

“Intention to provide ridesharing services: Determinants from the perspective of driver-partners in a gig economy”

AUTHORS	Hung Le Van  Trung Nguyen Ngoc  Phuong Pham Thi Thu  Dao Nguyen Thi 
ARTICLE INFO	Hung Le Van, Trung Nguyen Ngoc, Phuong Pham Thi Thu and Dao Nguyen Thi (2022). Intention to provide ridesharing services: Determinants from the perspective of driver-partners in a gig economy. <i>Problems and Perspectives in Management</i> , 20(4), 320-331. doi: 10.21511/ppm.20(4).2022.24
DOI	http://dx.doi.org/10.21511/ppm.20(4).2022.24
RELEASED ON	Friday, 02 December 2022
RECEIVED ON	Wednesday, 10 August 2022
ACCEPTED ON	Wednesday, 09 November 2022
LICENSE	 This work is licensed under a Creative Commons Attribution 4.0 International License
JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

40



NUMBER OF FIGURES

4



NUMBER OF TABLES

4

© The author(s) 2022. This publication is an open access article.



BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine
www.businessperspectives.org

Received on: 10th of August, 2022

Accepted on: 9th of November, 2022

Published on: 2nd of December, 2022

© Hung Le Van, Trung Nguyen Ngoc,
Phuong Pham Thi Thu, Dao Nguyen
Thi, 2022

Hung Le Van, Ph.D., Researcher,
Institute of Regional Sustainable
Development, Vietnam Academy of
Social Sciences, Vietnam.

Trung Nguyen Ngoc, Ph.D.,
Researcher, Institute of Regional
Sustainable Development, Vietnam
Academy of Social Sciences, Vietnam.
(Corresponding author)

Phuong Pham Thi Thu, Ph.D.,
Researcher, Institute of Regional
Sustainable Development, Vietnam
Academy of Social Sciences, Vietnam.

Dao Nguyen Thi, Master, Researcher,
Institute of Regional Sustainable
Development, Vietnam Academy of
Social Sciences, Vietnam.



This is an Open Access article,
distributed under the terms of the
[Creative Commons Attribution 4.0
International license](https://creativecommons.org/licenses/by/4.0/), which permits
unrestricted re-use, distribution, and
reproduction in any medium, provided
the original work is properly cited.

Conflict of interest statement:

Author(s) reported no conflict of interest

Hung Le Van (Vietnam), Trung Nguyen Ngoc (Vietnam),
Phuong Pham Thi Thu (Vietnam), Dao Nguyen Thi (Vietnam)

INTENTION TO PROVIDE RIDESHARING SERVICES: DETERMINANTS FROM THE PERSPECTIVE OF DRIVER-PARTNERS IN A GIG ECONOMY

Abstract

Research on ridesharing platforms under the gig economy has focused much on the incentives and barriers of users, leaving many gaps in understanding drivers' intention to provide ridesharing services. This paper aims to explore, from the perspective of driver-partners, motives that encourage them to continue being gig workers. Data for the study are based on a cross-sectional survey of ridesharing drivers in three metropolitan areas in three regions (North, Central, and South) of Vietnam, conducted from June to July 2022. The paper regresses behavioral intention to continue being a gig driver on their demographic characteristics and self-estimation of economic benefit, time preference, and enjoyment of being a gig driver via ordered probit models. For all three regions, the result suggests that economic benefit, time preference, and enjoyment are good predictors of drivers' intention to provide the services. Specifically, the probability of remaining in gig work among drivers decreases with their educational and economic status. Higher economic benefit does not predict a higher intention of drivers to stay longer in gig work. Similarly, those with higher levels of enjoyment of traveling and vehicles have a lower intention to remain in this sphere. In the North, the interaction terms between time preference and enjoyment level are significant, suggesting that the effect of enjoyment levels becomes less damaging with an increase in time preference. In other words, time preference is vital in keeping gig drivers in this type of work.

Keywords

platform, driver-partners, socio-demographic, time preference, economic benefit, enjoyment

JEL Classification

J22, J46, R41

INTRODUCTION

Ridesharing platforms or ridesharing services, as part of the gig economy, provide a promising mode of transportation that significantly contributes to countries' economic and sustainable development. This new business mode creates efficiency and convenience for both users and providers, including technology companies and their partners, via smartphone applications. On one hand, technological companies do not have to own devices and vehicles, and partners can work in suitable and convenient ways based on time preferences, economic returns, or just enjoyment. But on the other hand, customers are more likely to use ride-share if they find the service useful and environmentally protective, and vice versa if they think the service is risky (Wang et al., 2020).

