

Anaya, Óscar; De la Vega Hernández, Iván Manuel

## Article

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## Article

# Drivers of the Sharing Economy That Affect Consumers' Usage Behavior: Moderation of Perceived Risk

Óscar Anaya <sup>1,2,\*</sup>  and Iván De La Vega <sup>1,2</sup> <sup>1</sup> CENTRUM Católica Graduate Business School, Lima, Peru<sup>2</sup> Pontificia Universidad Católica del Perú, Lima, Peru

\* Correspondence: oscar.anaya@pucp.edu.pe

**Abstract:** In the access to peer-to-peer sharing of goods and services through a technology platform, which is known as the sharing economy, there is no consensus on the factors that motivate consumers. This study aimed to investigate the moderating effect of perceived risk on consumers' participation in the sharing economy in a developing country. Following a quantitative approach, a survey was conducted among 400 consumers in the Metropolitan Zone of Puebla City, Mexico. Partial least squares structural equation modeling (PLS-SEM) was used to analyze the data. Economic benefits, enjoyment, and trust drove the usage behavior of consumers in the sharing economy. In addition, perceived risk significantly moderated the relationships that usage behavior has with the economic benefits and the feeling of the community. As predicted by social exchange theory, the consumers made choices based on a subjective cost–benefit analysis, showing flexibility in the type and amount of rewards. This study contributes to knowledge about customer behavior in the context of the sharing economy.

**Keywords:** sharing economy; consumer behavior; perceived risk; moderating effect



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## 1. Introduction

In the sharing economy, people exchange access to goods and services through a technological platform (Li and Mu 2021). This business model has spread rapidly and has changed ideas about ownership and consumption (Matharu et al. 2021), impacting multiple markets in recent years (Filippas et al. 2020). Considered in its early days as an emerging phenomenon, it relied on the development of information and communication technology (Wang et al. 2019). It increased in importance due to simultaneous changes, such as the global economic crisis, growing concern regarding sustainable consumption, and changes in consumer behavior (Niezgoda and Kowalska 2020). However, after being a promising phenomenon, it was threatened by the effects of SARS-CoV-2 and its variants, as the companies involved in it lost value and those acting as suppliers received decreased revenue (Hossain 2021).

This virus triggered a crisis that placed an unprecedented burden on healthcare systems worldwide (Kuckertz et al. 2020). Its rapid spread forced governments to mitigate mortality through social distancing, home quarantine, the closure of schools, the isolation of cases (Yoo and Managi 2020), travel restrictions, and the cancellation of public events (Sarkodie and Owusu 2021). As a result of these actions, economic activity was affected (Koch et al. 2020). The flow of consumers was altered, relocating them from businesses that were declared to be nonessential to businesses that were deemed to be essential by the authorities, a situation that negatively impacted multiple sectors, including restaurants and lodging services (Goolsbee and Syverson 2021). Likewise, the mobility of the population was restricted, which resulted in a decrease in private automobile travel, as well as in public transportation and rental cars (Sigala 2020). On the other hand, online businesses benefited due to the closure of physical businesses (Alaimo et al. 2020; Ben

Hassen et al. 2020; Kim 2020). Preventive measures also affected the sharing economy (Batool et al. 2020; Mont et al. 2021). The most representative services of the sharing economy, such as transportation and accommodation services, faced a massive drop in demand (Batool et al. 2020; Foroudi et al. 2021). In contrast, food delivery services have thrived (Campbell et al. 2020; Hossain 2021; Meenakshi 2021; Zhao and Bacao 2020).

Thus, despite the opposition they faced, sharing economy businesses that enjoyed success in the run-up to this crisis have suffered from declining investor support and low demand (Meenakshi 2021). Although their platforms remained active, unaffected by changes in the real world, the physical aspects of transactions, such as leaving home, traveling, and entering someone else's property, were significantly reduced (Gerwe 2021). Therefore, the above results indicate a change in their consumers' behavior. Although consumers' participation in the sharing economy has been the subject of research (Cheah et al. 2020; Dabbous and Tarhini 2019), there is no consensus on the factors that motivate it (Hossain 2020). According to Davlembayeva et al. (2020a), it was not possible to explain all its variability. Consequently, the literature recommends investigating the moderating variables to better understand the drivers (e.g., Gerwe and Silva 2018; Oliveira et al. 2021). In the face of this crisis, according to Gu et al. (2021), the management of perceived risk could be the key to these companies' success and sustainable development. Taking this context into account, the present research responded to the calls from Akbari et al. (2020), Chen et al. (2019), and Yang and Lee (2022) to examine the perceived risk in consumers' participation in the sharing economy.

Considering that research on the sharing economy has focused on urban contexts in advanced economies, the present study also responded to the suggestion by Mont et al. (2020) about investigating perspectives, knowledge, and practices in peripheral areas. This recommendation was also made by Gu et al. (2021). The present research also responded to the suggestion of researching perspectives, knowledge, and practices in peripheral areas; this suggestion was made by Khan et al. (2021), who called for studies in developing countries.

Given the points above, the purpose of this research was to investigate the moderating effect of perceived risk on consumers' participation in the sharing economy in developing countries. The study was conducted on consumers of a car-sharing service in the Metropolitan Zone of Puebla City, Mexico, which ranked second in the LATAM Sharing Economy Index according to The Consumer Choice Center (2021).

To achieve the purpose of the research, the study answered the following question: to what extent does the perceived risk affect the relationships between economic benefits, feelings of community, and trust with consumers' usage of the sharing economy?

## 2. Theoretical Grounding

### 2.1. Sharing Economy

The sharing economy is based on emerging technologies, such as data analytics, mobile connectivity, and cloud computing (Yeganeh 2021). However, it is necessary to specify that these technological advances, decreasing costs, and increasing internet capabilities, while necessary, provide only part of the story (Filippas et al. 2020). The other complementary part of the story is collaborative consumption through sharing, exchanging, and renting resources without owning the goods (Lee and Cha 2021). Based on this contextualization, researchers such as Schlagwein et al. (2020) defined the sharing economy as a model that is facilitated and generated by information technologies, whose objective is to share underutilized goods and services through an intermediary without transferring ownership.

