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Purchasing intention and behavior in the sharing economy: Mediating effects of APP assessments

Fang-Yi Lo[a,*], Tiffany Hui-Kuang Yu[b], Hsin-Hao Chen[b]

[a] Department of International Business, Feng Chia University, Taiwan
[b] Feng Chia University, 100 Wenhua Road, Seatwen, Taichung, Taiwan

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ABSTRACT

In the new era of the sharing economy, firms are setting up Application (APP) service platforms to reach potential consumers and enhance their assessment of how to increase consumers' perceived benefits. This study thus emphasizes that, via APP assessments in the context of the sharing economy, consumers' perceived benefits can drive their purchasing intention and behavior. We examine 464 surveys of users who had previous experiences on various related APPs in the sharing economy and present empirical results supporting that APP assessments play mediator roles among perceived benefits and purchasing intention. The research model shows that relational, attitude, and capability benefits are consumers' three main perceived benefits that influence their purchasing intention. This study thus offers management and marketing implications in the sharing economy by suggesting that firms increase consumers' perceived benefits in order to raise APP assessments, thereby spurring their intention to use the APPs to finalize their final purchase behavior.

1. Introduction

The sharing economy includes the sharing of the creation, production, distribution, trading, and consumption of goods and services by different individuals and organizations (Alchian & Demsetz, 1972). One key element that buttresses the sharing economy is people's excess capacity or resources that they are not using currently, such as a scooter available for product or package delivery, space in a car available for passengers, or a room available at one's home or place of residence. People who have leisure time can perform sharing activities through their own resources. This type of economy usually encompasses car sharing, carpooling, public bicycles, residence exchanging, etc., and industries in this economy are seeing increased discussion nowadays in the economic literature, as they bring about enormous monetary gains (Pearce & Turner, 1990). Many names in sharing economy industries are instantly recognizable, such as Uber, Grab, and Lyft in transportation, UberEats and Foodpanda in delivery service, AirBnB in lodging, and others among various industries. This industrial phenomenon has spawned a new wave of business models around the world (Hamari, Sjöklint, & Ukkonen, 2016).

The rapid flourishment of sharing economies is mostly based on the ever-growing development of digital technology (Bouncken, Ratzmann, Barwinski, & Kraus, 2020). The digital economy impacts sales, services, and online or offline advertisements in today's business field (Van Heerde, Dinner, & Neslin, 2019). The Internet of Things (IoT) has influenced the approach of firms toward innovation and how they create and capture value in everyday business activities (Bresciani, Ferraris, & Del Giudice, 2018). When operating in the IoT era, entrepreneurs should monitor their interaction with consumers and share information among consumers more systematically (Yu, Roy, Quazi, Nguyen, & Han, 2017). Firms and consumers increasingly view sharing as a suitable, profitable alternative to ownership. With the growth in sharing systems accelerated by social media's ability to facilitate online music and movie sharing day by day (Galbreth, Ghosh, & Shor, 2012; Gansky, 2010; Hennig-Thurau, Henning, & Sattler, 2007), online retailing has become an important business model for many entrepreneurs. To quickly increase competitiveness in an online retailing market, IoT entrepreneurs must adopt an online platform and form channels between service providers and consumers (Lo & Campos, 2018). Motivating users to download their online platform and Application (APP) can bring forth great profits in the new sharing economy.

Strong growth has been achieved in different types of industries for online markets, such as finance, medical, and entertainment. According to Jiang, Vosecky, Leung, and Ng (2013), Apple's App Store and Google's Play Store have experienced significant growth in terms of the number of APPs they offer for download. Google states that about

* Corresponding author at: Department of International Business, Feng Chia University, 100 Wenhwa Rd., Seatwen, Taichung, Taiwan. Tel.: +886-4-24517250/ext. 4184.
E-mail addresses: fylo@fcu.edu.tw (F.-Y. Lo), hkyu@mail.fcu.edu.tw (T.H.-K. Yu).

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400,000 APPs are available for its Android platform, and APP users' growth rates are nearly 81% on a yearly basis (Jiang et al., 2013). As many people are spending more time on mobile phones and APPs (Garg & Telang, 2013), mobile applications are becoming popular and many companies are focusing on APP designs that offer win-win situations for both them and consumers (Picoto, Duarte, & Pinto, 2019). Business confidence and an emphasis on Internet channels should be reinforced so that consumers actually experience the rapidness and convenience of IoT (Wu, Zhao, & Tzeng, 2015).

The aim of this paper is to investigate what constitutes consumers' initial motivation to download APPs. The motivation for downloading APPs from online stores should be based on consumers' perceived benefits to use them. Assessing how Internet advertising can push consumers toward various digital markets is rather important (Van Heerde et al., 2019). Another research question arises: To what extent does the sharing economy lead to a change in consumers' mentalities and behavior so as to bring about APP assessments and their subsequent behaviors? Researchers have begun to acknowledge that online and offline advertising impacts sales, consumer counts on social media, and even advertising activities (Van Nierop, Leeflanga, Teerling, & Huizingh, 2011). Our present research primarily focuses on factors that influence consumers' perception of the benefits for using mobile APPs in the sharing economy. The current sharing economy has potential economic market scales for changing consumers' purchasing behaviors through different types of APP service platforms and channels. Therefore, the usage of products, services, and goods will play a more important role in providing more efficient and eco-friendly resources. This study contributes to understanding perceived benefits in the marketing field by presenting how they influence both purchasing intention and behavior in a sharing economy context through APP assessments.

In the following section, this study describes the theoretical foundation for research model and reviews relevant research in order to highlight the gaps in the literature. We then develop the hypotheses and discuss the proposed research model. Next, we explain the design of the empirical study and the hypotheses' testing results. The final section concludes our study by highlighting its major contributions to both academia and practice and also provides directions for future research.