Ridesharing's advantages include reduced travel costs, increased trip convenience, better available seat capacity, reduced use of vehicles for personal trips, and significantly reduced gas emissions. Overall, it provides a platform for many parties to connect despite their different oc-

cupations, backgrounds, and personal characteristics. For example, using archival data and the difference-in-differences method, Li et al. (2022) empirically found that Uber's ridesharing service contributed to the decline of traffic jams in busy municipalities. In addition, with a time series analysis, Khan et al. (2022) showed a significant negative relationship between the presence of ride-share services and the number of total crashes and injuries, except for severe injuries in a week. It is also found that shared autonomous vehicles from ridesharing transportation services are likely to decrease traffic crashes when it comes to drivers' mistakes.

Several studies have focused on customers' intentions to adopt ridesharing services, including price, safety, convenience, trust, and satisfaction. These factors significantly affect intentions to use this service. Social influence also directly affects customers' behavioral intentions. For instance, Giang et al. (2017) analyzed data from 328 users in Vietnam and reported that customers have positive attitudes toward ride-share services because they find them useful and easy to use. The results also revealed that attitudes, subjective norms, and cognitive-behavioral control are essential predictors of customers' intention to use carpooling apps. For driver-partners, behavioral intention to stay on such platforms may be affected by socio-demographic factors such as education, age, and family economic status. In general, much attention has been paid to exploring multiple factors associated with the behavior of ride-share travelers (Lu & Wang, 2020).

Although there have been many investigations of customers' points of view on intention to use a ride-sharing platform, the opinion of driver-partners from the sharing companies has not been widely examined. In addition to socio-demographic characteristics associated with the motive to use ridesharing services, some intrinsic and extrinsic elements, including economic benefit, time preference, and enjoyment of drivers, play a vital role. To explore these elements in the relationship with regard to driver-partners' intention to remain with the platform, it is also necessary to look at the interactions among these factors.

1. LITERATURE REVIEW AND HYPOTHESES

It is critical to realize the trend of benefits from ridesharing to the partners who play the role of business groups or workers. Usually, any services provided by state or private enterprises in transportation will benefit one or many parties. From the view of ridesharing, economic, social, and environmental benefits, especially personal preferences for partners, are positively recognized from this business model's emergence. First, ridesharing was initially interpreted as carpooling, where the driver and rider share the same journey. Gradually, with the support of technology and the introduction of online applications/platforms, matching drivers and riders has become more accessible. As a result, ridesharing via online platforms has become a popular transport service in many metropolitan areas and is considered an appealing alternative mode of transportation to traditional taxis. Although ridesharing may affect travel demand and urban areas unfavorably, it has been found to

contribute to lower travel costs, higher travel flexibility, decreased air pollution, and more sustainable urban environments (Xiao & Goulias, 2022).

Levinger et al. (2020) asserted that transportation services significantly contribute to the development of contemporary smart cities. These services bring about economic, social, and environmental rewards via the decline in several aspects, such as travel costs, travel times, traffic jams, CO₂ emissions, and the demand for parking infrastructure (Fellows & Pitfield, 2000; Jacobson & King, 2009; Stiglic et al., 2016). Ridesharing is also a resource-efficient mode of personal transportation (Gidófalvi et al., 2008), while cities face problems such as congestion, parking, and pollution.

Several attempts in simulation and field studies have been made to quantify the advantages of ridesharing. For instance, a survey in the 1970s of approximately 30,000 carpool commuters shows that ridesharing helps reduce 23% of miles traveled. In New York City, 40% of trip duration is attribut-

ed to ridesharing services. A simulation study for Prague concluded that ridesharing could decrease the total miles traveled by a mobility-on-demand fleet by 65% without prolonging travel times by more than 10 minutes (Ruch et al., 2021).

Sijiabat (2019) examined the effect of economic, social, environmental, and technological factors on users' intention and decision to use ridesharing platforms such as Uber, Grab, and Gojek in Indonesia. The study concludes that economic aspects are the strongest regressors of personal intention to adopt ridesharing. In addition, 86% of respondents claimed that technological variables encourage them to use ridesharing.

Benefits from the ridesharing platform should also be acknowledged under individual preferences. For example, it may be said that ridesharing is a substitute for private vehicle ownership; thus, those who do not value owning a car may consider ridesharing. In addition, this option provides affordability and convenience to users as vehicles mobilized are located very near, a ride is rented only when needed, and users are free from check-in and check-out procedures (Yunus et al., 2019).

Prieto et al. (2022) conducted an empirical study using data from a large car owner survey in Europe. They found that participation decisions in peer-to-peer (P2P) mobility services are driven by personal preferences. Those who intend to be peer providers are more likely to become users of the services and vice versa. Drivers join P2P shared mobility platforms because they believe in the positive values related to the possession of self-link, individualism, and environmentalism that the service can bring.

Moody et al. (2019) concluded that users' attitudes were strongly related to their behavioral intention to adopt ridesharing services. Specifically, for share-riders, prejudiced attitudes toward riders are negative predictors of their dissatisfaction with the sharing choice and those of their shared TNC trips. In addition, these attitudes are inversely correlated with sustained and frequent ridesharing. For non-share riders, rider-to-rider biased attitudes negatively affect their readiness to use ridesharing.