The work of Botsman and Rogers (2010) on collaborative consumption and the research of Belk (2010) on sharing laid the foundations for research into the sharing economy, within which, among other topics, consumer behavior has been studied (e.g., Bardhi and Eckhardt 2012; Boateng et al. 2019; Böcker and Meelen 2017; Hamari et al. 2016; Lamberton and Rose 2012; Möhlmann 2015; Neunhoffer and Teubner 2018; Tussyadiah 2016; Zhu et al. 2017).

To explain this phenomenon, the academic literature gave rise to terms such as “sharing economy, collaborative consumption, collaborative economy, access economy, peer-to-peer economy, platform economy, gig economy, crowd-based capitalism, and on-demand economy” (Gerwe and Silva 2018, p. 71). In the same sense, to conceptualize the phenomenon, Kozlenkova et al. (2021) identified five common elements in definitions of the sharing economy: “(1) access vs. ownership, (2) facilitation by technology/Internet, (3) required financial compensation, (4) providers as peers vs. businesses, and (5) underutilized nature of offerings” (p. 4). Following the same conceptual line, in the present research, the sharing economy was understood as that proposed by Kozlenkova et al. (2021), who defined it as “consumers (peers) granting one another temporary access, through online services, to their underutilized assets for a fee” (p. 4).

## 2.2. Consumer Participation

Models of consumer behavior in the sharing economy identified the factors that motivate or drive consumers to share. In these models, as seen in Table 1, one of the behaviors to be explained is consumer participation (Boateng et al. 2019). Thus, in the present study, the dependent variable of usage behavior was used to investigate participation, congruent with social exchange theory (Davlembayeva et al. 2020b).

**Table 1.** Dependent variables that affect consumers’ behavior in the sharing economy.

Author	Theory	Dependent Variable
Tussyadiah (2016)	Social exchange theory and theory of reasoned action	Satisfaction, P2P hosting behavioral intent
Hamari et al. (2016)	Self-determination theory	Behavioral intent
Barnes and Mattsson (2017)	Theory of reasoned action	Intention to rent and recommend
Lee et al. (2018)	Theory of reasoned action	Intention to participate
Boateng et al. (2019)	Social exchange theory	User usage behavior
Davlembayeva et al. (2020b)	Social exchange theory	Application behavior

## 2.3. Drivers of Participation

In terms of the factors that influence the momentum of engagement, these depend on the context in which the study is conducted. In this sense, two factors show the most robustness in empirical research work: economic benefits (e.g., Boateng et al. 2019; Böcker and Meelen 2017; Hamari et al. 2016; Hawlitschek et al. 2018; Tussyadiah 2016) and trust (e.g., Hawlitschek et al. 2018; Mittendorf 2018; Möhlmann 2015; Yang et al. 2017).

Following this line of thinking, the work of Möhlmann (2015) constituted one of the first investigations into the factors of participation in the sharing economy, starting from an analytical framework that included 10 participation factors: “community belonging, cost savings, environmental impact, familiarity, internet capability, service quality, smartphone capability, trend affinity, trust, and utility” (pp. 194–95). This study used satisfaction with the sharing option and the likelihood of choosing a sharing option again as the dependent variables. From a collaborative consumption perspective, the study found that “the variables cost savings, familiarity, service quality, trust, and utility were found to have a positive effect on the satisfaction with a sharing option” (p. 200). On the other hand, Tussyadiah (2016) investigated the determinants of satisfaction and the intention to use peer-to-peer services specifically in consumers, because previous studies “did not differentiate users into providers and consumers (e.g., hosts and guests)” (p. 71). His investigation focused on the context of hosting platforms, finding six factors: “enjoyment, social benefits, economic benefits, sustainability, amenities, and locational benefits” (p. 74).

Another context that was investigated was the issue of environmental and sustainability concerns as drivers of consumers’ participation in the sharing economy. Gazzola et al. (2018) investigated both extrinsic and intrinsic motivations, “including monetary and nonmonetary drivers (i.e., motivations related to social and economic benefits),

sustainable development and social responsibility concerns, and the level of knowledge and familiarization with the sharing market” (p. 9). Their results support the idea that concern for sustainable development is a factor in consumers’ participation in the sharing economy.

In the case of [Böcker and Meelen \(2017\)](#), they found differences between “(a) sectors of the sharing economy, (b) socio-demographic groups, and (c) users and providers” (p. 28), with mixed results for environmental benefits as a factor of participation. On this point, other studies did not find support for environmental and sustainability issues being factors for consumers’ participation in the sharing economy, and thus, their impact was not clarified and appeared to be context-related (e.g., [Hamari et al. 2016](#); [Lamberton and Rose 2012](#); [Yin et al. 2018](#)). Likewise, other factors varied according to the context in which the studies were carried out. In this sense, those studies carried out on nonprofit platforms stand out as those where environmental and social factors were important. This situation changed when studies were conducted on for-profit platforms, where these factors lost importance (e.g., [Boateng et al. 2019](#); [Lee et al. 2018](#)). Recently, [Kozlenkova et al. \(2021\)](#) explained consumers’ participation in the sharing economy using two drivers: value-based (utilitarian, social, hedonic, and sustainability) and governance-based (trust). The present study used a research model that followed this approach.

### 2.3.1. Economic Benefits

An essential factor in the sharing economy is utilitarian value. This is defined as evaluating a product or service in terms of its functional benefits and costs ([Kozlenkova et al. 2021](#)). Extending this perspective, [Hamari et al. \(2016\)](#) pointed out that the economic benefits generated by consumers’ participation in the sharing economy are because “participating in sharing can also be rational, utility maximizing behavior wherein the consumer replaces exclusive ownership of goods with lower-cost options” (p. 2052). For this reason, [Hawlitschek et al. \(2018\)](#) clarified how the economic benefits are operationalized in the sense that participating in the sharing economy saves consumers money. An extended operationalization in the work of [Gurău and Ranchhod \(2020\)](#) indicated that economic benefits represent an essential motivation for participating in the sharing economy. Finally, it is essential to mention that previous work, such as that of [Möhlmann \(2015\)](#), indicated that cost savings determine consumers’ intention to participate in the sharing economy. [Tussyadiah \(2016\)](#) identified the positive effects of economic benefits, specifically cost savings, on satisfaction and the intention to use sharing economy services.