2. Literature review

The goal-framing theory is based on human perception and thinking and their effects on subsequent decision making (Lindenberg & Steg, 2013). This theory covers two substantial model theories: values-beliefs-norms and planned behavior. Based on this research stream, our study adopts the theory of planned behavior (Ajzen & Fishbein, 1980) about human beings' specific behavior based on behavior intention, which is influenced by attitude and subjective norm. We further use three antecedents about consumers' perceived benefits toward purchasing intention and behavior by employing APP assessments as a mediator. After reviewing previous literature and based on the novel empirical context of the sharing economy, we highlight studies on APP assessments so as to fill the gap in this field.

2.1. Fundamental theories and hypotheses' development

2.1.1. Purchasing intention and behavior

Previous studies have explored the differences between intention and behavior on human mentality in the goal-framing theory. The planned behavior theory was developed in order to overcome limitations in the reasoned action theory (Ajzen & Fishbein, 1980; Kruschke, Aguinis, & Joo, 2012). The planned behavior theory shares the premise that behavior is under an individual's will and control and therefore is an immediate determination instead of an attitude. Intentions indicate how hard people are willing to try and how much effort they are planning to execute in order to perform a behavior (Matthews, Eilert, Carlson, & Gentry, 2020). Intention may lead to a follow-up behavior, but here intention can be seen as a necessary but not sufficient condition for the subsequent behavior.

As a new type of perceived benefit in the sharing economy, perceived benefit influences consumer loyalty through APPs. Design of the APPs can change consumer behavior and intentions (Mulcahy, Russell-Bennett, & Iacobucci, 2020). Mobile apps use is associated with consumers' perceived ease of use and perceived usefulness (Veríssimo, 2016). Consumer perceived how well the APPs perform, and then they might more willingly buy a product as their purchasing intention increases. APP owners and providers want to grab consumers' usage time, and so they have to understand and assess expectations and perception. Cause-related marketing is a perception of a feeling attitude that leads substantially to an increase in the purchase intentions and behaviors of consumers (Ferraris, Del Giudice, Grandhi, & Cillo, 2019; Grolleau, Ibanez, & Lavoie, 2016; Pracejus & Olsen, 2004). As more studies about Internet purchasing behavior and its antecedents are done within the framework of the planned behavior theory, we are better able to discover and identify which antecedents are most important, helping us build a theory of Internet purchasing behavior. Therefore, in the context of Internet of Things (IoT), we explore an APP's effect on consumers' purchasing intention or behavior through APP assessments.

2.1.2. APP assessments as a mediator

Hakstian, Scratchley, MacLeod, Tweed, and Siddarth (1997) note that perceived service quality plays a crucial part over the outcome of consumers' cognitive assessment. The focus on service quality has mainly been on cognitive dimensions and on quality factors or attributes linked to service offerings in assessments that define, conceptualize, and measure service quality. However, scant studies examine service experiences and consumers' emotions during consumption. An important assumption in our paper is that service quality can be understood from both cognitive and emotional perspectives. Consumers' perceived assessments are important, as they should determine how well their word of mouth or reputation is concerning this service or product. Furthermore, consumers might conduct repurchases in the near future (Bouman & Van der Wiele, 1992), indicating that the likelihood of such repurchases is due to online display exposure (Manchanda, Dubé, Goh, & Chintagunta, 2006). Consumers could also recommend these services or products through an owner's evaluation, which this study denotes as an assessment.

From previous studies we see that some planned behavior theories have used an independent variable as a mediator to investigate consumers' behavior and intention. For antecedents, Fatima, Mascio, and Johns (2018) propose that relationship benefits have many positive outcomes toward trust or consumer satisfaction. Perceived usefulness and perceived ease of use foster APPs usage (Veríssimo, 2018). In the sharing economy business model, consumers downloading an APP is the first step, which entails them at perceiving the possible benefit of the APP, followed by the real experience of using the APP, which helps finalize the purchasing behavior. Therefore, this research proposes three perceived benefits and APP assessments as a mediator to influence consumers' next action of purchasing intention or behavior.

2.1.3. Relational benefits

This study extends the original assumption of the social exchange theory that individuals are driven by their own self-interest and cost-benefit analysis (Homans, 1961; Roloff, 1981) in order to develop relationships with other variables by adding new knowledge focusing on the impact of relational benefits on consumer satisfaction and trust. Special treatment benefits take the form of relational consumers receiving faster services, monetary savings, or customized additional services, which are the most tangible relational benefits (Fornell, 1992). Relational consumers usually expect to receive special treatment from their relationships with the service provider (Patterson & Smith, 2001). Thus, special treatment benefits are widely provided as part of relationship marketing programs (Morgan, 2000). Ease of use, saving

money, saving time, convenience, 24-h accessibility, availability of different brands of products, and ease of comparison are some benefits that buyers demand when using APPs. At present, most companies use different portals (websites and APPs) to attract consumers as well as develop a digital service platform compared to traditional markets. APP assessment as a mediator is an important characteristic between relational benefits toward purchasing intention or behavior. For instance, consumers with perceived confidence, special treatment, and social feeling based on APP assessments received can present how well those APP features work toward their purchasing behavior or intention. The relational benefits that consumers perceive will increase APP assessments, and higher APP assessments then increase their purchasing intention and behavior. Here, we hypothesize that relational benefits are a major predictor for purchasing intention and behavior throughout the mediator of APP assessments.

H1: APP assessments mediate the relationships among relational benefits and purchasing intention or purchasing behavior.

2.2. Attitude benefits

Consumer attitudes towards mobile online-to-offline (O2O) business have become the key factor in consumers adopting O2O and reveal critical reference values for the completion and upgrade of the O2O model and the development and promotion of O2O business. However, in a macro-analysis of the discourses that surround use value in the current contemporary consumer culture, Baudrillard (1981) indicates that use value, utility, and functionality are part of the reflexive symbolic repertoire of things in the consumer culture. Trend refers to the change in the level of popularity over a period of time. Firms are thus motivated to keep up with trends and to create a new image via merchandise variety and website attractiveness (Christensen, 2013). Novelty-seeking is defined as the degree of consumers' desire to obtain information about new products or services (Manning, Bearden, & Madden, 1995; Moeller & Wittkowski, 2010).