In line with the above view, Goel and Halder (2020) reported that customers volunteer to pay more for sustainable goods because they care more about environmental issues (Chaudhry et al., 2018). In addition, the care for the environment may lead to commuters' consideration of using ridesharing platforms (Wang et al., 2019). However, other authors found weak or insignificant associations between the two (Bardhi & Eckhardt, 2012; Hamari et al., 2016).

Efthymiou (2013) presented that those with environmental concerns are more likely to join ridesharing services. Others suggest that those with care about emissions reduction, climate change, and air quality are also more likely to adopt ridesharing platforms (Acheampong & Siiba, 2020; Alemi et al., 2018; Fishman et al., 2015; Kim et al., 2015; Nazari et al., 2018). In contrast, there are no environmentally protective attitudes among share-riders in Switzerland (Becker et al., 2018). Likewise, in the US, users of car-sharing services did not show significant environmental motives (Van Veldhoven et al., 2022).

From travelers' perspective, Yang et al. (2020) showed that the mismatch among travelers in terms of travel distance and start location will heavily affect the management and operation systems of the ridesharing platforms.

Zhang and Leiming (2020) tested the theory of planned behavior on Chinese college students. It was found that subjective norms and perceived behavioral control are direct and positive predictors of their motive to adopt ridesharing. At the same time, concerns for environmental issues are indirectly correlated with the motive. The mechanism for this indirect correlation is that environmental awareness affects the students' motive to use ridesharing via subjective norms and perceived behavioral control.

Most research has identified environmental awareness, ease of use, personal innovation, financial benefit, social influence, and perceived usefulness as predictors of the motive to adopt ridesharing (Ashrafi et al., 2020; Goel & Halder, 2020; Litman, 2000; Akbari et al., 2021). However, these correlations are examined from the viewpoint of customers rather than driver-partners. Therefore, this

paper aims to determine the relationship between preferential factors and the intention to adopt ridesharing of driver-partners in the sharing platform. Consequently, the following hypotheses are raised:

- H1: *There is a positive relationship between economic benefit and the intention of driver-partners to adopt ridesharing on a sharing platform.*
- H2: *There is a positive relationship between time preference and the intention of driver-partners to adopt ridesharing on a sharing platform.*
- H3: *There is a positive relationship between enjoyment and the intention of driver-partners to adopt ridesharing on a sharing platform.*
- H4: *There is a positive relationship between interaction among preferential factors and the intention of driver-partners to adopt ridesharing on a sharing platform.*

2. DATA DESCRIPTION AND METHODOLOGY

This paper used survey data from residents in three large metropolitan cities in Vietnam to find socio-demographic and preferential determinants, including economic benefit, time management benefit, and enjoyment in the driver-partners' intention to join the gig economy. Data were collected from 996 respondents from several motorbike and/or carsharing companies in Vietnam, including Grab, Gojek, Be, Shopee, Baemin, and Ahamove. The survey was carried out online and offline from June to July 2022 in Hanoi (North), Danang (Central), Hochiminh City (South), and other nearby areas. For Grab, a link to the questionnaire was sent to drivers to collect data. For other companies, drivers were interviewed face-to-face using questionnaire printouts.

The questionnaire link was sent to respondents online since many interviewees could access and answer the survey simultaneously. Table 1 reports demographic information for the respondents, including gender, age, residential areas, and educa-

tion. The findings show that of the interviewees, 97.29% were male, and only 2.71% were female in all three regions. In addition, there were four age groups for the respondents. Specifically, 17.27% of respondents were under 25, 29.90% were aged 35-44, and 14.24% were over 45, respectively. However, the percentage of respondents aged 26-34 was the highest; 44.25% in the North and 52.27% in the South, respectively.

The portion of respondents living in cities was 44.18%, with non-city residents comprising 55.82% of the total. The proportion of city and non-city residents was quite similar in the Central and South, but in the North, 32.76% of respondents lived in the city center and 67.25% in the suburbs. Regarding the educational levels of respondents, those with primary education levels comprised 1.31% of all respondents. The percentages of respondents with high school, college, and university qualifications were 33.73%, 27.11%, and 21.29%, respectively.