### 2.3.2. Sense of Community

According to [Kozlenkova et al. \(2021\)](#), social value represents another driver of participation, where social value refers to whether the product or service helps the consumer to maintain interactions with other users. For [Fernandes et al. \(2020\)](#), in addition to individual factors, social factors drive people’s participation in the sharing economy. Furthermore, for [Hu \(2021\)](#), the sharing economy is based on sharing activities among participants, i.e., there is a desire to establish social relationships ([Hossain 2020](#)). In this sense, [Gurău and Ranchhod \(2020\)](#) argued that the sharing economy can significantly increase human solidarity based on mutual collaboration and positive personal relationships. Therefore, according to [Sainaghi \(2020\)](#), social interactions play a transcendental role in consumer participation.

### 2.3.3. Enjoyment

In the formulation of engagement drivers, hedonic value constitutes the evaluation of a product or service in terms of entertainment and emotional value ([Kozlenkova et al. 2021](#)). For [Tussyadiah \(2016\)](#), the enjoyment factor influences satisfaction and intention to participate in the sharing economy, and this author attributed it to consumers seeking to maximize utility. This means having an exciting experience and enjoying high-quality



services. According to [Kim and Jin \(2019\)](#), collaborative consumption is more fun and exciting than the traditional shopping process because it represents a new experience.

#### 2.3.4. Sustainability

The value of sustainability consists of evaluating a product or service in terms of its impact on the environment ([Kozlenkova et al. 2021](#)). According to [Dabbous and Tarhini \(2021, p. 2\)](#), “[the] sharing economy appears to be associated with positive socio-economic and environmental benefits as it is assumed to offer a step towards cost-effective practices and resource-efficient use in societies”. By mobilizing underutilized assets, resources, and capabilities, the sharing economy increases the efficiency of consumption and reduces the consumption of materials based on sole ownership, thus saving resources and reducing pollution ([Gurău and Ranchhod 2020](#)).

#### 2.3.5. Trust

In academic research, the trust variable in the sharing economy has been central to social exchanges, and thus, it is considered to be a driver of consumers’ participation in this context ([Kozlenkova et al. 2021](#)). According to [Gerwe \(2021\)](#), since sharing economy platforms combine digital interactions with physical and real-world transactions, the issue of trust and security has become paramount. As a driver of participation in the sharing economy, trust helps consumers to manage the risks inherent in eliminating external intermediaries who would have to oversee transactions ([Kozlenkova et al. 2021](#)). [Mayer et al. \(1995\)](#), cited by [ter Huurne et al. \(2017\)](#), defined trust as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (p. 486). From this perspective, in the context of the sharing economy, “trust can be defined as the belief that one can successfully complete a transaction without being misled, harmed, or exploited” ([Hawlitschek et al. 2018, p. 151](#)). In the same sense, [Möhlmann \(2015\)](#) pointed out that “trust simultaneously refers to trust in the provider of a collaborative consumption service and to the other consumers one is sharing with” (p. 196). Finally, according to [Mittendorf \(2018\)](#), platform trust refers to a “favorable way, which makes users comfortable to use the web interface and helps them to overcome perceptions of risk and insecurity” (p. 381).

#### 2.3.6. Perceived Risk

According to [Foroudi et al. \(2021\)](#), [Bauer \(1960\)](#) first introduced risk into the field of marketing to indicate that consumers’ behavior encompasses risk and uncertainty, i.e., it refers to a consequence of uncertainty or the perception of the negative effects of a behavior ([Rehman et al. 2020](#)). For [Bonnin \(2020\)](#), perceived risk is the expectation of a loss and the consequences of that loss if it occurs. At this point, it is essential to note that, according to [Matiza and Kruger \(2021\)](#), in the risk perspective, there are two main perspectives of risk: the objective (real) perspective and the subjective (perceived) perspective. Therefore, it can be concluded that perceived risk is different from real risk. Perceived risks influence consumers’ decisions and behavior ([Godovykh et al. 2021](#)). Risks such as physical, functional, psychological, social, financial, and temporal risks are considered to be traditional risks. On the other hand, new emerging risk factors corresponding to those associated with social media are conceptualized as online privacy, precaution, and security risks ([Rehman et al. 2020](#)). In addition, there is the presence of several cognitive, affective, individual, and contextual risk factors, which could interact with each other and exert different effects on consumers’ behavioral intentions ([Godovykh et al. 2021](#)). Therefore, it can be concluded that perceived risk is an essential factor that affects how individuals assess risk, make decisions, and behave ([Li et al. 2020](#)). In terms of the relationship of perceived risk with the sharing economy, according to [Mao et al. \(2020\)](#), the sharing economy presents additional risks because service providers can be diverse, less reputable, and opportunistic. Among the various risks of the sharing

economy, physical risk, which is directly related to security, has received media attention (Yi et al. 2020). In this regard, the role of the moderating variable of perceived risk was tested by Jiang and Lau (2021) in the context of the sharing economy. In their research, Xu (2020) found that more significant concerns about risk can deter consumers from participating in the sharing economy. Similarly, Jain and Mishra (2020) found that perceived risk was negatively associated with the intention to consume within the sharing economy. Given this situation, it should be noted that emotional reactions to hazardous situations often differ from cognitive evaluations of these risks, and when these disagreements occur, emotional responses tend to drive behavior (Zhou et al. 2020).

### 3. Research Model and Hypothesis Development

This study first aimed to answer the question of the extent to which economic benefits are related to the usage behavior of consumers in the sharing economy. In the academic literature, Gurău and Ranchhod (2020) found that economic benefits represent an essential motivation to participate in the sharing economy. For their part, Möhlmann (2015) found in the literature that a determinant of consumers' intention to participate in the sharing economy is cost savings. In addition, Tussyadiah (2016) identified the positive effects of economic benefits, specifically cost savings, on satisfaction and the intention to use sharing economy services. Based on the above, the following hypothesis was proposed:

**H1.** *Economic benefits are positively related to consumers' usage behavior in the sharing economy.*

The next question concerned the extent to which feelings of community were related to the consumers' usage behavior in the sharing economy. This idea started by admitting that in the sharing economy, there is a desire to establish social relationships with the local community, as occurs with ride-sharing (Hossain 2020). In this sense, Gurău and Ranchhod (2020) argued that the sharing economy can significantly increase human solidarity based on mutual collaboration and positive personal relationships. Therefore, according to Sainaghi (2020), social interactions play an important role in consumers' participation. Because of the points above, the following hypothesis was put forward:

