Internet Research

Why People Participate in the Sharing Economy: An Empirical Investigation of Uber

Journal:	*Internet Research*
Manuscript ID	IntR-01-2017-0037.R3
Manuscript Type:	Research Paper
Keywords:	Sharing economy, Access economy, Collaborative consumption, Peer-to-peer ridesharing, Uber, Extended valence framework

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Abstract

Purpose - This study aimed at examining the effects of inhibiting, motivating, and technological factors on users' intention to participate in the sharing economy.

Design/methodology/approach - A self-reported online survey was conducted among Uber users in Hong Kong. A total of 295 valid responses were collected. The research model was empirically tested using the structural equation modeling (SEM) technique.

Findings - The results suggested that perceived risks, perceived benefits, trust in the platform, and perceived platform qualities were significant predictors of users' intention to participate in Uber.

Research implications - This study bridged the research gaps in the sharing economy literature by examining the effects of perceived risks, perceived benefits, and trust in the platform on users' intention to participate in the sharing economy. Moreover, this study enriched the extended valence framework by incorporating perceived platform qualities into the research model, responding to the calls for the inclusion of technological variables in information systems research.

Practical implications - The findings provided practitioners with insights into enhancing users' intention to participate in the sharing economy.

Originality/value - This study presented one of the first attempts to systematically examine the effects of inhibiting, motivating and technological factors on users' intention to participate in the sharing economy.

Keywords*: Sharing economy, access economy, collaborative consumption, peer-to-peer ridesharing, Uber, extended valence framework*

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1 Introduction

The premise of the sharing economy is to unleash the value from underutilized personal commodities (Dillahunt and Malone, 2015). Specifically, the sharing economy in the contemporary context involves coordinating the acquisition and distribution of an underutilized resource for a fee or other forms of monetary compensation (Belk, 2014). Powered by advanced information technologies, the sharing economy presents an emerging trend that is transforming the society and the business world today. Organizations adopting sharing economy business models do not themselves own any commodity but develop platforms to connect providers and users of on-demand services. Fast-growing international corporates, such as Uber and Airbnb, have been proved successful in adopting such innovative business models (PwC, 2015).

Sharing economy services are no longer a niche market but an emerging and profitable one that attracts millions of users and huge investments from businesses (Möhlmann, 2015). They have permeated every aspect of our personal lives, from transportation and accommodation to entertainment. As revealed in a recent market research report on the sharing economy, 44% of US consumers are familiar with the sharing economy and perceive many benefits to it, and 19% of them has engaged in, at least, a sharing economy service (PwC, 2015).

While users have perceived participating in sharing economy services more economical, convenient and enjoyable, potential risks, such as privacy risk and security risk, have deterred them from participating in such services. For instance, participating in the sharing economy often require users to input detailed personal information which may be used for non-intended commercial activities (Dillahunt and Malone, 2015). In addition, there have been notable cases of rape, vandalism, and theft of using different sharing economy services such as Uber and Airbnb (Bleier, 2015). Therefore, it is imperative for sharing economy service providers to understand the effects of perceived benefits and risks on users' intention to participate in such services. Understanding motivators and inhibitors of user intention to participate in sharing economy services allows organizations to prioritize their resources to enhance their services by increasing the potential benefits and reducing the potential risks. For instance, if the perceived benefits are found the most important factor influencing users' intention to participate in peer-to-peer ridesharing services, organizations such as Uber and Lyft are advised to prioritize their effort in providing affordable and enjoyable rides. Furthermore, the success of sharing economy services hinge on the quality of the service platforms, as they connect the providers and users of on-demand services and enable such transactions. As noted by McAlone (2015), "it is natural that apps would play a large part in a company's success or failure (in the sharing economy)." Therefore, besides perceived risks and perceived benefits, it is also imperative to investigate the role of perceived platform qualities in affecting user participation in sharing economy services.

Research on the sharing economy has started to emerge, and a scientific understanding of the phenomenon is still evolving. A literature review showed that studies on the sharing economy can be divided into two categories, organizational-level studies and individual-level studies, with the former being predominant. The majority of organizational-level studies have been conceptual and qualitative in nature and focused on proposing business models of the sharing economy and discussing their applications to different industrial sectors (e.g., Binninger *et al.*, 2015; Choi *et al.*, 2014). However, individual-level studies on the sharing economy have not received commensurate scholarly attention, with a few notable exceptions empirically examining the motivating factors of users' intention to participate in the sharing economy (e.g., Hamari *et al.*, 2015; Möhlmann, 2015). In particular, the effects of inhibiting factors as well as technological factors on users' intention to participate in the sharing economy have been underexplored.

This study bridges these research gaps by systematically examining the effects of perceived benefits, perceived risks, and perceived platform qualities on users' intention to participate in the sharing economy. Studying the effects of inhibiting and technological factors, together with motivating factors, on users' intention to participate in the sharing economy is important for two reasons. First, inhibiting factors, such as potential privacy risk and security risk, involved in using sharing economy services may reduce users' participation intention. Furthermore, the provision of sharing economy services relies heavily on information and internetworking technologies in which platform qualities should have a critical role to play in determining users' intention to participate. Accordingly, this study draws on the extended valence framework (Kim *et al.*, 2009) to systematically examine the inhibiting, motivating, and technological factors affecting users' intention to participate in the sharing economy. The framework is ideal for the current investigation as it accounts for the vital role of perceived risks and benefits in influencing individual intention and is salient to technology-enabled commerce (Kim *et al.*, 2009). In particular, we endeavor to answer the following research question:

> *What are the effects of inhibiting, motivating and technological factors on users' intention to participate in the sharing economy?*

Drawing on the extended valence framework (Kim *et al.*, 2009), we proposed a research model to explain the effects of perceived risks, perceived benefits, trust in the platform, and perceived platform qualities on users' intention to participate in the sharing economy. We empirically tested the research model in a popular sharing economy service, Uber. This study provides significant research and practical implications. On the research front, it contributes to the growing body of knowledge on the sharing economy by revealing the effects of perceived risks, perceived benefits, trust in the platform on users' intention to participate in the sharing economy. On the practical front, this study offers practitioners insights into promoting user participation in the sharing economy.

The paper is organized as follows: we synthesize the extant literature on the sharing economy in the next section. Then, we introduce the theoretical foundation and our research model. In the methodology section, we present an empirical study to validate the relationships postulated in our research model. After discussing the findings, we conclude the paper by highlighting the implications for both research and practice and pointing out potential areas for future research.