This study thus proposes the term "trend benefits", which refer to the attitude of consumers toward innovative or fashionable products and services. According to Azjen (1985), an attitude toward a behavior is a positive or negative evaluation of performing that behavior. APP assessments as a mediator are important characteristics for a person's attitude benefits toward purchasing behavior or intention. Consumers have perceived utility, saving, and trend feeling that are based on APP assessments, which can lead toward their purchasing behavior or intention. The attitude benefits that consumers perceive will increase their APP assessments, and higher assessments will then raise their purchasing intention and behavior. Therefore, we hypothesize that attitude benefits are a major predictor for purchasing intention and behavior via the mediator of APP assessments.

H2: APP assessments mediate the relationships among attitude benefits and consumers' purchasing intention or purchasing behavior.

2.2.1. Capability benefits

Antecedents with capability-based elements, such as site convenience and content relevance, are associated with trust. In fact, different types of trust have diverse effects on e-word of mouth (e-WOM) (Komiak & Benbasat, 2004, 2006; Ridings, Gefen, & Arinze, 2002; Sun, 2010; Yeh & Choi, 2011; Zhang, Cheung, & Lee, 2014), which is essential in the sharing economy. Antecedents with relationship-affecting elements, such as consumer involvement and web fraud, are associated with distrust. Such increased responsiveness not only improves one's perception of a site's capability, but also soothes and relieves the concerns of consumers through interaction (Lee, Lee, & Tan, 2015). In terms of perceived capability, convenient benefits are in the context of the consumption of products or services, while convenience is manifested as consumers' desire to conserve time or energy when shopping and consuming (McKinney, 2004; Moeller & Wittkowski, 2010; Seiders, Voss, Godfrey, & Grewal, 2007). Moreover, mobile APPs' platform service and online retailer store providers and owners should apply certain measures (e.g. designing various styles of pages for different groups, modularizing and simplifying pages, and repeating important information for convenient operation) to reduce mobile anxiety about offline businesses to help decrease consumer anxiety toward services.

APP assessments as a mediator are an important characteristic between capability benefits and purchasing behavior or intention. For instance, consumers have perceived trust, convenience, and a mindset feeling based on the APP assessments they receive, which can lead toward purchasing behavior or intention. The capability benefits that consumers perceive increase APP assessments, and higher APP assessments then raise consumers' purchasing intention and behavior. Thus, we hypothesize that capability benefits are a major predictor for purchasing intention and behavior via the mediator of APP assessments.

H3: APP assessments mediate the relationships among capability benefits and consumers' purchasing intention or purchasing behavior.

2.2.2. APP assessments toward purchasing intention and behavior

Apple's App Store and Google's Play Store have experienced significant growth in terms of the number of APPs offered for download. These APPs use smartphones' various capabilities, such as current location, call logs, and other information, in order to provide users with beneficial services and attractive features. These functions show an APP's download performance by users. For example, Uber has a huge number of registered users and downloads, due to users' various download intentions around the world. Users can download this APP from popular pages or recommending pages online. Online product reviews make or break a product or company, depending on the positivity or negativity of the reviews from consumers. Companies must be on top of their product reviews to avoid lost sales as well as to promote (not demote) their products (Gelard & Negahdari, 2011). Studying the effects of online product reviews also helps marketers and retailers improve the quality of online product reviews for consumers. Consumers' perceived APP assessments about services and online shopping experiences over online products and service reviews influence their shopping and purchasing intention. Consumers' purchase intentions increase with the quality of good reviews, and the number of online product reviews represents the popularity of a product (Zhang & Tran, 2011). Therefore, we hypothesize that APP assessments have a positive influence on purchasing intention.

H4: APP assessments have a positive influence on purchasing intention.

The phenomenon known as online persuasion uses online product reviews to influence the shopping and purchasing behaviors of consumers. With the use of the Internet, consumers have easy access to online reviews for many products, which are increasingly playing a big part in word-of-mouth advertising (Burger, 2014). According to Lin, Lee, and Horng (2011), online product reviews provide a source of trusted information for consumers, becoming a valuable sales asset. If companies as well as consumers can understand the effects of online product reviews, then in terms of purchasing behavior they will become more knowledgeable in this unfamiliar, yet fast growing phenomenon. Consumers' purchasing behavior depends on average cost and purchasing items. They might use APPs' services via some users' recommendation and word-of-mouth and feedbacks in APP reviews and download ratings in order to obtain information on how well these APPs are before they purchase products and services. Thus, we hypothesize that APP assessments have a positive influence on purchasing

behavior.

H5: APP assessments have a positive influence on purchasing behavior.

Based on the theory of planned behavior (1991; Ajzen, 1985) (e.g., "I intend to do X" or "I will try to do X"), this research proposes that the most immediate and important predictor of behavior is a person's intention to perform it. Intention is a reliable predictor of behavior, but oftentimes a different definition arises between people's intention and behaviors (Sheeran & Abraham, 2003). Some evidence does exist supporting the intention and behavior nexus. For example, Sheeran (2002) reviews health behaviors, indicating that 47% of participants with positive intentions subsequently failed to perform their intended behavior. From previous studies, we want to know further about how purchasing intention influences purchasing behavior such as browsing time and usage frequency. Consequently, we hypothesize purchasing intention toward purchasing behavior.

H6: Purchasing intention has a positive influence on purchasing behavior.

2.3. Research framework

The model identifies consumers' perceived benefits using service/products from the sharing economy's platform APPs and consumers' experiences at accessing APP services, which then influence usage intention and purchasing behavior in the future. An APP's usage is influenced by three factors: relational, attitude, and capability benefits. We present our model in Fig. 1. The framework is applied in 4 different sharing APP platform services, which are transportation, catering, shopping, and lodging services and products, that are frequently used by consumers during their sharing activities. From the framework, APP assessments are a mediator between consumers taking action to buy a service. Therefore, consumers using APP assessments with perceived benefits can promote their purchasing impulses, which denote the behavior or intention that we propose. We also consider that purchasing intention drives consumers' behavior to buy a service or product.

3. Methodology

3.1. Measurements

To test the model of purchasing intention and purchasing behavior process, we employ IBM AMOS to determine whether the above three perceived benefits have specific impacts on APP assessments toward consumers' purchasing intention and purchasing behavior.