**H2.** *Feelings of community are positively related to consumers' usage behavior in the sharing economy.*

We next aimed to answer the question about the extent to which enjoyment is related to consumers' usage behavior in the sharing economy. In the work of Tussyadiah (2016), the enjoyment factor had the most decisive influence on satisfaction and the intention to participate in the sharing economy, and the author attributed this to consumers seeking to maximize their utility, which involves having an exciting experience, saving costs, and enjoying high-quality services. According to Kim and Jin (2019), consumers in the sharing economy find it more fun and exciting than traditional shopping. Considering the points above, we proposed the following hypothesis:

**H3.** *Enjoyment is positively related to consumers' usage behavior in the sharing economy.*

Regarding the extent to which sustainability is related to consumer use behavior in the sharing economy, according to Dabbous and Tarhini (2021), the sharing economy is associated with positive environmental benefits, which impact the efficient use of resources in society. Moreover, by mobilizing underutilized assets, resources, and capabilities, the sharing economy increases consumption efficiency, reduces material consumption based on exclusive property, saves resources, and reduces pollution (Gurău and Ranchhod 2020). Therefore, the following hypothesis was proposed:

**H4.** *Sustainability is positively related to consumers' usage behavior in the sharing economy.*

We also considered the extent to which trust is related to consumers' usage behavior in the sharing economy. In academic research on the sharing economy, the variable of trust has been crucial for social exchanges and is considered a driver of consumers' participation in this context (Kozlenkova et al. 2021). According to Gerwe (2021), the question of trust and security became critical with the presence of sharing economy platforms and the

combination of digital interactions with real-world and physical transactions. As a driver of participation in the sharing economy, trust helps consumers to manage the risks that are inherent in eliminating external intermediaries who would have to oversee transactions (Kozlenkova et al. 2021). With the above points in mind, the following hypothesis was proposed:

**H5.** *Trust is positively related to consumers' usage behavior in the sharing economy.*

Regarding the extent to which perceived risk is related to consumers' usage behavior in the sharing economy, according to Xu (2020), more significant concern about risk may deter consumers from participating in the sharing economy. Thus, perceived risk is negatively related to the intention to consume within the sharing economy (Jain and Mishra 2020). Considering the points above, we proposed the following hypothesis:

**H6.** *Perceived risk is negatively related to consumers' usage behavior in the sharing economy.*

Lastly, we addressed the degree to which perceived risk affects the influence of economic benefits on the usage behavior of consumers in the sharing economy. Considering that economic value is affected by perceived risk, as was the case during the period of the crisis caused by SARS-CoV-2 and its variants (Wang et al. 2021), thus, according to Joo et al. (2021), the perceived risk changes the perceptions of economic benefits among participants in the sharing economy. Concerns about economic issues, therefore, were shown to be a barrier for consumers because of the perceived risk (Bhalla 2021). Therefore, given that perceived risk is a moderating variable, the following hypothesis was put forward:

**H7.** *Perceived risk significantly affects the influence of economic benefits on consumers' usage behavior in the sharing economy.*

Regarding the degree to which perceived risk affects the influence of the feelings of a community on consumers' usage behavior in the sharing economy, the work of Li et al. (2020) found that perceived risk is a factor that increases the likelihood that friends, relatives, or associates express negative attitudes toward the activities of individuals related to their participation in the sharing economy during the crisis period, which may involve a loss of respect, and even friendship, due to the decision to travel using shared services. Therefore, the following hypothesis considered the moderating variable of perceived risk:

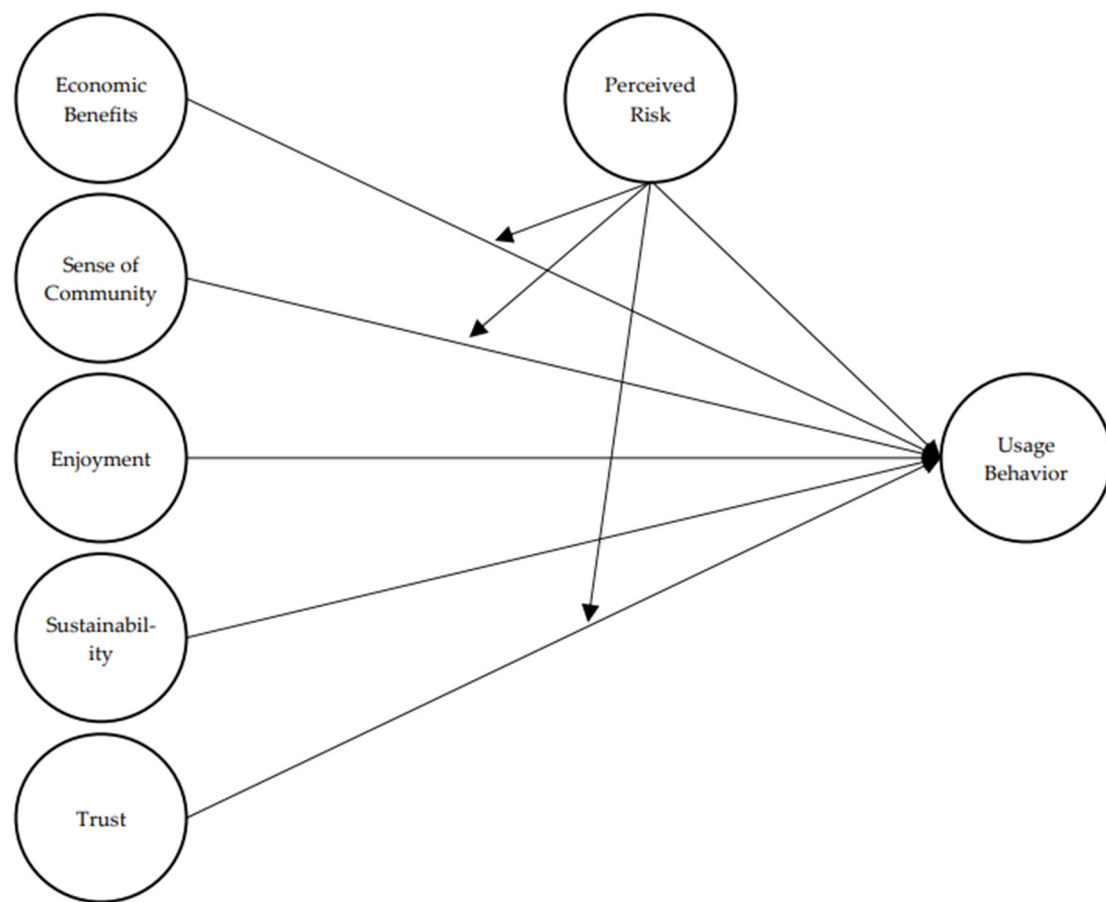
**H8.** *Perceived risk significantly affects the influence of community sentiment on consumers' usage behavior in the sharing economy.*