Table 1. Descriptive statistics

Items	All observations	North	Central	South
Gender				
Male	97.29	96.87	97.73	97.71
Female	2.71	3.13	2.27	2.10
Age				
< 25	17.27	20.69	14.97	19.32
26-34	38.59	44.25	31.67	52.27
35-44	29.90	27.3	35.51	12.5
> 45	14.24	7.76	17.85	15.91
Residential location				
City center	44.18	32.76	45.45	52.48
Suburbs	55.82	67.24	54.55	47.52
Education				
Primary	1.31	0.28	1.14	1.91
Secondary	16.57	9.12	5.68	23.28
High school	33.73	33.05	32.95	34.16
College	27.11	30.77	30.68	23.47
University	21.29	26.78	29.55	17.18

Table 2 describes drivers' vehicles and their intention to work part-time or full-time in the sector. Overall, more than 70% of respondents in all regions used cars, while less than 30% used motorbikes in their sharing activity. Table 2 also shows drivers' responses to the question, "In the near future, will you consider this kind of work a part-time or full-time job?" Accordingly, 66.27% of the respondents reported that they would consider this work a full-time job, while 33.73% considered it a part-time job.

Table 2. Descriptive statistics for ridesharing adoption

Items	Whole obs.	North	Central	South
Vehicle				
Motorbike	73.69	77.21	70.45	71.95
Car	26.31	22.79	29.55	28.05
Intention				
As part-time	33.73	38.18	34.09	30.92
As full-time	66.27	61.82	65.91	69.08

To understand the effect of social, demographic, and preferential variables on driver-partners' intention to adopt ridesharing, y can be an ordered choice taking the values $\{0, 1, 2, \dots, J\}$ for some known integer J . The ordered probit model for y (intention to adopt ridesharing platform), conditional on independent factors x , can be derived from a latent factor model (Wooldridge, 2001). A latent factor y^* is identified as

$$y^* = x\beta + e, \quad e | x \sim Normal(0,1), \quad (1)$$

in which β is $K \times 1$. Let $\alpha_1 < \alpha_2 < \dots < \alpha_J$ be threshold parameters and report

$$\begin{aligned} y = 0 & \quad \text{if} \quad y^* \leq \alpha_1, \\ y = 1 & \quad \text{if} \quad \alpha_1 < y^* \leq \alpha_2, \\ & \quad \vdots \\ y = J & \quad \text{if} \quad \alpha_{J-1} < y^* \leq \alpha_J. \end{aligned} \quad (2)$$

Given independent variables such as time preference, economic benefit, or enjoyment, the conditional distribution of the intention to adopt the ridesharing platform can be derived with the standard normal assumption for the error term. Each response probability can be measured as:

$$\begin{aligned} P(y = 0 | x) &= P(y^* \leq \alpha_1 | x) = \\ &= P(x\beta + e \leq \alpha_1 | x) = \Phi(\alpha_1 - x\beta), \\ P(y = 1 | x) &= P(\alpha_1 < y^* \leq \alpha_2 | x) = \\ &= \Phi(\alpha_2 - x\beta) - \Phi(\alpha_1 - x\beta), \\ & \quad \vdots \\ P(y = J - 1 | x) &= P(\alpha_{J-1} < y^* \leq \alpha_J | x) = \\ &= \Phi(\alpha_J - x\beta) - \Phi(\alpha_{J-1} - x\beta), \\ P(y = J | x) &= P(y^* > \alpha_J | x) = \\ &= 1 - \Phi(\alpha_J - x\beta). \end{aligned} \quad (3)$$

The coefficients α and β can be estimated by maximum likelihood. For each i , the log-likelihood function is

$$\begin{aligned} \ell_i(\alpha, \beta) &= 1[y_i = 0] \log[\Phi(\alpha_1 - x_i\beta)] + \\ &+ 1[y_i = 1] \log[\Phi(\alpha_2 - x_i\beta) - \Phi(\alpha_1 - x_i\beta)] + \quad (4) \\ &\dots + 1[y_i = J] \log[\Phi(\alpha_J - x_i\beta)]. \end{aligned}$$

For the ordered probit type, the marginal effect of every variable or interaction of variables can also be measured:

$$\begin{aligned} \frac{\partial p_0(x)}{\partial x_k} &= -\beta_k \phi(\alpha_1 - x\beta), \\ \frac{\partial p_j(x)}{\partial x_k} &= -\beta_k \phi(\alpha_j - x\beta), \quad (5) \\ \frac{\partial p_j(x)}{\partial x_k} &= -\beta_k [\phi(\alpha_{j-1} - x\beta) - \phi(\alpha_j - x\beta)], \\ & \quad 0 < j < J. \end{aligned}$$

The behavioral intention to adopt ridesharing is the dependent variable of the unstandardized ordered probit model. The dependent variable ranges from 1 to 5, where 1 means driver-partners will not continue, and 5 shows that they will remain with this sharing service for 5 years more. In all ordered probit models, socio-demographic variables and self-estimation of economic benefit, time preference, and enjoyment of partners are used as the explanatory factors (Table 3).