3.1.1. Independent variables – relational, attitude, and capability benefits

The measurement items of the independent variables, perceived benefits, come from the previous literature and users' interviews. The instrument is designed on a Likert scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree). We choose this scale, because the Likert scale is the most commonly used one for measuring perception concepts. We originally have 25 questions referenced to previous papers' definitions and survey items (Bock, Zmud, Kim, & Lee, 2005; Gwinner, Gremler, & Bitner, 1998; Moeller & Wittkowski, 2010; Möhlmann, 2015). After interviewing target respondents, we then add 3 items, which are the mindset items of Lamberton and Rose (2012). In summary, relational benefits include confidence benefits, special treatment benefits, and social benefits (Gwinner et al., 1998; Koritos, Koronios, & Stathakopoulos, 2013). The 10 measurement items are a reference from Gwinner et al. (1998). Nine items for attitude benefits include utility benefits (Möhlmann, 2015), trend benefits (Moeller & Wittkowski, 2010), and saving benefits (Bock et al., 2005). Capability benefits include trust benefits (Möhlmann, 2015), convenient benefits (McKinney, 2004; Moeller & Wittkowski, 2010), and mindset benefits (Lamberton & Rose, 2012). Previous studies have defined the benefit factors toward purchase behavior and intention. Therefore, we apply their definition and develop the survey items for our 4 different service platforms to collect the empirical data. By a survey approach, we investigate consumers with perceived benefits toward purchasing behavior and intention via APP assessments. The scale includes 28 items used in measuring the construct, and the scale allows for dimensionality of consumers' perceived benefits.

3.1.2. Mediating variables – APP assessments

APP assessments depend on consumers' evaluations and word-of-mouth, recommendations, and re-purchases from APP service experiences (Hakstian et al., 1997). Given the rising trend in consumer

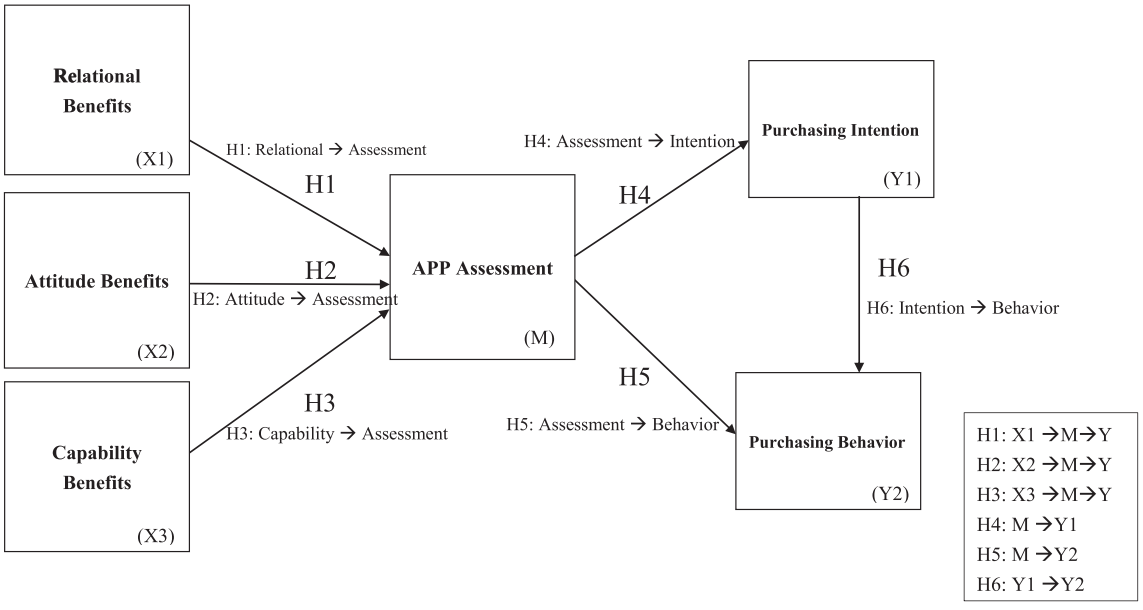

Fig. 1. Research model.

behavior regarding the sharing of information via IoT, the potential influence of word-of-mouth (WOM) on consumer attitudes (Porter & Heppelmann, 2014) should be considered. Through IoT, such WOM is likely to spread faster and become more widespread across multiple channels. Ha and Perks (2005) indicates that consumers will recommend a company to others only when their perceptions of satisfaction with the website are high. Koh and Kim (2004) contend that stickiness results in consumers making repeat purchases of products/services or viewing advertisements on the website. Researchers have also studied website visitors' intentions to revisit a particular website as an indicator of its stickiness (Ranaweera, Bansal, & McDougall, 2008; Suh & Han, 2003). We view website stickiness from a user's perspective and define the term as browsing time on a website in regards to a person's intention to make repeat visits to the site in the future. Several research studies have evaluated the relationship between perceived benefits and planned behavior (e.g., Ajzen, 1985; 1991). We thus design APP assessments on a 5-point Likert scale format. Items are referenced from the previous literature (Ha and Perks (2005); Koh & Kim, 2004; Porter & Heppelmann, 2014). The question items include: (1) for using an APP's feedback WOM, 'How many points do you give to recommend this APP to your friends in the future?'; (2) for recommendation, 'How many people have you recommended to use the APP service?'; (3) for re-purchase, 'How many points do you give to repeat use of this APP service in the future?'; and (4) for evaluation, 'How many stars do you give on the APP's service review?'

3.1.3. Dependent variables – purchasing intention and behavior

The dependent variables we employ are purchasing intention and purchasing behavior based on previous literature (Sheeran & Abraham, 2003) as well as theoretical background in order to develop the behavior and intention scale. Different from independent variables using a subjective perception scale, for dependent variables, purchasing intention and purchasing behavior utilize an objective scale about the fact of respondents' real usage frequency, real browsing time, average cost, and purchasing item over an APP. The questionnaire includes both objective and subjective items to avoid possible common method variances. The question items of purchasing intention include usage frequency and browsing time: 'How often do you use the APP's service every month?' and 'How long do you browse this APP's platform when using its service every time?' The question items of purchasing behavior include average cost and purchasing item: 'How much do you spend on the APP's service every month?' and 'How many items of goods do you buy every time you use this APP's service?'