2 Literature Review

2.1 The Sharing Economy

The sharing economy in this study refers to the technology-enabled and temporary sharing or renting of personal commodities that involves a fee or other forms of monetary compensation (Botsman, 2013). The sharing economy describes the collaborative consumption that stems from the sharing, exchanging, and renting of goods or services without owning them (Choi *et al.*, 2014). Indeed, the concept of collaborative consumption was coined by Felson and Spaeth (1978) and referred to the circumstances in which individuals consume goods or services jointly. Although collaborative consumption is not a fundamentally new concept, it has only become prevalent recently with the emergence of the sharing economy (Henten and Windekilde, 2016). However, controversies about the terms and definitions of the sharing economy, collaborative consumption and their counterparts, such access economy, have arisen (Botsman and Rogers, 2011). For instance, Belk (2014) proposed a new definition to collaborative consumption as "coordinating the acquisition and distribution of a resource for a fee or other compensation" (p. 1597), similar to the widely accepted definition of sharing economy (e.g., Botsman, 2013). On the other hand, Bardhi and Eckhardt (2012) conflated sharing and collaborative consumption under the notion of access-based consumption by indicating that consumers want access to goods and prefer to pay for such a temporal access instead of buying or owning things. Some researchers have used these terms interchangeably and loosely defined this phenomenon as an Internet-enabled economic model based on sharing, swapping, trading, or renting products by enabling access over ownership (Martin *et al.*, 2015). While the primary objective of this study is to examine how different factors influence users' intention to participate in the sharing economy, clarifying the controversies of terms around sharing economy is out of the scope of the study. Thus, following the extant literature, we adopt the most widely used term, the sharing economy, and refer it to the technology-enabled and temporary sharing or renting of commodities that involve a fee or other forms of monetary compensation (Botsman, 2013). The term sharing economy is used exclusively in this study.

Contemporary sharing economy service platforms, such as Airbnb and Uber, have boosted the sharing economy by overcoming barriers that once restricted it, such as connecting users and lowering transaction costs (Schor and Fitzmaurice, 2015; Stokes *et al.*, 2014). For instance, Airbnb is an online peer-to-peer hospitality service that allows people to lease or rent short-term lodging. Airbnb itself does not own any lodging; it connects providers and users of lodgings and receives service fees from each booking. Similarly, Uber is an online peer-to-peer ridesharing service that allows people to lease or rent a ride. Working under the same sharing economy business model as Airbnb, Uber does not own any car but serves as a broker that connects providers and users of rides and charges commission fees for each ride.

2.2 Research on the Sharing Economy

We conducted a literature review on the sharing economy and found that previous studies can be loosely classified into two types: organizational-level studies and individual-level studies. Organizational-level studies on the sharing economy have two foci. On the one hand, a group of researchers proposed business models of the sharing economy and discussed their applications to different industrial sectors (e.g., Binninger *et al.*, 2015; Choi *et al.*, 2014). For instance, Choi *et al.* (2014) proposed a business model and established operation guidelines for small and medium enterprises wishing to participate in the sharing economy. On the other hand, some researchers investigated the motivations and barriers for adopting the sharing economy business model in addition to its potential effects on traditional business (e.g., Denning, 2014; Nica and Potcovaru, 2015; Pedersen and Netter, 2015). For example, Zervas *et al.* (2016) compared hotel revenues in the Texas market before and after the entry of Airbnb using historical data. They estimated that each 10% increase in Airbnb supply resulted in a 0.35% decrease in monthly hotel room revenue. Henten and Windekilde (2016) suggested that transaction costs were drastically reduced due to the facilitation of Internet-based sharing economy platforms, and such a reduction was an important driver of the proliferation of sharing economy services.

Individual-level studies on the sharing economy remain scant. Among the few existing studies, the majority have explored the motivating factors of participating in the sharing economy. Extrinsic and intrinsic benefits were found to positively influence user participation in the sharing economy. For instance, Ballus-Armet *et al.* (2014) conducted a survey regarding public perception of peer-to-peer ridesharing in the US, and found that convenience and availability, monetary saving, and expanded mobility options were essential motivators for participating in peer-to-peer ridesharing services. Further, Hamari *et al.* (2015) found that economic reward and enjoyment were significant antecedents of user participation in the sharing economy.

To sum, research on the sharing economy is still in its infancy, and two research patterns can be observed. First, most studies were primarily conceptual and qualitative in nature. Consequently, there is a lack of empirical studies on factors influencing user participation in the sharing economy, with a few notable exceptions examining the motivations for such participation (e.g., Hamari *et al.*, 2015; Möhlmann, 2015). Second, past studies have overlooked the effects of inhibiting and technological factors on users' intention to participate in the sharing economy. Specifically, participating in the sharing economy often requires inputting detailed personal information such as contact information, financial information, and location information, which evokes particular concerns about the risk to privacy. In addition, participating in different sharing economy services, such as Uber or Airbnb, often requires users to enter into such transactions with strangers, in which personal security is of particular concerns. Furthermore, sharing economy services are enabled by online platforms, such the mobile application of Uber and the website of Airbnb, that connect service providers and users, coordinate the acquisition and distribution of on-demand services, and facilitate such transactions. The quality of sharing economy platforms thus assumes a critical role in influencing user participation. It is imperative, therefore, to examine the effects of inhibiting and technological factors on user participation in the sharing economy, in addition to the motivating factors.

2.3 The Extended Valence Framework

The extended valence framework from Kim *et al*. (2009) is used as the theoretical foundation of this study. The valence framework has originated from the economics and psychology literature and has been adopted to understand consumer behaviors that incorporate the simultaneous perceptions of risk and benefit (Kim *et al.*, 2009; Peter and Tarpey, 1975). Peter and Tarpey (1975) summarized studies on consumers' purchasing behaviors and articulated the valence framework by noting that perceived risks and perceived benefits are two fundamental aspects of consumer decision-making. Perceived risks characterize any expected negative utility associated with purchasing behaviors that consumers want to minimize; whereas perceived benefits characterize any positive utility related to purchasing behaviors that consumers want to maximize. The valence framework has been regarded as a superior model because it considers both the positive and negative attributes of consumers' decision-making (Peter and Tarpey, 1975). Such a risk-benefit perspective has been extensively adopted to examine consumer behaviors across a wide array of e-commerce contexts (e.g., Chen *et al.*, 2015b; Lee, 2009a, 2009b; Sun *et al.*, 2015; Zhao *et al.*, 2017).