Regarding the degree to which perceived risk affects the influence of trust on consumers' usage behavior in the sharing economy, Jain and Mishra (2020) considered that a reduction in the perceived risk and an increase in trust modify the intention to consume within the sharing economy. According to Mao et al. (2020), perceived risk moderates the effects of trust on the repurchase intentions of consumers in the sharing economy. Lee (2020) found that perceived risk may moderate the relationship between driver-based trust and consumers' intention to participate in the sharing economy. Similarly, according to Xu et al. (2021), in the sharing economy, as perceived risk is reduced, trust increases and consumers' purchase intentions and behavior increase. Therefore, with perceived risk as a moderating variable, the following hypothesis was put forward:

**H9.** *Perceived risk affects the influence of trust on consumers' usage behavior in the sharing economy.*

The research model that was created based on the approaches established so far is shown in Figure 1.





**Figure 1.** Research model.

#### 4. Research Method

##### 4.1. Data Collection

This research and its results were generated from a sample of 400 cases and calculated with G\*Power software version 3.1.9.6, considering a mean effect size of 0.1, a significance level of 0.01, a statistical power of 0.99, six direct predictors, and three moderating interactions, which were higher requirements than those suggested by [Hair et al. \(2021\)](#). Data were collected on 9 August 2022 through a survey to which the participants were recruited through the SurveyMonkey audience platform. According to [Connolly and Miller \(2022\)](#), sampling participants from these crowdsourced populations has become a respected research practice in many fields. The questionnaire, as seen in Table 2, was given to men (47.50%) and women (52.50%) over 18 years of age, regardless of occupation, gender, or social status, residing in the Metropolitan Zone of the City of Puebla. The inclusion criteria to answer the questionnaire were to have access to the applications of sharing economy platforms through a smartphone and to have used a car-sharing service during the previous year.

**Table 2.** Respondents' characteristics.

Demographic Characteristics		Percentage
Gender	Men	47.50%
	Women	52.50%
Age (years)	18–25	24.50%
	26–33	41.50%
	34–41	20.50%
	42–49	8.75%

**Table 2.** *Cont.*

Demographic Characteristics		Percentage
	50–57	3.25%
	58–65	1.00%
	Over 65	0.50%
	Education level	
	High school or less	30.75%
	Bachelor's degree	61.25%
	Postgraduate	8.00%

Note: N = 400.

#### 4.2. Measurement of Constructs

The present work used a measurement instrument that included variables of participation in the sharing economy, factors of customer participation, and perceived risk. The indicators of these constructs are presented in Table 3.

**Table 3.** Measurement instruments, variables, and indicators.

Authors	Variables	Indicators
Boateng et al. (2019)	(UB) Usage behavior	(UB1) I will continue to use ride-sharing service platforms. (UB2) I encourage others to use ride-sharing service platforms. (UB3) I will use ride-sharing service platforms more often.
Oliveira et al. (2021)	(EB) Economic benefits	(EB1) My participation in ride-sharing service platforms benefits me financially. (EB2) My participation in ride-sharing service platforms can improve my economic situation. (EB3) My participation in ride-sharing service platforms saves me money.
Oliveira et al. (2021)	(SC) Sense of community	(SC1) The use of ride-sharing service platforms allows me to belong to a group of people with similar interests. (SC2) The use of ride-sharing service platforms makes me feel like I am more involved in the community. (SC3) The use of ride-sharing service platforms allows me to gain recognition from the community. (SC4) The use of ride-sharing service platforms allows me to know people with similar interests.
Oliveira et al. (2021)	(E) Enjoyment	(E1) I think ride-sharing service platforms are enjoyable. (E2) I think ride-sharing service platforms are exciting. (E3) I think ride-sharing service platforms are fun. (E4) I think ride-sharing service platforms are interesting.
Oliveira et al. (2021)	(S) Sustainability	(S1) Ride-sharing service platforms help to save natural resources. (S2) Ride-sharing service platforms are a sustainable mode of consumption. (S3) Ride-sharing service platforms are efficient in terms of using energy. (S4) Ride-sharing service platforms are environmentally friendly.
Oliveira et al. (2021)	(T) Trust	(T1) I think ride-sharing service platforms offer trust. (T2) I think the other users of ride-sharing service platforms are truthful. (T3) I think ride-sharing service platform providers give trust in the service they provide.

Table 3. Cont.

Authors	Variables	Indicators
midrule Wang et al. (2020)	(PR) Perceived risk	(PR1) I am concerned that my personal information will be shared or sold to others when I join ride-sharing service platforms. (PR2) I am concerned that the ride-sharing service platform collects too much personal information about me. (PR3) I am concerned that sharing a car with strangers through the same ride-sharing platform is not safe. (PR4) I am concerned that sharing a car with strangers through ride-sharing services does not guarantee my security and the security of my property.

For measuring consumers' participation in the sharing economy, the items regarding the use of sharing economy platforms proposed by Boateng et al. (2019) were used. For the factors of customer participation, use was made of the instrument proposed by Oliveira et al. (2021). For perceived risk, the measures proposed by Wang et al. (2020) were used.

To adapt the tests to the context of the study, a back-translation design was used (Hambleton and Zenisky 2010). Following the procedure suggested by Gómez-Benito et al. (2011), the original measurement instruments were translated from English to Spanish by an expert translator that was fluent in both languages. The Spanish version was translated into English by another expert translator fluent in both languages who had not read the original version. The translation was then compared with the original, and the items were found to have the same meaning as the original version. A 5-point Likert-type scale was used to measure the indicators (1—strongly disagree, 5—strongly agree). According to Dawes (2008), it has been shown in simulation and empirical studies that 5-point or 7-point Likert scales improve reliability and validity. In addition, the 5-point Likert-type scale reduces the frustration level of respondents, which increases the rate and quality of responses (Babakus and Mangold 1992). Therefore, this scale was chosen because it is the most used to measure perception concepts (Lo et al. 2020), and it has been applied in studies on consumer behavior in the sharing economy. (e.g., Kong et al. 2020; Matharu et al. 2021; Ye et al. 2021).