3.2. Pre-test

This study collected 30 samples from a university spanning December 2018 to February 2019 to process pre-testing analysis. We use a college student sample, because sharing economy APPs mainly focus on young people or college students. This pre-test sample can therefore represent the real population. To verify the appropriateness of the variable measurement items, we utilize SPSS to test 6 variables' corrected item-total correlation and the standardized reliability coefficient (Cronbach's alpha) for the pre-test sample. Nunnally (1978) suggests that an alpha lower than 0.35 should be rejected, that 0.5–0.6 is an acceptable value, and that 0.7–0.9 reveals high reliability. All constructs in this research show acceptable to high reliability. For the variable of relational benefits, its alpha is 0.871, with a total satisfactory item correlation of all items ranging from 0.397 to 0.743. For the variables of attitude benefits and capability benefits, their alphas are 0.883 and 0.893, with a total satisfactory item correlation of all items ranging from 0.382 to 0.775 and from 0.448 to 0.858, respectively. For the variable of APP assessment, its alpha is 0.681 with a low total item correlation value ranging from 0.213 to 0.736. For purchasing intention and behavior variables, their alphas are 0.360 and 0.695. Purchasing intension does not get a really high alpha value, perhaps because this variable only includes two items and a small sample of the pre-test. According to low corrected item-total correlation values over those two items, we decide that those two items could be kept for formal data collection.

3.3. Data collection

This questionnaire survey was implemented from April to July in 2019 to explore customers' perceived benefits on APP assessments toward purchasing intention and purchasing behavior in the sharing economy platform. Target samples are real users who have had previous using experiences over the four categories of APPs in transportation, delivery, lodging, and online shopping services in the context of the sharing economy of service platform APPs. To focus on purchasing intention and purchasing behavior, participants responded to the following question on whether they have ever used these APP platform services. If the answer is "Yes", then they can continue to finish this survey. If the answer is "No", then we remove this sample and delete the data. Another question is about what kind of service platform they have used. For example, if the answer is "Foodpanda", then they will answer about their catering service using experience. The respondents can then answer about their own perceived benefit experiences over this APP. The total number of respondents is 464 (35.8% males, 64.2% females; and 51.5% Taiwanese, 48.5% foreigners) who participated in this study's research investigation. The first part concerns users' experience with an APP; the second part covers the three antecedents about perceived benefits; and the third part is respondents' personal information.

3.4. Reliability

3.4.1. Perceived benefits

We conduct the principal axis factoring score, and the KMO and Bartlett's Test of Sphericity of three variables separately exhibit significant relational benefits (0.924, $p < 0.001$), attitude benefits (0.853, $p < 0.001$), and capability benefits (0.862, $p < 0.001$), which corroborate previous studies. The first factor is relational benefits and includes 10 items with confidence benefits, special treatment benefits, and social benefits. The second factor is attitude benefits and includes 9 items with utility benefits, trend benefits, and saving benefits. The third factor is capability benefits and includes 9 items with trust benefits, convenient benefits, and mindset benefits. The reliability of the instrument is determined using Cronbach's alpha measure for internal consistency, while validity is determined using the construct. Data analysis is carried out using AMOS version 24 with the aid of IBM SPSS. We also use Cronbach's alpha to investigate reliability. Of the three variables, relational benefits (Cronbach's alpha = 0.830), attitude benefits (Cronbach's alpha = 0.833), and capability benefits (Cronbach's alpha = 0.857) all possess good reliability levels (Nunnally, 1978) (see Table 1).

3.4.2. APP assessments

The 4 items mentioned above are combined to form a single scale as an APP assessment. The KMO and Bartlett's Test of Sphericity are significant (0.760, $p < 0.001$), confirming previous studies' recommendation. We conduct the study's factoring with varimax rotation on the pilot study data. The APP assessment's 4 items also have good reliability (Cronbach's alpha = 0.794).

3.4.3. Purchasing intention and behavior

The items form into two scales that are conducted by factoring in varimax rotation. Purchasing behavior and purchasing intention's KMO and Bartlett's Test of Sphericity are significant (0.500, $p < 0.001$) and agree with previous studies' recommendations. Average cost and purchasing item are loaded on purchasing behavior, and browsing time and usage frequency are loaded on purchasing intention. Purchasing

Table 1
Reliability and Validity.

Variable	Items	Cronbach's alpha	CR (Composite reliability)	AVE (Average variance extracted)	Mean	SD (Standard deviation)
Relational benefits	10	0.830	0.861	0.676	3.94	0.549
Attitude benefits	9	0.833	0.856	0.666	4.09	0.547
Capability benefits	9	0.857	0.715	0.675	3.92	0.609
APP assessment	4	0.794	0.941	0.599	3.77	0.759
Purchasing intention	2	0.569	0.752	0.603	2.51	1.038
Purchasing behavior	2	0.507	0.786	0.648	2.25	0.956

behavior (Cronbach's alpha = 0.569) and purchasing intention (Cronbach's alpha = 0.507) both have an acceptance level of reliability.

3.5. Validity

The information in Table 1 suggests that convergent validity of the average variance extracted from all latent variables is higher than 0.5 (Hair, Anderson, Tatham, & Blacke, 1998). Furthermore, the average variance extracted by each of the instruments is greater than the shared variance between the construct and all other variables. Thus, the results indicate discriminant validity is proper as shown in Table 1. Overall, the above analyses support the reliability and validity of our research constructs.

3.6. Descriptive analysis

The sample size is 464. The study structure of the sample (Table 2) is comprised of Chinese users (those from Taiwan and China together account for 51.5%), Southeast Asia users (44.0%), Europe/U.S.A. users (3.7%), and other countries' users (0.8%). The education levels of the respondents are undergraduate (78.7%) and graduate (master) or Ph.D. students (16.6%). We consider the sample to be representative of young and educated people who adopt innovative products such as Uber, Grab, and UberEats and who are aware of trending technology (Treapat, Gheorghiu, & Ochkovskaya, 2018). In addition, younger educated persons are those who can be agents of change in consumption patterns and who can also be advocates. The questionnaire was completed online or by a written survey. All selected respondents have had previous experiences using APP services in one of the 4 different platform services.