Recognizing the pivotal role of trust in the success of e-commerce, Kim *et al.* (2009) proposed the extended valence framework by integrating trust into the valence framework. The extended valence framework indicates that perceived risks, perceived benefits, and trust have direct effects on consumers' purchase intention. Furthermore, the extended framework suggests that trust alters consumers' perceptions of risks negatively and benefits positively. The extended valence framework has lately received increasing scholarly attention and has been applied to explain online consumer behaviors (e.g., Lin *et al.*, 2014; Lu *et al.*, 2011; Mou *et al.*, 2016). We believe that the extended valence framework provides a robust yet parsimonious theoretical foundation to understand the interplay among perceived risks, perceived benefits, and trust in the context of sharing economy.

3 Research Model and Hypotheses

The research model was built on the extended valence framework (Kim *et al.*, 2009). The framework suggests that user participation in technology-enabled commerce is influenced by perceived risks, perceived benefits, and trust. In this study, we conceptualized perceived risks as privacy risk and security risk, perceived benefits as enjoyment and economic reward, and trust as trust in the platform. Since the provision of sharing economy services hinges on the information and networking technologies, we also incorporated perceived platform qualities, consisting of information quality and system quality, into the proposed research model. Figure 1 depicts the research model.

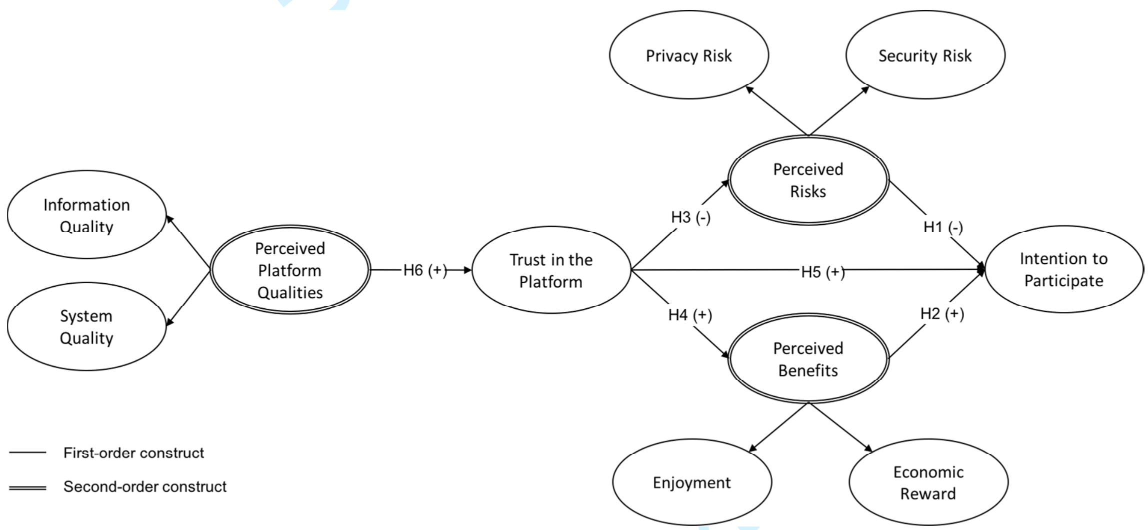

Figure 1. Research model

3.1 Perceived Risks

With accordance to the extended valence framework, perceived risks in this study are defined as consumers' perceptions about the potential and uncertain negative values associated with participating in the sharing economy (Kim *et al.*, 2009). In traditional e-commerce contexts, consumers always experience certain levels of risk because of the uncertainty and uncontrollability inherent in online transactions (Kim *et al.*, 2009). Similarly, growing concerns have been raised about the potential risks of participating in the sharing economy (Gobble, 2015), with the most predominant ones being privacy risk and security risk (Dillahunt and Malone, 2015).

Privacy risk in this study refers to the potential malicious collection and use of personal information by the sharing economy service providers (Gao *et al.*, 2015). Participating in the sharing economy requires the input of detailed personal information, which is a major concern among users (Ballus-Armet *et al.*, 2014). Some Internet-based companies behave opportunistically with the personal information of users to realize additional economic gains, which poses a significant threat to user privacy (Son and Kim, 2008). Privacy risk is a salient inhibitor in a broad range of online behaviors. Specifically, negative relationships between privacy risk and online activities have been found in previous studies (e.g., Hajli and Lin, 2014; Pavlou *et al.*,2007). For instance, users perform risk-benefit analysis when they are requested to provide personal information to organizations (Awad and Krishnan, 2006). Personalized and location-based online services require more detailed private information which discourages users from participating in such e-commerce activities (Xu *et al.*, 2015). Similarly, participation in the sharing economy, such as Uber, requires the input of detailed user personal information, such as demographics, social connections, financial information, and location data, which involve privacy risk and negatively influence users' willingness to participate in the sharing economy (Dillahunt and Malone, 2015).

Security risk in this study refers to the potential harm that a circumstance, condition or event may cause to users (Kalakota and Whinston, 1997). For example, physical injury and property loss are potential security risk resulted from participating in sharing economy services. Security risk has been found a salient inhibitor to various online services, namely online shopping (Lin and Lu, 2015), online social networking (Powell, 2009) and mobile financial services (Tai and Ku, 2013). Security threats are common in contemporary sharing economy services. For instance, cases of rape, vandalism, and theft have been reported from participants using Airbnb, an accommodation sharing service (Bleier, 2015). Furthermore, users of NeighborGoods, an online community for sharing personal goods among neighbors, indicated that they would be more willing to participate in such sharing economy services if the platforms offered a secure location for exchange and sharing, such as in local police stations and fire stations (Dillahunt and Malone, 2015). Users of peer-to-peer ridesharing services have also voiced their concerns about the liability of participating in such services, because their rides may not be properly insured against such security threats (Ballus-Armet *et al.*, 2014). Participation in the sharing economy such as via Airbnb and Uber often requires physical involvement in the transactions. Consequently, security risk serves as another concern that may deter users from participating in the sharing economy. Taken together, we hypothesize that:

H1: Users' perceived risks are negatively related to their intention to participate in the sharing economy.