3. RESULTS

Table 4 presents the results of the ordered probit models. Model 1a presents the results for all three regions, 1b for the North and 1c for the South. The number of observations in the Central region was limited, so the regression for this area was not estimated. The results show that most explanatory variables were statistically significant in all models. Socio-demographic variables significantly affected drivers' behavioral intention to adopt ridesharing in the gig economy. Firstly, age had a positive relationship with the ridesharing participation intention of driver-partners within 5 years. The driver-partners' intention to join the gig economy increased with age, but then at a certain age, it

Table 3. Main independent and control variables

Variable	Description
AGE	The age of respondents in the year of the survey. The model includes AGE ² to capture the quadratic relationship between age and intention to adopt ridesharing if any
EDU	Educational level of respondents in which 1 equals primary and 8 equals the graduate level
EXPERI	The number of months that a driver-partner has worked in the gig economy
VEHICLE	Kind of vehicle used in the gig economy. 1 if the respondent uses a car; 0 otherwise
SALARY	The monthly salary a respondent earns, in million dong (local currency)
ECONOMIC STATUS	The respondent family's economic status, using a Likert scale from 1 to 5, where 1 equals poor, and 5 equals wealthy. This variable is a binary one in the model, with 1 if the respondent chooses a particular status; 0 otherwise
ECONBE	Participating in the gig economy benefits me, my family, and society/economy. Likert scale from 1 to 5 in which 1 is the lowest level of agreement and 5 is the highest level of agreement
TIMEBE	Being a driver-partner in the gig economy helps me manage my time better, measured using a Likert scale from 1 to 5 in which 1 is the lowest level of agreement while 5 is the highest level of agreement
ENJOY	I am a driver-partner in the gig economy to satisfy my passion for traveling and moving vehicles. Measured using a Likert scale from 1 to 5 in which 1 is the lowest level of agreement while 5 is the highest level of agreement

began to decrease. In other words, the relationship between age and intention to join the gig economy is quadratic. The maximum ages for driver-partners to leave the gig economy are 48.26, 42.56, and 48.82 years nationwide, in the North and the South, respectively. These ages seem logical since, at these ages, drivers need to find other jobs as their health begins to worsen over time.

The models' findings show that driver-partners' educational level was negatively associated with their intention to stay in the work of ridesharing. In addition, drivers' experiences revealed other information about their behavioral intention to provide ridesharing services. For the vehicle variable, the result indicates that car driver-partners tend to stay longer in this work compared to the motorbike group.

Table 4. Ordered probit estimation results

Variable	All 3 regions (1a)	The North (1b)	The South (1c)
AGE	0.112[0.032]***	0.152[0.056]***	0.122[0.045]***
AGE2	-0.001[0.000]***	-0.002[0.001]**	-0.001[0.001]**
EDU	-0.135[0.025]***	-0.107[0.041]***	-0.135[0.038]***
EXPERI	0.013[0.003]***	0.023[0.005]***	0.007[0.004]*
VEHICLE			
1. Motobike	Ref	Ref	Ref
2. Car	0.356[0.139]***	0.217[0.234]	0.809[0.238]***
SALARY income now	0.022[0.011]**	0.072[0.020]***	-0.022[0.015]
ECONO STATUS			
1. Poor	Ref	Ref	Ref
2. Nearly poor	-0.465[0.185]**	-0.728[0.311]**	-0.444[0.292]
3. Normal	-0.598[0.151]***	-0.635[0.254]**	-0.751[0.242]***
4. Rich	-0.593[0.267]**	-0.664[0.421]	-0.573[0.410]
ECO BENEFIT	-1.068[0.319]***	-1.031[0.492]**	-0.650[0.658]
TIMEPRE	0.562[0.353]	0.897[0.542]*	0.070[0.694]
ENJOY	-0.646[0.253]**	-0.039[0.384]	-1.809[0.477]***
ECOxTIME	0.005[0.061]	0.027[0.089]	-0.134[0.106]
ECOxENJOY	0.306[0.082]***	0.266[0.131]**	0.377[0.153]**
TIMExENJOY	-0.112[0.075]	-0.231[0.115]**	0.122[0.149]
Observation	990	348	521
LR chi ²	303.91***	149.89***	162.31***
Pseudo	0.185	0.210	0.228
Log-likelihood	-669.642	-281.367	-275.171

Note: *, ** and *** denote significant levels of 10%, 5% and 1% in consequence.

The current income from being partners in the gig economy and economic conditions also provides some good information. With significant coefficients, the results indicate that persons with higher current income working as partners with sharing platform companies are more likely to join this work in all three regions and the North. Interestingly, the economic benefits of driver-partners have a negative relationship with the intention to adopt ridesharing in models 1a and 1b, and it has a significant relationship with the dependent variable.

In Figure 1, in all three regions, the marginal effect of enjoyment levels varies and depends on economic preferences to the probability of intention to adopt gig work. In detail, the likelihood of staying in gig work is strongly affected by workers expressing either of two enjoyment levels, including “Agree” and “Strongly agree.” This result was similar in the North and the South (Figure 2 and Figure 3), where the marginal effect of enjoyment levels also varied, depending on the respondent’s level of agreement with economic preferences for gig work.