According to the sample distribution of the APP categories (Table 3), the number of shopping platform users, car calling users, food delivery service users, and lodging users is 150, 110, 107, and 97, respectively. Most shopping users in the sample utilize Shoppee (71.4%, Samples = 107). Car calling users typically patronize Uber (50%, Samples = 55). Food delivery users like Uber Eats (44.9%, Samples = 48). Lodging service users employ Booking (49.5%, Samples = 48).

Table 2
Sample distribution.

Category	Description	Percentage (%)
Gender	Male	35.8%
	Female	64.2%
Age group	18–20	48.6%
	21–30	45.4%
	31–40	5.4%
	41–50	0.6%
Educational level	Undergraduate	78.7%
	Master/Ph.D.	16.6%
	Other	4.7%
Nationality	Taiwan/China	51.5%
	Southeast Asia	44.0%
	Europe/U.S.A.	3.7%
	Other	0.8%

Table 3
Sample distribution of applications (APPs) in percentage terms.

Platform Service	Application (APP)	Number of samples obtained	Percentage
Transportation APP	Uber	55	50.0%
	Grab	26	23.6%
	55,688	16	14.6%
	Others	13	11.8%
	Total samples of transportation APPs	110	100.0%
Meal Delivery APP	Uber Eats	48	44.9%
	Food Panda	25	23.3%
	Grab Food	12	11.2%
	Others	22	20.4%
	Total samples of meal delivery APPs	107	100.0%
Lodging APP	Booking	48	49.5%
	AirBnB	24	24.7%
	Trivago	17	17.5%
	Others	8	8.3%
	Total samples of lodging APPs	97	100.0%
Shopping APP	Shoppee	107	71.4%
	Amazon	15	10.0%
	Others	28	18.6%
	Total samples of shopping APPs	150	100.0%
Total samples		464	

4. Results and discussions

4.1. Overall model fit

We conduct data analyses using IBM SPSS and AMOS version 24, thus allowing for simultaneous analyses of the measurement and structural models; they also support factor analysis with weight regressions. We investigate the overall model fit indices for the structural path model. GFI and AGFI values are 0.853 and 0.801, which are both higher than 0.8 and reach the acceptable level. The model fits of NFI, CFI, and IFI are 0.720, 0.753, and 0.755, respectively. The $\mathbf{X^2}$ (Chi-Square) value is 677.055, and the Probability Level = 0.000.

The results of the study indicate that the goal framing theory is an appropriate framework in explaining consumers' purchasing intention and purchasing behavior for APP service platforms overall. Following the satisfactory results of the combined model evaluation, we compare the model developed based on the underlying theories of the goal framing theory for model fit on purchasing behavior and purchasing intention. The testing indicates the models provide a good fit to the data and suggests that all three antecedents to APP assessments toward purchasing intention and behavior based on the goal framing theory can be successfully applied to the domain of consumers' purchasing intention and behavior.

Table 4
Individual parameter estimates.

Path	Standardize Estimate	Estimate	S.E.	C.R. (t-Value)	P-value
Relational Benefits → APP Assessment	0.321	0.309	0.061	5.042	0.000***
Attitude Benefits → APP Assessment	0.261	0.327	0.077	4.253	0.000***
Capability Benefits → APP Assessment	0.196	0.239	0.077	3.109	0.002**
APP Assessment → Purchasing Intention	0.379	0.410	0.092	4.444	0.000***
APP Assessment → Purchasing Behavior	−0.191	−0.229	0.191	−1.197	0.231
Purchasing Intention → Purchasing Behavior	1.407	1.565	0.377	4.156	0.000***

Note:
** $p < 0.01$.
*** $p < 0.001$

4.2. Hypotheses' testing

According to the suggestions by Hair, Black, Babin, Anderson, and Tatham (2010), individual parameter estimates can assess the use of partial least squares and SPSS AMOS modeling in marketing research. For the model of purchasing intention and purchasing behavior, 5 out of 6 hypotheses are supported, whereas only 1 is not. Table 4 presents an outline of the results of the model with Standardized Parameter Estimates, Estimates, Standard error (S.E), Critical Ratio (C.R.), and statistical significance level for all the proposed hypotheses.

The purchasing behavior and purchasing intention model shows that perceived relational benefits overwhelming significantly affect APP assessments (H1: Path coefficient = 0.32, p-value < 0.001). Furthermore, perceived attitude benefits also significantly affect APP assessments (H2: Path coefficient = 0.26, p-value < 0.001). Perceived capability benefits also strongly significantly affect APP assessments (H3: Path coefficient = 0.20, p-value < 0.01). Consequently, H1, H2, and H3 are supported.

APP assessments have a significantly positive effect on purchasing intention (H4: Path coefficient = 0.38, p-value < 0.001). However, they do not significantly affect purchasing behavior. In H5, which does not have a significant effect (H5: Path coefficient = −0.19, p-value = 0.231), the effect of APP assessments toward purchasing behavior is not supported in this model. Finally, purchasing intention has a significantly positive influence on purchasing behavior (H6: Path coefficient = 1.41, p-value < 0.001). The effects of relational, attitude, and capability benefits impact APP assessments, and APP assessments influence purchasing intention instead of purchasing behavior. In other words, APP assessments do not directly influence purchasing behavior, whereas purchasing intention plays another mediating effect here. APP assessments influence purchasing intention, and purchasing intention subsequently influences purchasing behavior. H4 and H6 are thus supported in this model. Please see Fig. 2 and Table 4 for the path coefficient of the model.

4.3. Discussions

The results of this study illustrate that consumers use APP platform services due to perceived benefits, which can lead to APP assessments. Specifically, consumers using APP services via APP assessments have purchasing intention rather than purchasing behavior. More specifically, in relational benefits, consumers prefer to use a high assessment level of an APP to gain a service with more confidence, obtain some social benefits with a service provider, or get more special benefits, and thus they are more willing to have greater purchasing intention.