3.2 Perceived Benefits

Perceived benefits are another important component of the extended valence framework and are defined in this study as users' perceptions about the potential positive values associated with participating in the sharing economy (Kim *et al.*, 2009). Two major types of perceived benefits have been identified as being related to user participation in the sharing economy: intrinsic benefits and extrinsic benefits (Hamari *et al.*, 2015). Intrinsic benefits refer to rewards that arise from within the person who is doing the activity or behavior and tend to be intangible in nature (e.g., enjoyment). Extrinsic benefits are rewards given to the person doing the activity or behavior (i.e., not from within the person) and tend to be tangible in nature (e.g., monetary reward). According to Hamari *et al.* (2015), enjoyment and economic reward are important intrinsic and extrinsic motivators that determine users' intention to participate in the sharing economy. Specifically, the two benefits associate more directly with the performers themselves and subject to less social influence (e.g., reputation relies on how others reflect upon the activity). Consequently, enjoyment and economic reward are selected as intrinsic and extrinsic benefits in the current research model.

Enjoyment here refers to the extent to which participating in the sharing economy is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated (Davis *et al.*, 1992; Kim and Min, 2015; Liu *et al.*, 2015). Enjoyment has been well-regarded as an important intrinsic benefit for participating in the sharing economy (Hamari *et al.*, 2015). For instance, Hwang and Griffiths (2015) contended that participating in sharing economy services is hedonic because it allows users to experience diverse choices, community interactions, and social connections. Specifically, a recent market research from PwC (2015) reported that 63% found participating the sharing economy is more fun than engaging with traditional companies. McArthur (2015) also suggested that participating in accommodation sharing (e.g., Airbnb) appeals to users by providing them with a sense of novelty and authentic experience. Therefore, we expect enjoyment to assume a key role in influencing users' intention to participate in the sharing economy.

While intrinsically motivated users are driven mainly by enjoyment derived from the performing activities, extrinsically motivated users are driven by the expectation of external rewards (e.g., economic reward) (van der Heijden, 2004). Besides enjoyment, the sharing economy has become an appealing alternative to many consumers due to its economic benefits (i.e., cost saving) (Henten and Windekilde, 2016). In particular, the basis of sharing economy lies in sharing assets between individuals instead of owning them (Ballus-Armet *et al.*, 2014). Thus, the sharing economy is generally regarded as a utility-maximizing behavior wherein users replace ownership of goods and services with their lower-cost counterparts (Hamari *et al.*, 2015). Such utility maximization practices are enacted by providing short-term and non-ownership access to personally owned goods that stand idle (Nica and Potcovaru, 2015). Specifically, advanced online platforms connect providers and users of on-demand services, coordinating its acquisition and distribution and leading the sharing economy services to a more significant scale (Nica and Potcovaru, 2015). Consequently, the sharing economy services, such as Uber and Airbnb, can be provided at a much lower price compared to their traditional counterparts, and attract users' participation. In addition, the relationships between economic reward and users' participation in the sharing economy have been corroborated in previous studies (e.g., Hamari *et al.*, 2015; Hars and Ou, 2002). Taken together, we thus hypothesize that:

> *H2: Users' perceived benefits are positively related to their intention to participate in the sharing economy.*

3.3 Trust in the Platform

Trust in the platform in this study is defined as users' subjective perception that the sharing economy platforms will fulfill their transactional obligations as the users understand them (Kim *et al*., 2009). According to the extended valence framework, trust alters users' perceived risks and benefits as well as directly influences their intention in e-commerce purchase decisions (Kim *et al*., 2009).

3.3.1 Trust in the Platform and Perceived Risks

Trust comes to the forefront when consumers act in situations of uncertainty (Kim *et al*., 2009). When consumers have a high level of trust in the service provider, they will perceive a low likelihood for the service provider to violate its transactional obligations (e.g., confidentiality norms or commitments on product quality) (Kim *et al*., 2009). In other words, a high level of trust will mitigate consumers' perceived risks. Although in many cases users account for different risks, they still reveal their personal information and participate in the sharing economy. This can be explained by the fact that users trust the online service platforms (Acquisti and Gross, 2006).

Specifically, trust has been shown to be an effective means to reduce users' perceived risks in online interactions (Metzger, 2004). Previous empirical findings showed that trust served as an important risk-mitigating factor in e-commerce and e-government transactions (Beldad *et al.*, 2012; Cheung and Lee, 2006; Gefen *et al.*, 2003). For instance, Beldad *et al.* (2012) found, in a study with 2,202 Dutch online users, that trust in service platforms reduced users' perception of risks involved in disclosing personal information and participating in online transactions. In other words, users are attentive to service providers' benevolence and integrity when they choose to disclose personal information and participate in such online transactions (McKnight *et al.*, 2002). Applying such a notion to the sharing economy context, we believe that when users perceive the sharing economy service platforms as trustworthy, they will be less sensitive to the perceived risks of participating in the sharing economy. Thus, we hypothesize that:

> *H3: Users' trust in the platform is negatively related to their perceived risks of participating in the sharing economy.*

3.3.2 Trust in the Platform and Perceived Benefits

Prior research on business and e-commerce has suggested a positive relationship between trust and a wide array of benefits (Kim *et al*., 2009). Consumers having a high level of trust in the seller/provider are confident that the seller/provider will fulfill its transactional obligations, granting a high possibility to realize the potential benefits associated with the transactions (Kim *et al*., 2009). In other words, trust in sharing economy platforms should cause users to develop a high level of perceived benefits. For instance, by trusting Uber's commitment to eliminating drivers with poor ratings, users should have more confidence that the next ride will be offered by quality drivers and an enjoyable one. The positive relationship between trust in the service provider and perceived benefits has been corroborated across e-commerce contexts, including mobile commerce (Lin *et al*., 2014), online health information services (Mou *et al*., 2016), and mobile payment (Lu *et al*., 2011). Applying such a notion to the sharing economy context, we believe that when users perceive the sharing economy service platforms trustworthy, they will perceive a higher level of benefits of participating in the sharing economy. Thus, we hypothesize that:

> *H4: Users' trust in the platform is positively related to their perceived benefits of participating in the sharing economy.*