## 5. Data Analysis and Results

To examine the reliability and validity of the constructs and research hypotheses, the variance-based partial least squares (PLS) method was used in SmartPLS version 4.0. Considering the nature and purpose of this study, the choice of the multivariate PLS-SEM method instead of the CB-SEM model was justified for several reasons. First, this study investigated a model that comprised a relatively complex set of constructs, indicators, and relationship hypotheses. It had eight hypotheses that included direct and moderating relationships. Second, the proposed model was an extension and synthesis of the model of consumers' participation in the sharing economy and perceived risk. It explored a new set of interactive relationships rather than merely confirming the model. Identifying these relationships would explain and predict consumers' usage behavior in the sharing economy, considering the moderating effect of perceived risk.

### 5.1. Reliability and Validity

The reliability and validity of the research variables were examined in terms of the reliability of the measurement model, the convergent validity, and the discriminant validity. The first step in evaluating the reflective measurement model was to examine the external loadings of the indicators. The size of the external loadings is also commonly referred to as the reliability of the indicator. All external loadings, as shown in Figure 5, had values greater than 0.708, meaning they were statistically significant. The second criterion to

be evaluated was the internal consistency reliability. The criterion used for measuring the internal consistency reliability is Cronbach's alpha. Table 4 shows that the values of this criterion were greater than 0.70, indicating that they were statistically significant (Hair et al. 2021). The composite reliability criterion was also applied and values above 0.70 were obtained, as shown in Table 4. The values obtained indicated the reliability of the measurements of the constructs, and thus, these measurements could be used in the study (Hair et al. 2021).

**Table 4.** Reliability and validity measures.

	Cronbach's Alpha	Compound Reliability	AVE
Economic benefits	0.853	0.910	0.772
Sense of community	0.814	0.875	0.637
Enjoyment	0.829	0.885	0.659
Sustainability	0.878	0.915	0.730
Trust	0.821	0.893	0.736
Perceived risk	0.821	0.878	0.642
Usage behavior	0.806	0.885	0.720

In addition, the validity of the measurement model was assessed. In the case of reflective models, convergent validity and discriminant validity should be reviewed.

Convergent validity assesses the degree of dimensional correlation in the scale, where high correlations mean that the scale measures its intended construct. As shown in Table 4, average variance extracted (AVE) values greater than 0.5 were obtained in the study, indicating significant convergent validity in the model's constructs (Hair et al. 2021). On the other hand, discriminant validity requires the constructs to be distinctive in measuring different concepts and have low correlations between them. Table 5 shows the heterotrait–monotrait (HTMT) correlations of the model's constructs. In all cases, the values were less than 0.9, and thus, the discriminant validity was considered satisfactory (Hair et al. 2021). Variance inflation factor (VIF) values in the predictor constructs should be less than 5 and preferably a value of 3 to ensure that collinearity does not have a substantial effect on the structural model estimates (Hair et al. 2021). In the study, all VIF values obtained were less than 3, which also indicates that the model is free of common method bias.

**Table 5.** Heterotrait–monotrait correlations (HTMT).

	Economic Benefits	Sense of Community	Enjoyment	Sustainability	Trust	Perceived Risk	Usage Behavior
Economic Benefits	-						
Sense of community	0.684	-					
Enjoyment	0.544	0.468	-				
Sustainability	0.651	0.631	0.468	-			
Trust	0.467	0.538	0.667	0.455	-		
Perceived risk	0.153	0.112	0.164	0.118	0.172	-	
Usage behavior	0.418	0.378	0.469	0.332	0.499	0.152	-

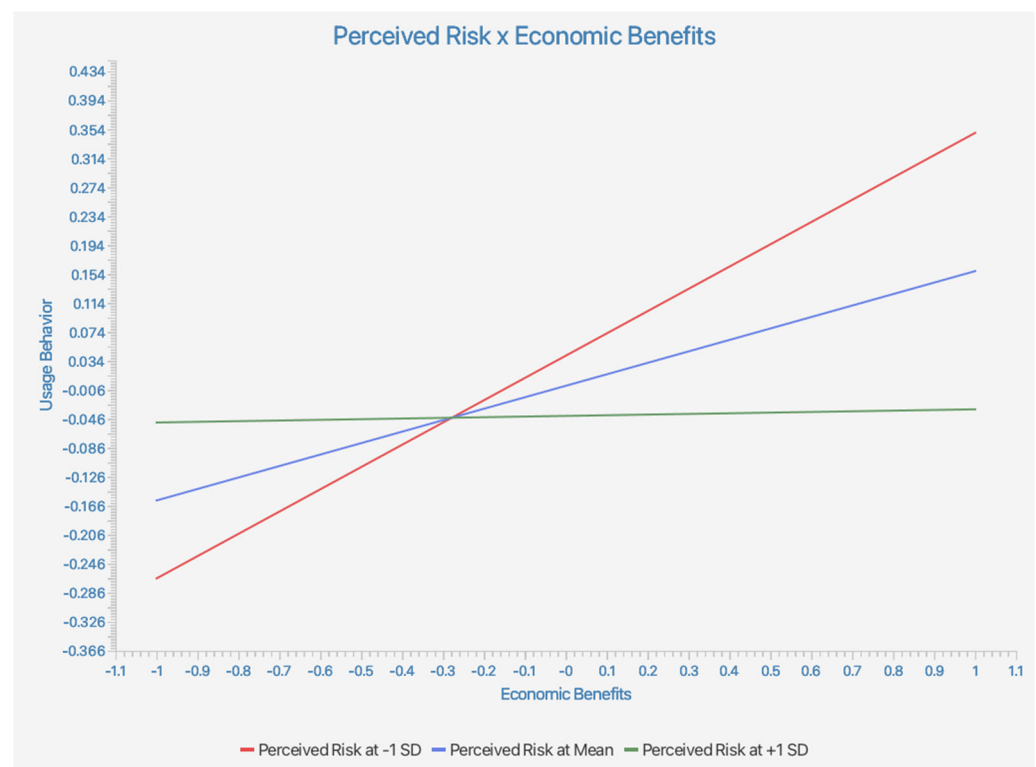
## 5.2. Structural Model

The SEM-PLS results supported hypothesis one (the effect of economic benefits on usage behavior was significant and positive), with a standardized path coefficient of 0.158 ( $p = 0.032$ ). Likewise, they supported hypothesis three (the effect of enjoyment on usage behavior was significant and positive), with a standardized coefficient of 0.181 ( $p = 0.003$ ). Finally, the model supported hypothesis five (the effect of trust on usage behavior was significant and positive), with a standardized coefficient of 0.216 ( $p = 0.001$ ).