Consumers with attitude benefits, who are likely to focus on service utility, will further evaluate this APP on whether to use it the next time or not. Conversely, they may be more likely to focus on whether the expected utilities are received, and hence they will use this APP service as a trending service platform. Some consumers use an APP service to save more money under a high level of APP assessment toward purchasing intention but not purchasing behavior, which is the same as perceived relational benefits.

Consumers with capability benefits consider that APP services could match their trust in expectations. Therefore, they may give good enough responses on capability benefits. Though they still face a convenient and mindset situation, they remain consistent regardless of their trust, convenience, and mindset even as they give a higher evaluation on APP assessments.

Consumers following high APP assessments do not obtain significant effects toward purchasing behavior, and so the results do not support H5. The reason may be due to their intention to download the APPs or that highly ranked APPs do not directly link to their final purchasing behavior. Many customers just download an APP and seldom open it. In fact, more than 50 APPs may exist on a person's smartphone, but the number of APPs frequently used may be less than a dozen. To increase the purchasing behavior of customers, the downloading of APPs is not enough. Increasing the frequency of consumers using an APP is more important. The usage frequency concerning how many times one uses the APP and spending more time on browsing service and products will increase purchasing intention and further enhance purchasing behavior. Our empirical results from the model also support that APP assessments do influence purchasing intention first and then real purchasing behavior. Purchasing intention plays a full mediation role between APP assessments and purchasing behavior, which is an important and interesting empirical finding.

5. Conclusion

5.1. Conclusions

This study highlights the importance of APPs, because their assessments act as a mediator between consumers' perceived benefits and their purchasing intention and behavior. This research investigates the two dimensions of consumers' purchasing intention and purchasing behavior by using their perceived benefits and APP assessments from the aspects of 3 antecedents in the set-up model. The results illustrate the significance of each antecedent's perceived benefits as determinants of consumers' psychology. Previous studies on the structural model find significantly direct impacts of confidence, social, and special treatment benefits on consumer satisfaction (Dimitriadis & Koritos, 2014; Hennig-Thurau, Gwinner, & Gremler, 2002; Lee, Choi, Kim, & Hyun, 2014). This study first includes relational perceived benefits extended by the original assumption of the social exchange theory in which individuals are driven by their own self-interest and cost-benefit analysis to develop relationships with others (Fatima et al., 2018; Homans, 1961; Roloff, 1981) by adding new knowledge focusing on the impact of relational benefits on consumers' subsequent behavior. Second, this research also collaborates with the literature on attitude and capability perceived benefits (Su, Fan, & Su, 2016). The contribution of this study can guide executives in understanding the importance of online product and service APP assessments. The current research also helps to understand what consumers need from seeing their purchasing intention and behavior from APP assessments. The results of a previous study show one

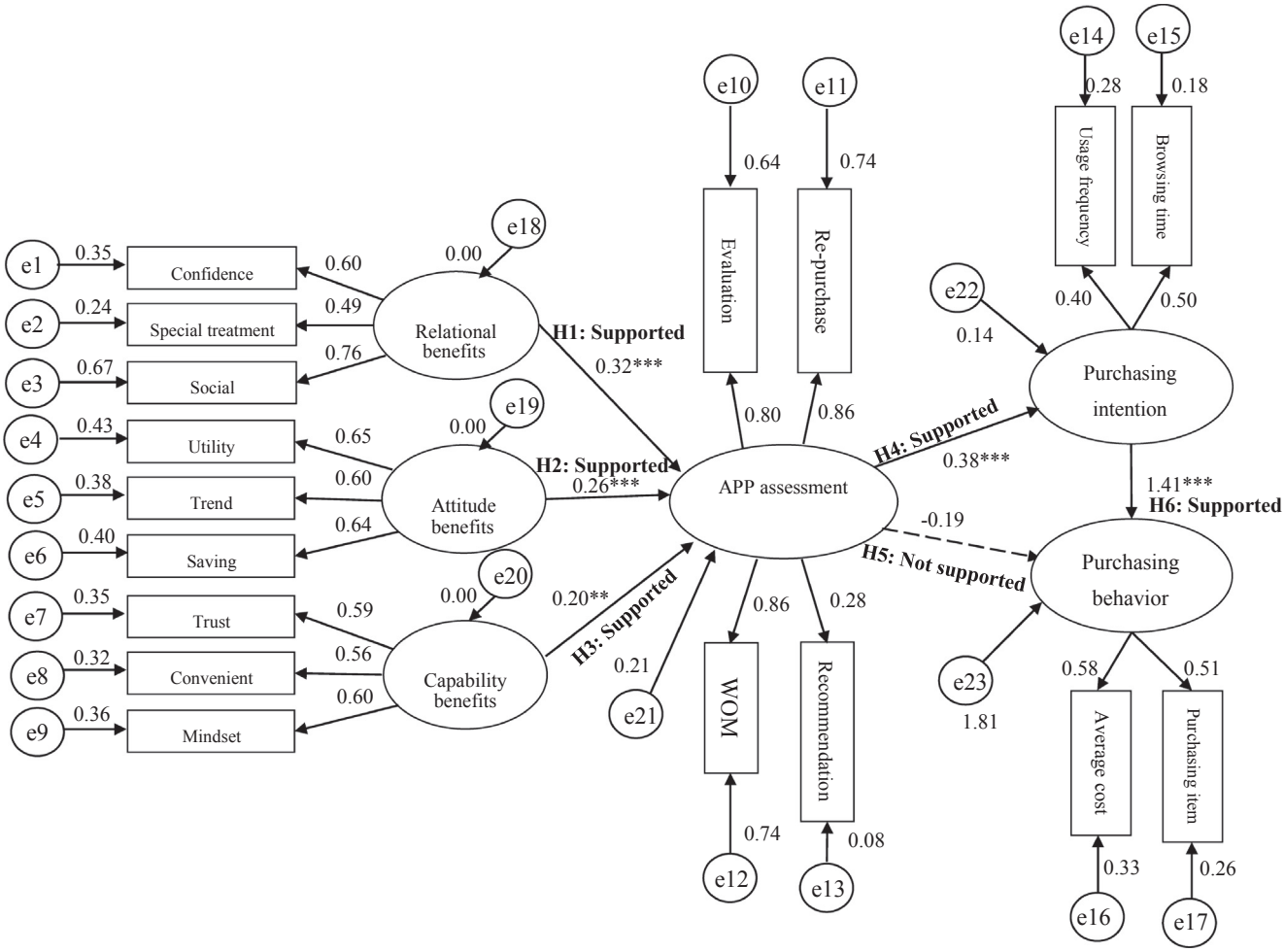

Fig. 2. The path coefficient of the model.

effect to a certain degree on the psychological marketing field and consumer purchasing intention and behavior theory.