3.3.3 Trust in the Platform and Intention to Participate

Subscribing to the extended valence framework, trust also influences consumers' purchase intention directly (Kim *et al*., 2009). Concurring with the theory of reasoned action, both frameworks indicate that consumers' beliefs precede their purchase intention (Fishbein and Ajzen, 1975; Kim *et al*., 2009). In other words, if consumers have a high level of belief in the seller's ability, benevolence, and integrity, they will be more likely to make a purchase (Kim *et al*., 2009). Consumers in the e-commerce context always concern that the sellers may not adhere to their transactional obligations. Therefore, trust assumes a critical role in determining consumers' intention to make a purchase despite the presence of potential risks (Kim *et al*., 2009). Prior studies have corroborated the direct relationship between trust and consumers' intention to purchase or to use e-commerce services (e.g., Lin *et al*., 2014; Lu *et al*., 2011; Mou *et al*., 2016). Trust reflects users' willingness to take risks to fulfill their needs. Specifically, participating in the sharing economy entails different potential risks, we, therefore, expect that users' trust in the platform plays an important role in determining their intention to participate in the sharing economy. Thus, we hypothesize that:

> *H5: Users' trust in the platform is positively related to their intention to participate in the sharing economy.*

3.4 Perceived Platform Qualities

Platform qualities here refer to users' assessment of the sharing economy platform that meets their needs and reflects the overall excellence of such platform (Aladwani and Palvia, 2002). Platform qualities can be assessed from two dimensions, namely information quality and system quality (Delone and McLean, 2003). Information quality refers to the extent to which users perceive that the output (i.e., information) produced from a platform is of value (Lin, 2007). Information quality can be measured from multiple attributes such as the completeness, accuracy, and timeliness of the information provided (Kuan *et al.*, 2008; Qutaishat, 2013). System quality refers the extent to which users perceive that the processing of information systems itself is with quality (Chen, 2010). Quality systems feature usability, reliability, access convenience, and ease of use, providing an interactive and pleasant user experience and leading to a higher usage (Lin, 2007).

Quality platforms provide users with accurate and timely information, a consistent and easy-to-navigate interface, and a responsive and interactive experience during the transactions, leading to a higher platform usage (Kuan *et al.*, 2008). In the context of e-commerce, information and system qualities are important in the sense that they reflect the service providers' ability, benevolence, and integrity and instill trust on users (Zhou *et al.*, 2010). The positive relationship between platform qualities and trust has been well-validated across a variety of e-commerce contexts (e.g., Chen *et al.*, 2015a; Lim *et al.*, 2009; Muhammad *et al.*, 2014; Zhou, 2014). Specifically, the provision of sharing economy services is enabled by advanced online platforms, such as the Airbnb and Uber platforms, in which information quality and system quality have a critical role to play in influencing users' trust.

That is, if the sharing economy platform can provide users with timely and accurate information as well as can assist users in getting suitable services effectively, it is likely to instill a higher level of users' trust in the platform. Thus, we hypothesize that:

H6: Users' perceived platform qualities are positively related to their trust in the platform.

4 Research Methodology

4.1 Research Design

As shown in a recent research report, peer-to-peer ridesharing is one of the five key sectors of the sharing economy and tops the chart (PwC, 2015). Therefore, we tested the current research model in the context of a popular peer-to-peer ridesharing service, Uber. Specifically, Uber has operated in more than 250 countries and cities worldwide (PwC, 2015). Characterized by its popularity and prevalence, Uber represents an appropriate context for testing the research model of user participation in the sharing economy.

Given the predominantly Internet-savvy target audience of Uber users, we used an online survey to collect data. Invitations to participate in the survey were sent to Uber users in Hong Kong through a marketing research firm. The firm rewarded the participants with points that could be accumulated and exchanged for gifts.

At the beginning of the survey, the respondents were asked to answer a screening question to determine their eligibility to participate in the study. In particular, they were presented with a list of sharing economy activities and asked to indicate the frequency of each activity they had participated in the past six months. Respondents who did not have any experience with Uber were screened out. Next, the respondents were presented with the statements representing the independent, dependent, and control variables and were asked to indicate the extent to which they agreed with the statements. Finally, they were asked to provide their demographic information. To detect potential careless, random, or haphazard responses that might have occurred as a result of the online survey method (Huang *et al.*, 2012), four randomly presented attention check questions were included to identify respondents who were not paying attention to the study. Responses from those who took an exceptionally short time to complete the survey were also discarded to ensure the quality of the data.

The online survey was launched in June 2016 and was conducted for one week. At the end of the data collection period, we collected 319 responses and deleted 24 incomplete responses, yielding a sample of 295 responses for subsequent statistical analyses. Of the 295 respondents, 126 were male, and 169 were female. A majority of the respondents were young adults, with 36.3% aged 29-38, and 26.1% aged 19-28. Regarding monthly income, more than half the respondents are in the category of 10,001 – 30,000 (HKD). Table 1 summarizes the demographic profile of the respondents.

Table 1. The Demographic Profile of the Respondents (n=295)

Demographic Characteristics	**Number of Respondents**	**Percentage (%)**
Gender		
Male	126	42.7
Female	169	57.3
Age		
18 or Below	2	0.7
19-28	77	26.1
29-38	107	36.3
39-48	67	22.7
49-58	38	12.9
59 or Above	4	1.4
Education Level		
High School Diploma	4	1.4
Associate Degree or Certificate	68	23.1
Bachelor's Degree	167	56.6
Master's Degree or above	56	19
Monthly Income (HKD)		
10,000 or Below	43	14.6
10,001 – 30,000	163	55.3
30,001 – 50,000	52	17.6
50,001 – 100,000	31	10.5
100,001 or Above	6	2

4.2 Measures

We derived the measures from prior studies with minor modifications to fit the current research context (see Appendix A). We assessed all of the constructs using perceptual scales with responses measured on a 7-point Likert scale. All constructs were modeled as reflective constructs. Perceived risks, perceived benefits, and perceived platform qualities were modeled as second-order constructs. We used multiple items to assess each construct to ensure construct validity and reliability. As demographic variables are important factors in determining technology usage (Venkatesh *et al.*, 2003), we included gender, age, education level and income as control variables in the research model. We invited an expert panel of IS researchers to assess the face validity of the preliminary measurement items, which were then pretested for comprehensiveness, clarity, and desirable psychometric properties. Other than minor modifications in formatting, no major problems surfaced during the pretest.