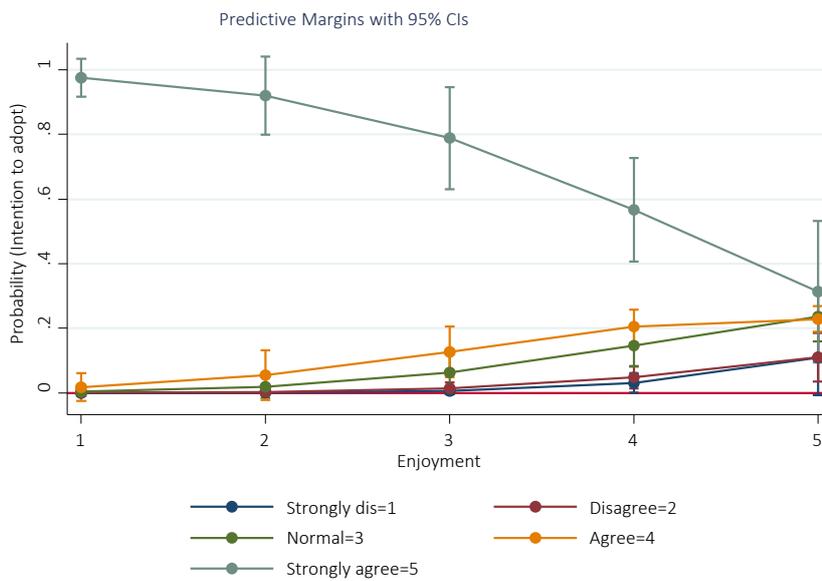


Figure 1. Marginal effects of interaction between economic benefit and enjoyment on the probability of intention to join the gig economy (all three regions)

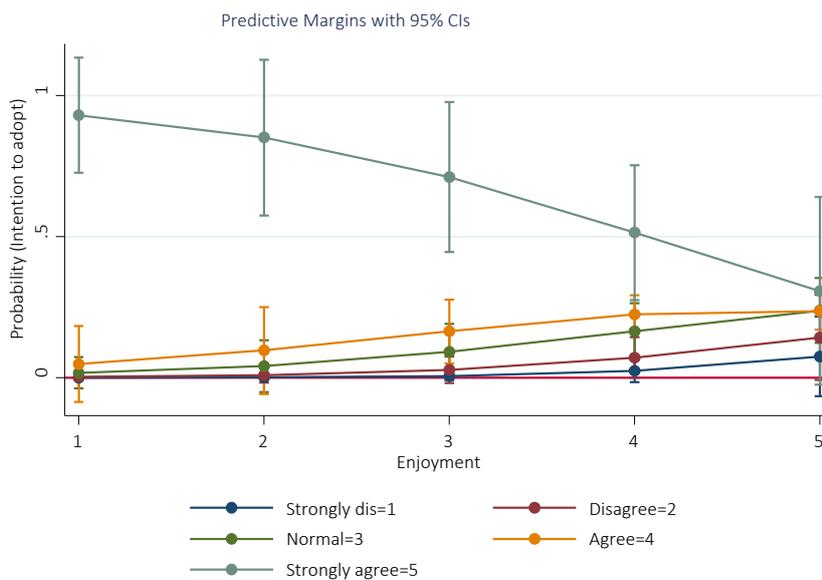


Figure 2. Marginal effects of interaction between economic benefit and enjoyment on the probability of intention to join the gig economy (in the North)

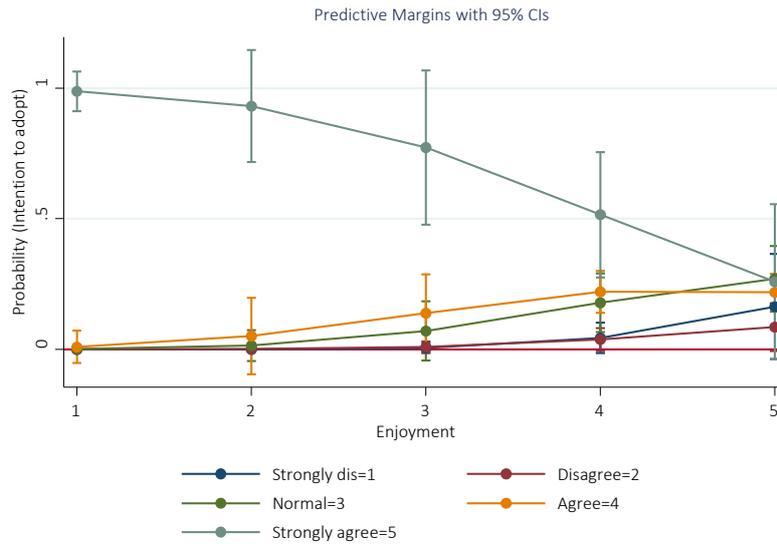


Figure 3. Marginal effects of interaction between economic benefit and enjoyment on the probability of intention to join the gig economy (in the South)