In contrast, hypothesis two (the effect of feelings of community on usage behavior) was not accepted because it showed a standardized path coefficient of 0.001 ( $p = 0.991$ ) and thus was not significant. Hypothesis four was also not accepted because the effect of

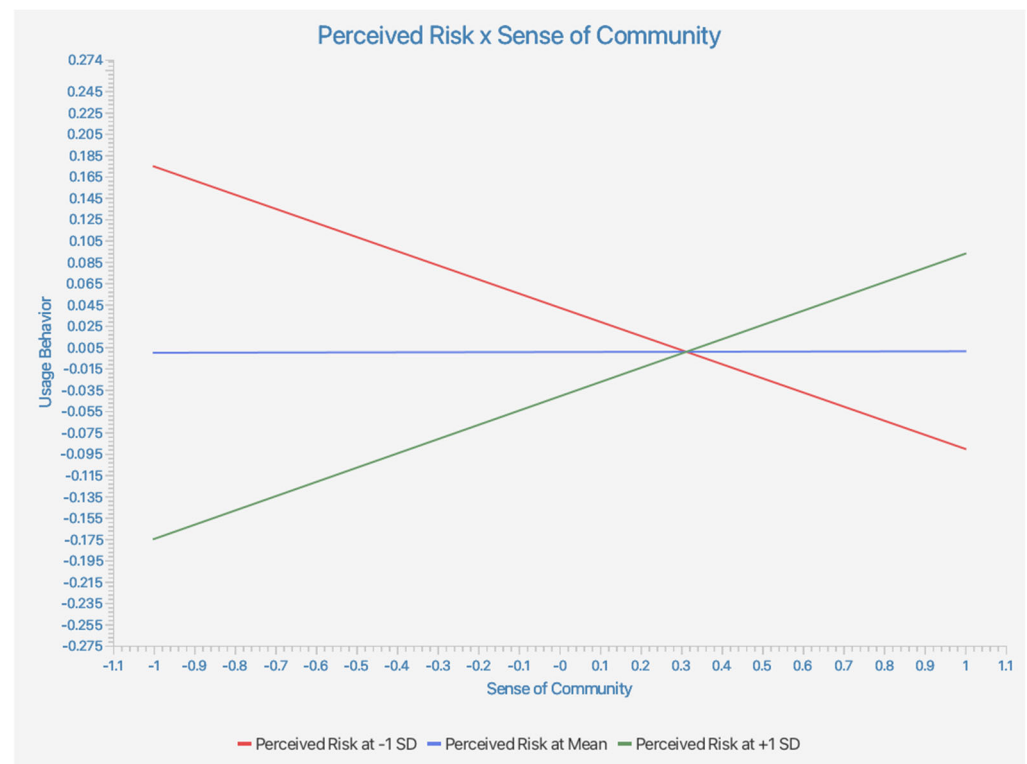
sustainability on usage behavior had a standardized path coefficient of 0.052 ( $p = 0.451$ ) and thus was not significant. Hypothesis six was also not accepted because the effect of perceived risk on usage behavior had a standardized path coefficient of  $-0.042$  ( $p = 0.353$ ) and thus was not significant.

Regarding the moderating effects of the perceived risk variables, the SEM-PLS results supported hypothesis seven (perceived risk significantly moderates the relationship between economic benefits and usage behavior), with a standardized path coefficient of  $-0.149$  ( $p = 0.025$ ), an effect seen in Figure 2. They also supported hypothesis eight (perceived risk significantly moderates the relationship between feelings of community and use behavior), with a standardized path coefficient of 0.133 ( $p = 0.029$ ), as can be seen in Figure 3. However, hypothesis nine was not accepted, as perceived risk did not significantly moderate the relationship between trust and usage behavior, with a standardized path coefficient of  $-0.050$  ( $p = 0.470$ ), which can be corroborated in Figure 4. The  $R^2$  value ranges from 0 to 1, with higher levels indicating greater explanatory power. The results show an  $R^2$  of 0.255 and a  $Q^2$  value of 0.203 with an RMSE of 0.901 and an MAE of 0.654. A  $Q^2 > 0$  indicates that the model has predictive relevance (Hair et al. 2021). Figure 5 shows the structural SEM-PLS measurement model, which allowed for the joint analysis of the reliability and validity of the relationships between the constructs.