5 Data Analysis

5.1 Preliminary Analysis

We conducted three analyses to assess the potential threat of common method bias (Podsakoff *et al*., 2003). First, we conducted Harman's single-factor test using principal component analysis. The first factor accounted for only 38.65% of the variance. In other words, the items in the dataset loaded significantly onto more than one principal component, indicating no single dominant factor (Harman, 1976). Second, we assessed the correlations between the principal constructs and a marker variable, a theoretically unrelated construct (e.g., empathy) (Lindell and Whitney, 2001). As expected, the correlations between the principal constructs and empathy were either non-significant or below 0.2, indicating an absence of systematic bias in the dataset. Furthermore, as suggested by Pavlou *et al.* (2007), we examined the correlation matrix. Extremely high correlations (e.g., r = 0.90) typically indicate the threat of common method bias. However, there were no extremely high correlations in the correlation matrix (see Table 3), and the presence of low correlations (e.g., r = -0.13) indicated that no single factor was influencing all of the constructs.

5.2 Model Testing

We validated the measurement and structural models using partial least squares (PLS) analysis. Specifically, SmartPLS (version 3) was used for validating the measurement and structural models.

Following the two-step analytical approach, we performed a psychometric assessment of the measurement model followed by an evaluation of the structural model. This approach ensured that the conclusions of the structural model were drawn from a set of measures with desirable psychometric properties (Hair *et al.*, 2009; Wixom and Watson, 2001).

5.3 Measurement Model

The test of the measurement model involved estimations of the internal consistency, convergent validity, and discriminant validity of the measurement items.

5.3.1 Reliability and Validity of Constructs

Convergent validity refers to the extent to which the items on a scale are theoretically related. Convergent validity is assessed using three criteria: (1) the composite reliability (CR) should be at least 0.70 (Chin, 1998), (2) the average variance extracted (AVE) should be at least 0.50 (Fornell and Larcker, 1981), and (3) all of the item loadings should exceed 0.70 (Fornell and Larcker, 1981; Hair *et al.*, 2009). As illustrated in Table 2, all of the latent constructs exceed the recommended thresholds, with CR values ranging from 0.89 to 0.95, AVE values ranging from 0.72 to 0.87, and all item loadings exceeding 0.70, suggesting adequate convergent validity. Discriminant validity is the degree to which a scale measures the variable it intends to measure. It is indicated by small correlations between the measure of interest and the measures of other constructs (Fornell and Larcker, 1981), and is demonstrated when the square root of the AVE for each construct is greater than the correlations between it and all of the other constructs. As illustrated in Table 3, the square roots of all of the AVEs were larger than all of the cross-correlations, suggesting adequate discriminant validity. The assessments of the cross-loadings table (Appendix B), with indicator loadings larger than cross-loadings, provided further evidence to the discriminant validity of constructs. Finally, an examination of the heterotrait-monotrait (HTMT) report indicates that the HTMT values range between 0.076 to 0.77, which are well below the threshold of 0.90 (Hair *et al.*, 2017), further suggesting adequate discriminant validity of constructs.

5.4 Structural Model

Figure 2 illustrates all of the PLS analysis results for the structural model, including the path coefficients and their statistical significance. We performed bootstrapping with 5,000 subsamples to test the significance levels of the path coefficients in the proposed research model (Hair *et al.*, 2017). The research model explained 51% of the variance of users' intention to participate in Uber.

Table 2. Psychometric Properties of the Measures

Construct	Item	Loading	t-value	Mean	S.D.
Perceived Benefits					
Economic Reward CR=0.89; AVE=0.72	ECO1	0.85	31.46	4.78	1.23
	ECO2	0.82	23.91	4.63	1.23
	ECO3	0.88	59.54	4.96	1.12
Enjoyment CR=0.91; AVE=0.76	ENJ1	0.85	37.94	4.95	1.09
	ENJ2	0.91	67.09	5.02	1.11
	ENJ3	0.86	27.71	4.97	1.13
Perceived Platform Qualities					
Information Quality CR=0.92; AVE=0.80	INF1	0.88	45.29	5.08	1.11
	INF2	0.92	76.94	5.01	1.14
	INF3	0.88	48.10	4.96	1.11
System Quality CR=0.91; AVE=0.77	SYS1	0.87	39.02	5.02	1.02
	SYS2	0.92	103.34	4.94	1.01
	SYS3	0.84	33.62	5.04	1.11
Perceived Risks					
Privacy Risk CR=0.90; AVE=0.75	PRI1	0.85	9.43	3.70	1.45
	PRI2	0.90	7.17	3.57	1.34
	PRI3	0.85	8.54	4.02	1.36
Security Risk CR=0.93; AVE=0.83	SEC1	0.85	29.39	3.86	1.30
	SEC2	0.95	109.10	3.57	1.32
	SEC3	0.93	75.32	3.60	1.37
Trust in the Platform CR=0.89; AVE=0.73	TRU1	0.90	41.74	4.63	1.04
	TRU2	0.90	51.01	4.81	1.08
	TRU3	0.75	12.40	4.58	1.12
Intention to Participate CR=0.95; AVE=0.87	INT1	0.92	73.56	5.09	1.17
	INT2	0.94	109.39	5.08	1.18
	INT3	0.93	81.44	5.14	1.11

Note. CR: Composite Reliability; AVE: Average Variance Extracted.

Table 3. Inter-Construct Correlation Matrix

	ECO	ENJ	INF	SYS	PRI	SEC	TRU	INT
Economic Reward (ECO)	**0.85**							
Enjoyment (ENJ)	0.49**	**0.87**						
Information Quality (INF)	0.35**	0.54**	**0.89**					
System Quality (SYS)	0.40**	0.57**	0.70**	**0.88**				
Privacy Risk (PRI)	0.01	-0.17**	-0.13*	-0.16**	**0.87**			
Security Risk (SEC)	-0.13*	-0.23**	-0.26**	-0.29**	0.72**	**0.91**		
Trust in the Platform (TRU)	0.47**	0.50**	0.62**	0.60**	-0.19**	-0.31**	**0.86**	
Intention to Participate (INT)	0.54**	0.57**	0.57**	0.60**	-0.17**	-0.31**	0.59**	**0.93**

Note. Items on the diagonal represent the square roots of AVEs. *Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