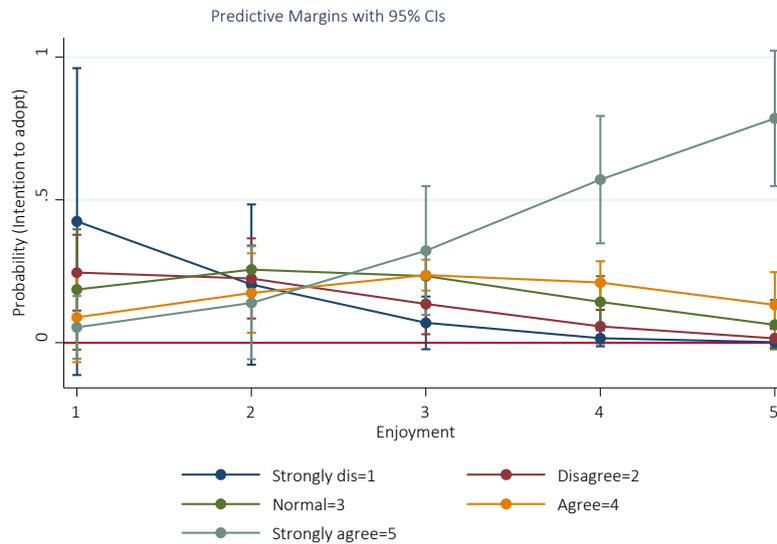


Figure 4. Marginal effects of interaction between time preference and enjoyment on the probability of intention to join the gig economy (in the North)

Figure 4 presents the interaction between time preference and enjoyment on the probability of joining the gig economy in the North. The interaction of time preference and time enjoyment is significantly negative.

Generally, the hypotheses *H1* and *H2* are accepted. It means that economic benefit and time preference have positive impacts on the intention of driver-partners to stay more in the new economy model. Similarly, the hypotheses *H3* and *H4*, the interactions among these variables, are also accepted but in some cases only.

4. DISCUSSION

The coefficients for educational levels in all models are statistically significant, suggesting that the higher the educational level driver-partners have, the less likely they are to stay in this kind of work. As expected, drivers with more experience will likely stay longer in the gig economy. Experienced driver-partners may indeed operate their vehicles and services better than other partners; consequently, they will stay in this work longer. Perhaps they are familiar with the job, routes, and regular passengers; consequently, they are more willing to stay in the ridesharing market.

In developed countries, ridesharing platforms provide mainly automobiles, but in developing ones, motorbikes are more prevalent in this gig economy. The results show that car driver-partners stay longer in this work than motorbike partners. This result recommends a higher demand for car services in the gig economy, which may reflect the better economic situation in developing countries. In addition, working with automobiles does not include severe health hazards as those experienced by motorbike driver-partners, such as noise, dust, and accidents. Another aspect is that the benefit and promotion policies of ridesharing companies are better for car drivers; thus, more driver-partners want to remain in this work.

Driver-partners' current income and economic status may affect workers' intention to stay longer or leave the gig environment. As expected, the results show that respondents with better financial conditions exhibit reduced intentions to stay in the gig economy. Some recent studies have postulated that ridesharing mobility is cheaper than non-sharing mobility and that financial reward is an essential factor in the use of sharing services, to the extent that sharing can be an excellent alternative to owning a vehicle (Goel & Haldar, 2020). Being a partner in sharing platform companies indeed improves poor individuals' lives. When this new type of work came to developing nations like Vietnam, it helped many poor individuals earn money for themselves and their families. This result supports the findings of d'Orey and Ferreira (2015) and Li et al. (2018). They noted that ridesharing facilitates income redistribution by helping poor people with access to affordable transport means (as customers) or secondary jobs (as drivers). This finding is a revealing base for authorities and policymakers to understand the working class characteristics of this platform in the economic sector.

The most critical variables worth exploring are gig workers' economic and time preferences, in addition to job enjoyment. Interestingly, higher economic

benefits to workers and their families do not guarantee an increased intention to be driver-partners in the future. Economic preference is only one critical factor that motivates gig workers to stay longer. Similarly, respondents with higher levels of enjoyment of traveling and vehicles have a lower intention to remain on this platform. These findings need further studies with qualitative approaches to determine the latent and factual factors that motivate gig workers. The findings of this paper do not concur with those reported by Wang et al. (2019) or Hwang and Griffiths (2017). Specifically, Amirkiaee and Evangelopoulos (2018) showed that in case of high anxiety with transportation, the trust in ridesharing stakeholders, together with economic and time benefits, will encourage people to join ridesharing. Kim et al. (2017) identified motivational variables that frame riders' perceptions of and attitudes toward ridesharing services and proposed a research model including motivational factors and those from the technology acceptance model to explain the adoption of car sharing. These authors found that perceived reliability, compatibility, and enjoyment of car-sharing services, as well as users' innovative tendencies, were positively associated with usage intention.