**Figure 2.** The moderating effect of perceived risk on the relationship between economic benefits and usage behavior.





**Figure 3.** The moderating effect of perceived risk on the relationship between sense of community and usage behavior.



**Figure 4.** The moderating effect of perceived risk on the relationship between trust and usage behavior.

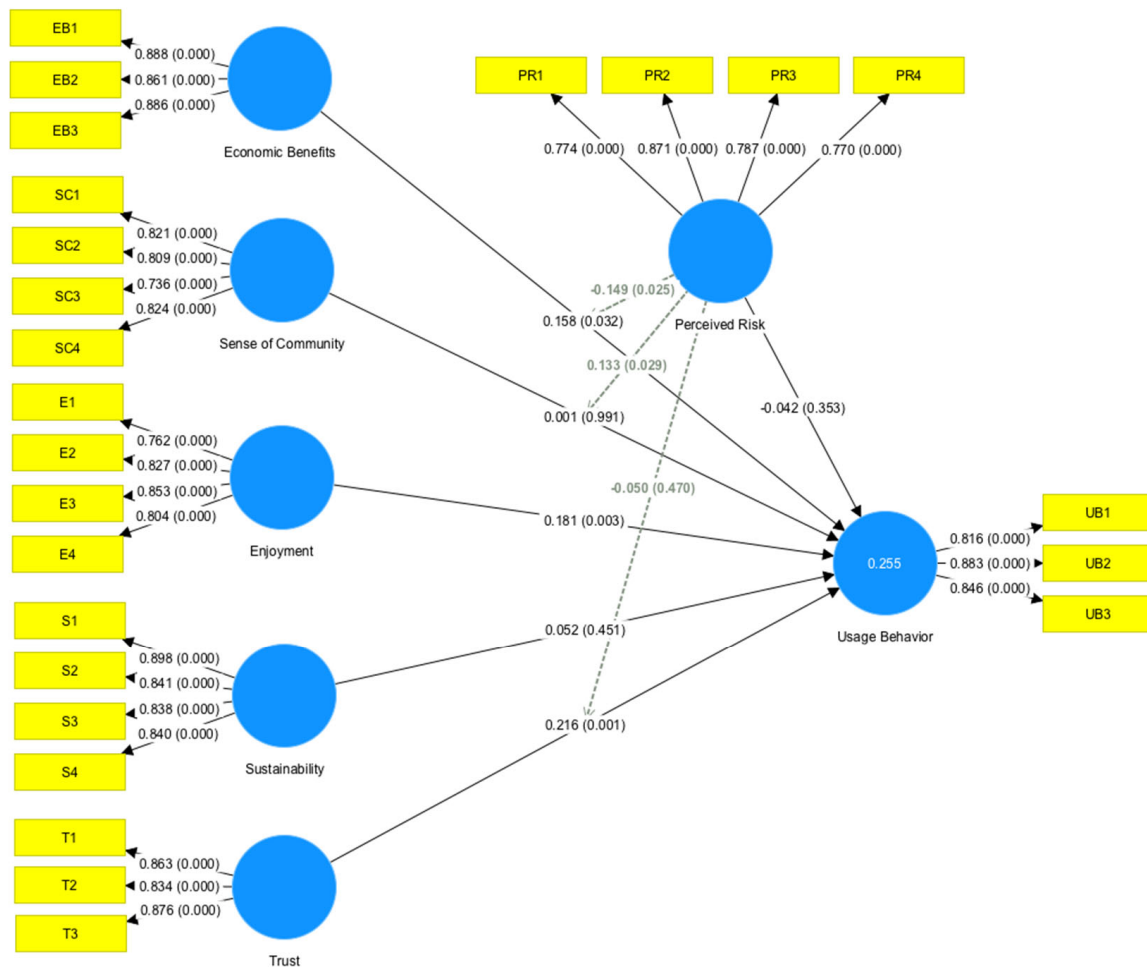


Figure 5. Measurement model.

## 6. Discussion

This study found economic benefits to be a driver of consumers' participation in the sharing economy, congruent with the results obtained by (Abutaleb et al. 2021) in the context of a developing country. For Arteaga-Sánchez et al. (2020), one reason to participate is money savings or economic benefits. According to Rasheed Gaber and Elsamadicy (2021), not only is participation found to be driven by economic benefits but so is the intention to continue participating. This was not tested in the study, but it demonstrates the importance of economic benefits as a driver, as had already been tested in pioneering studies on the topic (e.g., Möhlmann 2015; Tussyadiah 2016).

Although the results showed that perceived risk had no significant relationship with usage behavior, in congruence with what was found by Shaikh et al. (2022), the study showed that when consumers perceived risks in relation to the use of sharing economy services, the sense of the relationship between economic benefits and usage behavior became negative, implying that consumers considered that they will experience economic losses by using the services under risky conditions. Thus, similar to Chen (2022), perceived risk was shown to moderate the relationship between perceived utility and attitudes toward behavioral intention.

On the other hand, when moderated by perceived risk, a feeling of community was a significant driver of usage behavior. This is congruent with the results of Godovykh et al. (2021), who showed that perceived risk influences people's attitudes, decisions, and behavior. This confirmed that social interactions (Sainaghi 2020) and human solidarity, based on collaboration and positive personal relationships, play an essential role

in the development of social behavior (Gurău and Ranchhod 2020) and a critical role in consumers' participation in the sharing economy.

In terms of enjoyment and trust in using ride-sharing services, the study showed that consumers, as predicted by the social exchange theory, made their choices based on a subjective cost–benefit analysis (Sands et al. 2020). For the specific case of trust, the results confirm the findings of Albinsson et al. (2019), which state that sharing economy consumers are trusting and perceive other participants as kind and able to deliver on their promises and commitments. The study showed flexibility in the type and amount of rewards, i.e., quantifiable and nonquantifiable, where reciprocity can be monetary or nonmonetary (Davlembayeva et al. 2020a).

## 7. Conclusions

The results indicated that these consumers in a developing country behaved similarly to those reported in developed countries in terms of the economic theme (e.g., Hawlitschek et al. 2018). This indicates that consumers seek to save money or benefit economically by using sharing economy services, regardless of their economic environment.

As shown in the present study, economic benefits, enjoyment, and trust were relevant factors for consumers' participation in the sharing economy. Moreover, perceived risk was found to moderate the relationship between economic benefits and consumers' behavior, changing the direction of the relationship. In addition, perceived risk, by moderating the relationship between feelings of community and usage behavior, enhanced this relationship's significance.

## 8. Contribution and Implication

This study contributes to knowledge of the sharing economy and to studies on customer behavior in several aspects. First, it identifies the drivers of the use of car-sharing service platforms in the context of a developing economy. Second, the finding that perceived risk significantly moderates the relationships between economic benefits and community feeling regarding usage behavior makes a theoretical contribution to the understanding of consumer behavior in the context of the sharing economy.

Based on the above findings, ride-sharing service platforms operating in developing economies should improve their image by emphasizing their efforts to minimize risks to consumers, so that the perception of risk does not affect usage behavior.

## 9. Limitations and Future Research

One limitation of the research was that it did not consider people participating in the sharing economy as providers of goods or services. Furthermore, consumers of sharing economy platforms who live outside the Metropolitan Zone of the City of Puebla were not included. Underage consumers were also not included, and neither were those who had not consumed sharing economy services during the previous year. Therefore, for future research, investigating the behavior of the providers of goods or services is recommended.

Finally, the research was conducted in the context of ride-sharing service platforms, and thus, applying the research model to other platforms is recommended.

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