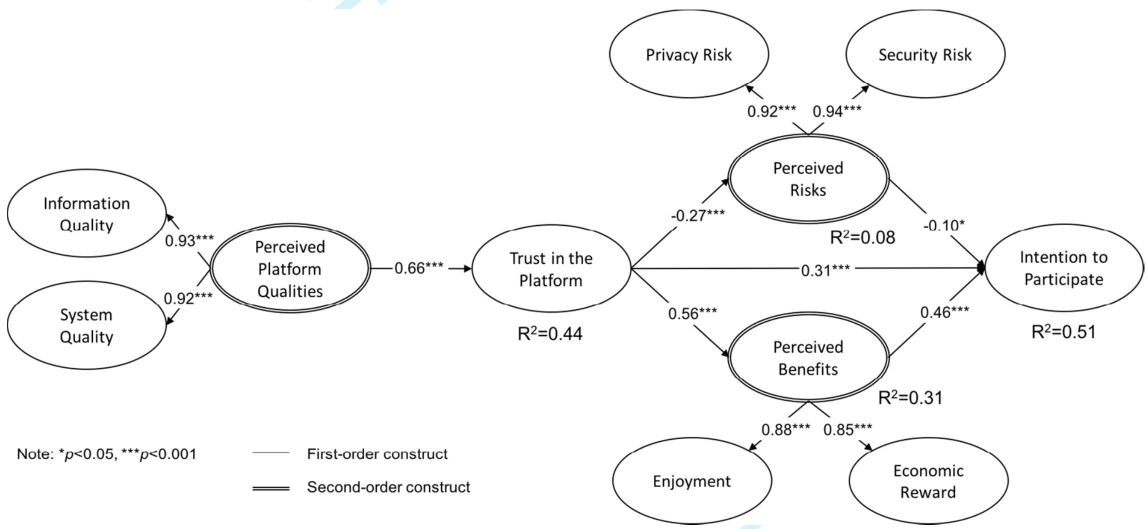

Figure 2. Research Model Results

The obtained path coefficients and levels of significance indicated that all of the hypotheses were supported. Perceived risks exerted a negative and significant effect on users' intention to participate (β = -0.10, $p < 0.05$), supporting hypothesis 1. Perceived benefits exerted a positive and significant effect on users' intention to participate (β = 0.46, $p < 0.001$), supporting hypothesis 2. Trust in the platform exerted a negative and significant effect on perceived risks (β = -0.27, $p < 0.001$) and a positive and significant effect on perceived benefits (β = 0.56, $p < 0.001$), supporting hypotheses 3 and 4 respectively. In addition, trust in the platform exerted a positive and significant effect on users' intention to participate (β = 0.31, $p < 0.001$), supporting hypothesis 5. Perceived platform qualities exerted a positive and significant effect on trust in the platform (β = 0.66, p < 0.001), supporting hypothesis 6. Effect size analysis showed that the f^2 values involved in the relationships between perceived benefits, perceived risks, trust in the platform, and users' intention to participate are 0.182, 0.015, and 0.036, respectively. The result suggested that perceived benefits exert the strongest influence on users' intention to participate in the sharing economy, with a medium effect size. Finally, the demographic variables, i.e., age, gender, education level and income, exhibited no significant effects on users' intention to participate in Uber.

6 DISCUSSION

The sharing economy constitutes an emerging phenomenon and is receiving significant attention from both the public and academic community. This study aims to explain user participation in the sharing economy and to bridge research gaps as identified in the review of the prior literature. While previous studies on the sharing economy have focused on organizational-level issues and have been qualitative in nature, we drew on the extended valence framework and proposed a research model to empirically examine the effects of inhibiting, motivating, and technological factors on users' intention to participate in the sharing economy. We tested the research model with 295 responses collected from users of Uber. All the hypotheses were supported, providing strong statistical evidence that perceived risks, perceived benefits, and trust in the platform are important determinants of users' intention to participate in Uber. In addition, perceived platform qualities instill users' trust in the platform, playing a substantial role in influencing users' intention to participate in the sharing economy.

6.1 Implications for Research

This study advances our understanding of the sharing economy and bridges the research gaps in the sharing economy literature by examining the effects of perceived risks and perceived benefits on users' intention to participate in the sharing economy. Specifically, past studies on the sharing economy have been qualitative in nature or focused on examining motivating factors of users' participation in the sharing economy. Consequently, the role of inhibiting factors in user participation in the sharing economy has not received commensurate scholarly attention. This study presents one of the first attempts to systematically examine the effects of perceived risks and perceived benefits on users' intention to participate in the sharing economy. Drawing on the extended valence framework (Kim *et al.*, 2009), we empirically show that both perceived risks and perceived benefits are crucial in determining users' intention to participate in the sharing economy. The findings add to the growing body of knowledge on the sharing economy and suggest that future investigations should systematically examine inhibiting and motivating forces affecting users' intention to participate in the sharing economy, an area that has largely been overlooked in the previous literature.

Furthermore, researchers have repeatedly called for the inclusion of technological variables in information systems research (Hong *et al.*, 2014). Given that contemporary sharing economy services are enabled by information technologies (e.g., the online platforms of Uber and Airbnb), qualities of such platforms should have a critical role to play in determining user participation. Therefore, we enriched the extended valence framework by incorporating technological variables (i.e., perceived platform qualities) into the research model. The results show that platform qualities have a positive influence on trust in the platform, setting the stage for users' participation in the sharing economy. The findings shed light on the sharing economy research to consider the important role of technological variables in such technology-enabled services.

6.2 Implications for Practice

The results of this study have important implications for practitioners seeking to understand the sharing economy. First, perceived benefits (i.e., enjoyment and economic reward) exert the strongest influence on users' intention to participate in the sharing economy. Accordingly, companies should focus on delivering the message of positive economic reward and enjoyable experience to encourage user participation in sharing economy. In addition, companies should devise appropriate pricing strategies for the sharing economy services provided. For instance, Uber has adopted the surge pricing strategy in which the Uber fare rates automatically increase when the demand exceeds the supply in a specific time and geographical location. Such a surge pricing strategy of Uber has been unfavorable to its users, deterring their participation. In the light of this, companies are suggested to adopt affordable rides that are perceived economic and cost-effective to users.

In addition, perceived platform qualities and trust in the platform have been found to be important factors in previous e-commerce literature (Beldad *et al.*, 2012; Cheung and Lee, 2006; Gefen *et al.*, 2003). Consistent with previous empirical findings, our results indicated that trust in the platform significantly reduces users' perception of risks and enhances users' perception of benefits toward participating in the sharing economy. Furthermore, platform qualities are the salient drivers that instill the perception of trust in the platform, which is considered the core of technology-enabled services. Companies are, therefore, advised to allocate organizational resources in enhancing the qualities of the sharing economy platform, including both information quality and system quality, to build users' trust in the platform. Apart from improving the platform qualities, there are also numbers of plausible means to instill users' trust in sharing economy platforms, such as adopting actionable rating systems and providing social proof (Iyer, 2016). Specifically, Uber adopts actionable rating systems and removes poorly-rated drivers from the service system, continually improving its service and instilling trust in users. Furthermore, Airbnb integrates Facebook information into its platform to show the number of friends a user may have in common with the host of a particular property, enhancing their confidence in the host and encouraging them to participate in such property sharing services.

