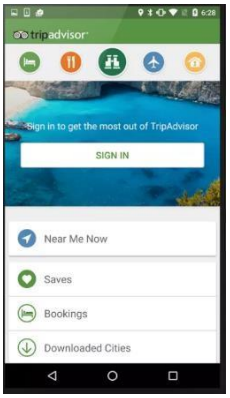
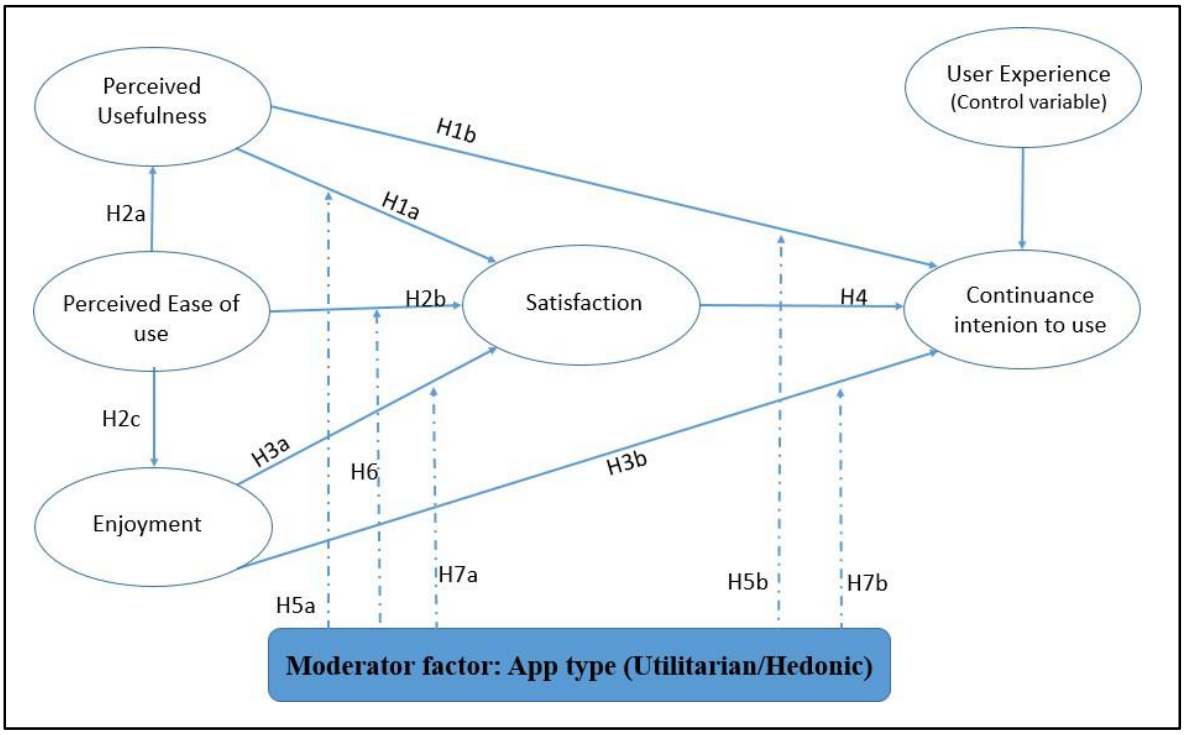
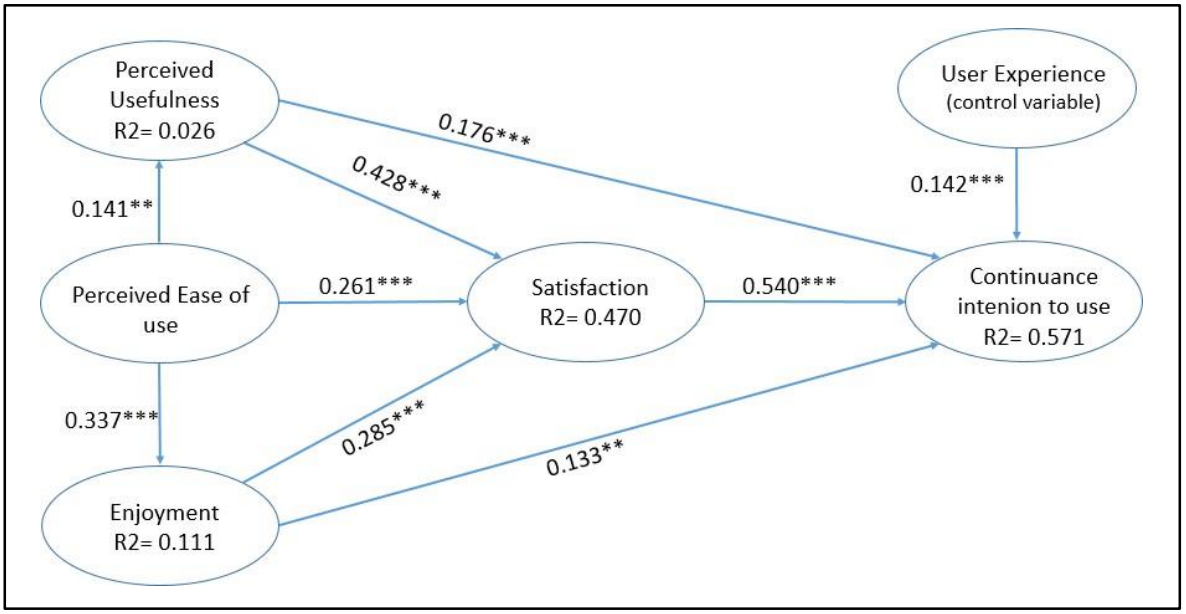
App	Description	Statistics	App page
TripAdvisor	Online travel guide offering free user generated reviews of travel-related content. Also, offer its visitors a range of new features, including friend-adding, targeted content, videos, photos, and articles, as well as recommendations and guides from friends and family. Jumpshot for TripAdvisor Sites, worldwide, 2021	- 1.5M downloads in October 2020 - 505M average monthly visitors - 884M reviews and opinions. Statista, 2021	
Instagram	Photo and video-sharing social networking service where users can edit and upload photos and short videos through a mobile App. Instagram users can like, comment on and bookmark others' posts, as well as send private messages to their friends via the Instagram Direct feature searchcio.techtarget.com	- The 4th-most users of any mobile App - 1.074B active users - 500 million Instagram stories are posted every day. Statista, 2021	