5.2. Contributions to theory and practice

For theoretical implications, repeated service contacts increase the familiarity between consumers and the service provider (Patterson & Mattila, 2008), make consumers biased toward assessing service-related criteria, and help them develop a positive attitude toward the service provider. Altering human values is a difficult task, and takes a long time to achieve. However, by making biosphere values more salient, social marketing professionals can significantly influence relevant behavior by changing behavioral intention (De Groot & Steg, 2010). APP assessments are a mediator between perceived benefits and purchasing behaviors and intentions. Hence, if firms want to increase more purchasing intentions and behaviors, then they need to create greater firm values and reputations via consumers evaluating the APP platforms they are willing to use.

The variables for perceived relational, attitude, and capability benefits are found to be strong predictors in the model. Therefore, the results suggest that purchasing intentions in the context of APP assessments are mostly affected by such benefits. Result further show that the perceived capability variables seem to partially explain purchasing behaviors and intentions. According to the theory of planned behavior, the model explains that an individual's performance of a certain behavior is determined by his or her intent to perform that behavior. Intent is itself informed by attitudes toward the behavior, subjective norms about engaging in the behavior, and perceptions about whether the individual will be able to successfully engage in the target behavior. Therefore, according to this study, the perceived relational, attitude, and capability benefits and their ease or difficulty in performing APP assessments toward purchasing intention and behavior are highly critical for consumers in the sharing economy. This study also provides valuable insights for service firms, global marketing strategies, and management practices of international business firms.

For managerial implications, this study provides beneficial discernments for APP-based firms operating under the sharing economy's business models. To learn about the unique nature of offering each type of benefit in order to build trust is very essential (Fatima et al., 2018). First, if firms wish to create a social image of their supremacy in their skills and reliability of their services, then they need to focus on perceived relational benefits by offering timely and reliable services, keeping promises, complying with the professional standard of confidence benefits, offerings consumers special treatments to foster social bonding (which is special treatment benefits), or establishing goodwill friendships with consumers to gain a better firm image (which is social benefits). Special offers, advertising promotions, or service categorizations can encourage consumers to extend their scale, thus reaching valued consumer segments so as to receive more respect and social prestige from the service providers. In addition to the importance of attitudes toward the behavior in question, some studies have found subjective norms to also be important (e.g. Khalifa & Limayem, 2003).

Second, if firms wish to give consumers more opportunities to continue using their service, then they need to focus on perceived attitude benefits by occasionally offering discounts or bonuses (which denote saving benefits), optimizing service platform sites for ease of

usage (which denote utility benefits), or creating novel functions and timely experience opportunities (which denote trend benefits). Furthermore, consumers can become familiar with platforms' functions and services and what they need from providers. Via platform service discounts or bonuses they can save money.

Third, if firms that are increasing capability issues in order to serve consumers raise their purchasing intention and behavior, then they need to focus on their own services' response quality in order to create loyal consumers in the market (which denote trust benefits). For improving websites' convenience for users, firms can simplify their website design and reduce advertising (which denote convenient benefits). To prevent others firms grabbing market share, firms need to maintain their own service quality (which denote mindset benefits).

5.3. Limitations and future directions

We propose several areas for future research that can also help address some of the limitations of the current study given the scope of our empirical analysis. First, our sample typically ranges from ages 18 to 30; although the main population of consumers in the sharing economy is right in this range, the current sample is quite representative. Future research efforts can compare other age segments or specific platform service industries, which could help increase the generalizability of this study's findings in different fields. In the future, researchers may also add the financial e-commerce market and third-party service platforms to investigate more behaviors of perceived benefits and APP assessments. Big data analytics have the power to revolutionize traditional ways of doing business (Rialti, Zollo, Ferraris, & Alon, 2019). Future researchers can focus on this issue as well. Furthermore, researchers could explore different purchasing intention and behavior among different industries. Future researchers may also investigate the behavior of perceived benefits between users and service providers or APPs' service platform markets. Using different research methodologies to compare various countries' APP consumers can help explain consumers' perceived benefits. The current research findings provide insights into perceived benefits for all types of APP consumers under purchasing behavior versus purchasing intention via APP assessments.

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Fang-Yi Lo, Professor of International Business at Feng Chia University, Taiwan. She currently receives Fulbright Senior Research Grant Award and visiting in University of Illinois at Urbana-Champaign U.S.A (2019–2020). Her areas of research interest encompass strategies of international business management and organizations. Her publications have appeared in the *Management International Review, International Marketing Review, Journal of Business Research, Management Decision, Technological Forecasting and Social Change, Personnel Review, International Entrepreneurship and Management Journal, International Journal of Emerging Markets, Health Care Management Review, Chinese Management Studies, Romanian Journal of Economic Forecasting, Economic Research, European Journal of International Management,* and among others.

Tiffany Hui-Kuang Yu, Professor of Public Finance at Feng Chia University, Taiwan. Her areas of research interest encompass Public Economics, Econometrics, Time Series, AI in Finance and Economics and Economics. Her publications have appeared in the *Journal of Business Research, Quality & Quantity, Energy Policy, he Service Industries Journal, Management decision, International Entrepreneurship and Management Journal, and among others.*

Hsin-Hao Chen is a MBA student of department of international business at the Feng Chia University, Taiwan. His research interests include international business, sharing economic marketing, and strategy.