6.3 Limitations and Directions for Future Research

This study is one of the very few IS studies to consider both the effects of perceived risks, perceived benefits, and perceived platform qualities on user participation in the sharing economy. However, when interpreting the results of this study, a few limitations should be acknowledged and may lead to several avenues for further research.

6.3.1 Generalizability

As this study investigates one of the most popular sharing economy services, i.e., Uber, its results may be generalizable only to peer-to-peer ridesharing. Care must be taken when extrapolating the findings of this study to other sharing economy services, such as peer-to-peer short-term lodging or crowdfunding services. Future research should replicate and validate the research model for other sharing economy services to improve its generalizability. Specifically, context-specific variables should be incorporated to provide a more accurate depiction of the sharing economy service examined. For instance, considering crowdsourcing, project attributes (e.g., duration and difficulty level) and competition situation (e.g., competition intensity and market price) are important determinants of user participation added above the well-studied intrinsic and extrinsic motivations (Shao *et al.*, 2012).

6.3.2 Alternative Theoretical Frameworks

This study makes a pioneering attempt to investigate the sharing economy based on the extended valence framework and to highlight the effects of perceived risks, perceived benefits, trust in the platform, and perceived platform qualities on users' intention to participate in the sharing economy. Although this framework undoubtedly casts new light on the research related to the sharing economy, alternative theoretical lenses should be systematically explored to account for more variance of users' intention to participate in the sharing economy.

6.4 Conclusions

The sharing economy presents an emerging phenomenon and has received significant attention from both the public and the academic community. The findings of this study offer new insights into the research of users' intention to participate in the sharing economy. Specifically, drawing on the extended valence framework, we propose and test a research model to systematically examine the effects of perceived risks, perceived benefits, and trust in the platform on users' intention to participate in the sharing economy. In addition, we incorporate perceived platform qualities into the research model to provide a comprehensive understanding of the phenomenon. The results are expected to encourage further theoretical and empirical exploration of technology-enabled sharing economy services within the IS framework which is well suited to such endeavors.

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Appendix A: Measures

Construct	**Item**
Economic Reward (Kim *et al.*, 2007)	Participating in Uber is cheaper than other options available in the market. I save more money because of participating in Uber. It is possible to get a better discount from the participation in Uber.
Enjoyment (Venkatesh and Morris, 2000)	I find participating in Uber enjoyable. Participating in Uber is pleasant. I have fun of participating in Uber.
Information Quality (Hsu *et al.,* 2012)	The Uber platform produces the most current information. The Uber platform provides me with all the information I need. The information provided by the Uber platform is accurate.
System Quality (Hsu *et al.*, 2012)	The Uber platform enables me to get on to it quickly. The Uber platform performs reliably. The Uber platform makes it easy to get anywhere in the platform.
Privacy Risk (Malhotra *et al.*, 2004)	There are privacy risks to participate in Uber. There is a potential privacy loss participating in Uber. There are a lot of privacy related uncertainties that could not have been foreseen while participating in Uber.
Security Risk (Grewal *et al.*, 2003)	Using Uber would be insecure. Participating in Uber is not safe. Participating in Uber is insecure.
Trust in the Platform (Cheung *et al.*, 2015)	The Uber platform is trustworthy. The Uber platform is honest in its dealings with me. The Uber platform keeps its commitments to its users.
Intention to Participate (Hamari *et al.*, 2015)	Participating in Uber is something I would do. I intend to participate in Uber for my needs. I would participate in Uber.

Appendix B: Cross-Loadings

	ECO	ENJ	INF	SYS	PRI	SEC	TRU	INT
ECO1	**0.85**	0.37	0.24	0.34	-0.04	-0.18	0.36	0.44
ECO2	**0.84**	0.43	0.28	0.32	0.07	-0.08	0.38	0.41
ECO3	**0.86**	0.45	0.36	0.36	0.00	-0.08	0.44	0.53
ENJ1	0.48	**0.84**	0.44	0.49	-0.13	-0.16	0.42	0.53
ENJ2	0.45	**0.91**	0.48	0.54	-0.17	-0.23	0.46	0.54
ENJ3	0.36	**0.87**	0.49	0.47	-0.15	-0.2	0.42	0.43
INF1	0.3	0.49	**0.87**	0.63	-0.05	-0.19	0.53	0.51
INF2	0.31	0.44	**0.92**	0.62	-0.12	-0.24	0.58	0.52
INF3	0.32	0.51	**0.88**	0.63	-0.17	-0.26	0.55	0.5
SYS1	0.34	0.56	0.66	**0.87**	-0.14	-0.24	0.52	0.54
SYS2	0.38	0.52	0.59	**0.92**	-0.17	-0.3	0.53	0.55
SYS3	0.34	0.43	0.61	**0.85**	-0.11	-0.22	0.53	0.49
PRI1	0.04	-0.13	-0.1	-0.09	**0.87**	0.58	-0.13	-0.13
PRI2	-0.02	-0.2	-0.14	-0.19	**0.87**	0.63	-0.18	-0.22
PRI3	0	-0.12	-0.1	-0.13	**0.87**	0.68	-0.18	-0.1
SEC1	-0.09	-0.22	-0.19	-0.25	0.68	**0.86**	-0.28	-0.22
SEC2	-0.14	-0.18	-0.25	-0.28	0.65	**0.94**	-0.31	-0.32
SEC3	-0.12	-0.22	-0.26	-0.25	0.65	**0.92**	-0.26	-0.31
TRU1	0.45	0.48	0.52	0.5	-0.21	-0.31	**0.88**	0.55
TRU2	0.45	0.43	0.55	0.51	-0.17	-0.3	**0.89**	0.52
TRU3	0.29	0.37	0.53	0.52	-0.09	-0.18	**0.8**	0.45
INT1	0.52	0.51	0.51	0.52	-0.14	-0.29	0.54	**0.92**
INT2	0.52	0.53	0.56	0.57	-0.14	-0.3	0.56	**0.94**
INT3	0.48	0.56	0.53	0.59	-0.19	-0.28	0.56	**0.93**