Figure 1. Conceptual research model



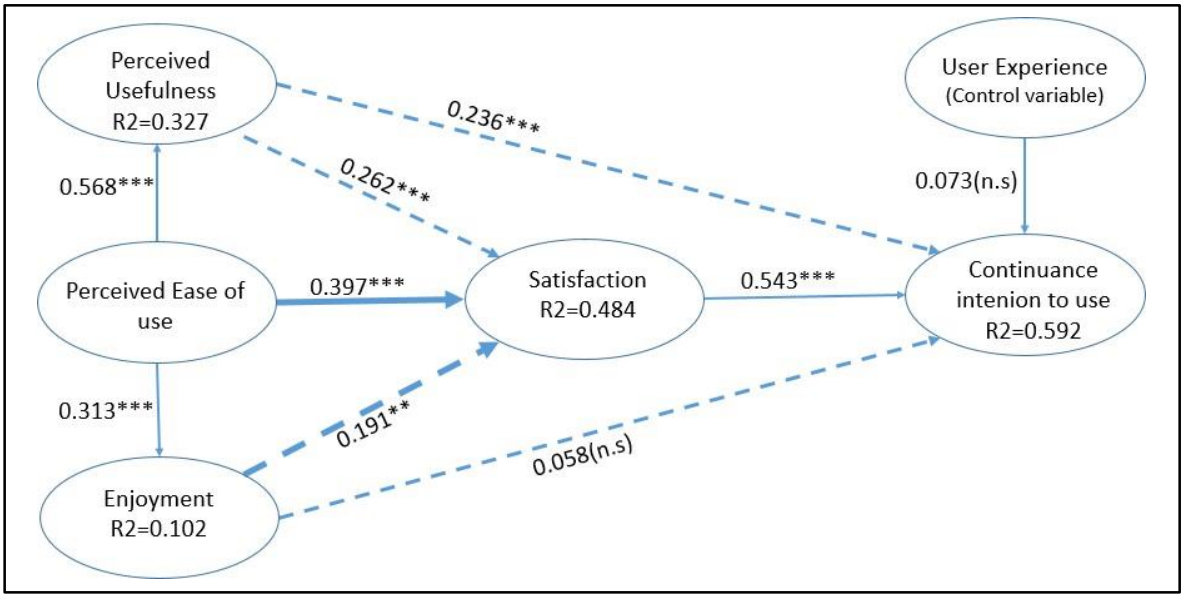
Note: Solid lines represent direct effects; dashed lines represent moderating effects.

Figure 2. Structural analysis of the research model



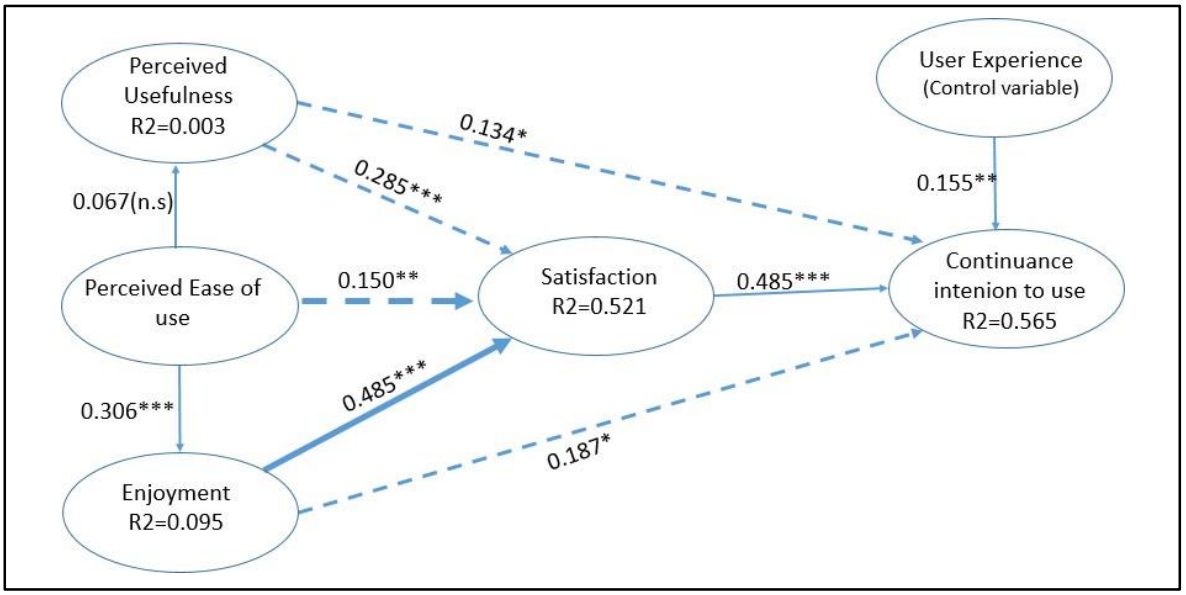
**p<0.01 ***p<0.001

Figure 3. Between-groups analysis results. **Figure 3.1.** Utilitarian App sample (N=203)



**p<0.01 ***p<0.001; n.s: non-significant
Note: Solid lines represent direct effects not affected by moderation hypotheses; Dashed lines represent no significant differences in the moderating effects; Bold solid line represents a significant moderating effect (the direct influence is reinforced); Bold dashed line represents a significant moderating effect (the direct influence is diminished).

Figure 3. Between-groups analysis results. **Figure 3.2.** Hedonic App sample (N= 194)



*p<0.05 **p<0.01 ***p<0.001 n.s: non-significant
Note: Solid lines represent direct effects not affected by moderation hypotheses; Dashed lines represent no significant differences in the moderating effects; Bold solid line represents a significant moderating effect (the direct influence is reinforced); Bold dashed line represents a significant moderating effect (the direct influence is diminished).

Table 1. Previous studies on continuance intention to use mobile Apps

Previous studies	Main objectives, dependent and independent variables	Methodology & Sample	Main findings	Type of mobile App
Hsiao et al. (2016)	Investigate the key determinants of users' continuance intention to use social mobile Apps. Dependent variable: continuance intention to use. Independent variables: utilitarian motives, hedonic motives, social influence, satisfaction and habit.	Methodology: Structural Equation Model (SEM). Sample size: 378 participants.	The continuance usage of social Apps is driven by users' satisfaction, social influence, and hedonic motivations. - The full mediation effects of satisfaction and habit are significant between perceived usefulness and continuance intention to use.	
Lee et al. (2016)	Determine the factors of the continuance intention to use Instagram. Dependent variables: Attitude, satisfaction, and continuance intention to use. Independent variables: perceived usefulness, perceived playfulness. Moderating variable: gender.	Methodology: Structural Equation Modelling (PLS-SEM). Sample size: 150 participants.	- Perceived usefulness and perceived playfulness significantly influence user satisfaction and the continuance intention to use.	
Oghuma et al. (2016)	Determine the factors that influence user continuance intention to use Instant Messaging App: "KakoaTalk App". Dependent variables: satisfaction and	Methodology: Structural Equation Modelling (PLS-SEM). Sample size: 350 participants	-Perceived performance, usefulness, enjoyment and user interface significantly affect user satisfaction and continuance intention to use.	

	continuance intention to use. Independent variables: usefulness, enjoyment, user interface, perceived security, perceived performance and confirmation.		- The effect of perceived security on satisfaction, is not significant.	
Ozturk et al. (2016)	Investigate the antecedents of consumers' continuance intention to use hotel booking Apps. Dependent variable: Continuance intention, utilitarian and hedonic value. Independent variables: Perceived risk, perceived ease of use, subjective norm, innovativeness.	Methodology: Structural Equation Modelling (SEM). AMOS 22.0 Sample size: 396 American users.	- Perceived risk, subjective norm and innovativeness significantly influence utilitarian and hedonic value. - Perceived ease of use affects significantly utilitarian value. - Utilitarian and hedonic value significantly impact users' continued usage intentions.	Not specified
Choi et al. (2018)	Examine the factors that influence the continuance intention to use travel mobile Apps.	Methodology: Focus group interviews. Semi-structured in-depth interviews. Sample: 22 participants	- Functional benefits, ease of use, and enjoyment influence significantly the user satisfaction. - Satisfaction, trust and user's familiarity with the App are the key determinants of the continuance intention to use.	Not specified
Tam et al. (2018)	Explain the main drivers of initial adoption that influence continuance intention to use mobile Apps. Dependent variables: continuance intention to use and satisfaction.	Methodology: Structural Equation Modelling (PLS-SEM). Sample size: 304 participants.	The continuance intention of mobile Apps is driven mainly by satisfaction, habit, performance expectancy, and effort expectancy.	

	Independent variables: confirmation, performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, price value, habit and social influence.			
Ashraf et al. (2019)	Investigate the continuance intention to use the mobile chat App "WeChat". Dependent variable: continuance intention to use and value perceptions (hedonic and utilitarian). Independent variables: personality trait factors (personal innovativeness, face consciousness, need for uniqueness, and ambiguity intolerance).	Methodology: Structural Equation Model (SEM) Sample size: 262 Chinese users.	Personality trait factors (face consciousness and need for uniqueness) are strong predictors for both hedonic and utilitarian value. The hedonic and utilitarian value positively affects continuance intention to use.	Hedonic Apps
Kim et al. (2019)	Determine the effects of mobile App service characteristics on user satisfaction and continuance intention to use. Dependent variables: satisfaction and continuance intention. Independent variables: mobile App service characteristics, confirmation, perceived usefulness and perceived ease of use.	Methodology: Confirmatory Factor Analysis (CFA). Kaiser-Meyer-Olkin (KMO) Test. Sample size: 430 korean participants through online survey and 157 participants by face to face survey.	Mobile App service characteristics positively affect perceived usefulness and perceived ease of use. Perceived usefulness and ease of use positively affect continuance intention to use. -Confirmation positively affects user satisfaction. Satisfaction is a relevant predictor of continuance intention to use.	

Lee & Kim (2019)	Understand the consumer need for mobile App atmospherics among mobile apparel shoppers. Dependent variables: continuance intention and consumer need for mobile App atmospherics. Independent variables: Hedonic shopping orientation, entertainment gratification and mobile irritation.	Methodology: Structural Equation Modelling (SEM). AMOS 22.0 Sample: 206 American mobile shoppers.	- Consumers with a higher need for mobile App atmospherics experience increased entertainment gratification and reduced irritation. - Consumer need for mobile App atmospherics is a main predictor of continuance intention to use Apps for apparel shopping.	Not specified
Qing & Haiying (2021)	Investigate the factors of continuance intention to use branded Apps from the perspective of consumer–brand engagement (CBE). Dependent variable: Continuance intention. Independent variables: Utilitarian motive (perceived informational usefulness), Hedonic motives (social presence and perceived entertainment) and CBE (Cognitive processing, affection and activation).	Methodology: Structural Equation Modelling (SEM). AMOS 22.0. Sample size: 509 Chinese participants.	The continuance intention is predicted by the dimensions of consumer–brand engagement (Cognitive processing, affection and activation). The utilitarian and hedonic motives influence indirectly the continuance intention through consumer–brand engagement.	

Table 2. Validity and reliability

Construct	Item	Factor loadings	Cronbach's α	CR	AVE
Perceived usefulness	PU1. Using the social mobile App enables me to accomplish tasks more quickly.	0.840	0.901	0.925	0.713
	PU2. Using the social mobile App increases my productivity.	0.826			
	PU3. The social mobile App allows me to easily acquire the information I need.	0.839			
	PU4. Using the social mobile App helps me to perform many things more conveniently.	0.855			
	PU5. Overall, the social mobile App is useful.	0.861			
Perceive of use ease	PEOU1. My interaction with the social mobile App is clear and understandable.	0.809	0.846	0.894	0.678
	PEOU2.Using the social mobile App does not require a great mental effort.	0.796			
	PEOU3. Learning to use the social mobile App is easy.	0.808			
	PEOU4. Overall, the social mobile App is easy to use.	0.879			
Enjoyment	ENJ1. I spend enjoyable and relaxing times using this social mobile App.	0.885	0.910	0.937	0.788
	ENJ2. I derive fun and pleasure from using this social mobile App.	0.898			
	ENJ3. The use of the social mobile App entertains and stimulates my mind.	0.864			
	ENJ4. Overall, I derive enjoyment from the social mobile App tasks.	0.898			
User Experience	---	1.000	1.000	1.000	1.000
Satisfaction	SAT1. I think I made the correct decision in using this social mobile App.	0.908	0.949	0.963	0.868
	SAT2. I am satisfied with the social mobile App services.	0.935			
	SAT3. I am content with the social mobile App services.	0.941			
	SAT4. I am pleased with the social mobile App services.	0.942			
Continuance intention to use	IOU1. I intend to continue using this social mobile App in the future.	0.955	0.924	0.952	0.868
	IOU2. I expect to continue using this social mobile App in the future.	0.952			
	IOU3. I will keep using this social mobile App as regularly as I do now.	0.887			

Table 3. Discriminant validity

	CIU	ENJOY	UEX	PEOU	PU	SAT
CIU	**0.932**					
ENJOY	0.475	**0.888**				
UEX	0.222	0.299	**1.000**			
PEOU	0.440	0.337	0.229	**0.823**		
PU	0.472	0.240	-0.171	0.141	**0.844**	
SAT	0.716	0.476	0.130	0.418	0.533	**0.932**

Note: Diagonal elements (bold figures) are the squared roots of the AVEs (the variance shared between the constructs and their measures). Off-diagonal elements are the inter-construct correlations; all these correlations are significant to a level of 0.01.

CIU= Continuance intention to use; **ENJOY**= Enjoyment; **UEX**: User experience; **PEOU**: Perceived ease of use; **PU**: Perceived usefulness; **SAT**: Satisfaction