In the ordered probit models in the present study, interaction terms between economic preference, time preference, and enjoyment for driver-partners were estimated to investigate whether the effect of these explanatory variables on the intention to adopt the gig economy changed depending on their values. For example, in the North, Figure 4 shows the marginal effects of the interaction between time preference and enjoyment on the probability of joining the gig economy. The negative interaction term means that time preference of driver-partners strengthens the negative effect of respondents' enjoyment level on intention to join the gig economy. In other words, the impact of enjoyment levels will be less negative with an increase in time preference. Thus, time preference is vital in keeping driver-partners operating in the ridesharing gig economy.

CONCLUSION

Through investigating determinants of behavioral intention to adopt the ride-hailing service, this paper reveals that joining the ride-hailing platform as a driver-partner is a good option for those with low economic status and educational levels in Vietnam. Thus, the factor of economic benefits will determine the intention of these drivers to stay more in the gig economy. In addition, time benefits also play an

important role when the driver-partners believe in their answers from the survey. The paper adds to the current research by providing more profound evidence on determinants of drivers' intention to stay in the gig economy. To some extent, income may as well be a good tool to keep the driver-partners working longer in the gig economy.

The findings of the paper help explain the boom of ride-hailing services in Vietnam from the viewpoint of service providers and show factors that policymakers may consider in forecasting the trend of this labour market. Future studies may focus more on drivers' time preferences and enjoyment to better capture factors that strongly determine driver-partners' intention to join and stay in the ridesharing economy.

AUTHOR CONTRIBUTIONS

Conceptualization: Hung Le Van, Trung Nguyen Ngoc, Phuong Pham Thi Thu, Dao Nguyen Thi.

Data curation: Hung Le Van.

Formal analysis: Hung Le Van.

Funding acquisition: Hung Le Van, Dao Nguyen Thi.

Investigation: Hung Le Van, Trung Nguyen Ngoc, Phuong Pham Thi Thu.

Methodology: Hung Le Van, Phuong Pham Thi Thu.

Project administration: Hung Le Van, Trung Nguyen Ngoc.

Resources: Trung Nguyen Ngoc, Phuong Pham Thi Thu.

Software: Trung Nguyen Ngoc.

Supervision: Hung Le Van.

Visualization: Trung Nguyen Ngoc, Phuong Pham Thi Thu, Dao Nguyen Thi.

Writing – original draft: Hung Le Van, Trung Nguyen Ngoc, Dao Nguyen Thi.

Writing – review & editing: Hung Le Van, Phuong Pham Thi Thu.

REFERENCES

1. Acheampong, R. A., & Siiba, A. (2020). Modelling the Determinants of Car-Sharing Adoption Intentions among Young Adults: The Role of Attitude, Perceived Benefits, Travel Expectations and Socio-Demographic Factors. *Transportation*, 47(5), 2557-2580. <https://doi.org/10.1007/s11116-019-10029-3>
2. Akbari, M., Moradi, A., SeyyedAmiri, N., Zúñiga, M. Á., Rahmani, Z., & Padash, H. (2021). Consumers' Intentions to Use Ridesharing Services in Iran. *Research in Transportation Business and Management*, 41, 100616. <https://doi.org/10.1016/j.rtbm.2020.100616>
3. Alemi, F., Circella, G., Handy, S., & Mokhtarian, P. (2018). What Influences Travelers to Use Uber? Exploring the Factors Affecting the Adoption of on-Demand Ride Services in California. *Travel Behaviour and Society*, 13, 88-104. <https://doi.org/10.1016/j.tbs.2018.06.002>
4. Amirkieae, S. Y., & Evangelopoulos, N. (2018). Why Do People Rideshare? An Experimental Study. *Transportation Research Part F: Traffic Psychology and Behaviour*, 55, 9-24. <https://doi.org/10.1016/j.trf.2018.02.025>
5. Ashrafi, D. M., Habiba, W., & Alam, I. (2020). An Assessment of the Behavioural Intention for Using Ride-Sharing Services: Empirical Evidence from a Developing Country. *Malaysian Journal of Consumer and Family Economics*, 24(1), 36-62.
6. Bardhi, F., & Eckhardt, G. M. (2012). Access-Based Consumption: The Case of Car Sharing. *Journal of Consumer Research*, 39(4), 881-898. <https://doi.org/10.1086/666376>
7. Becker, H., Ciari, F., & Axhausen, K. W. (2018). Measuring the Car Ownership Impact of Free-Floating Car-Sharing – A Case Study in Basel, Switzerland. *Transportation Research Part D: Transport and Environment*, 65, 51-62. <https://doi.org/10.1016/j.trd.2018.08.003>
8. Chaudhry, B., Yasar, A.-Ul-H., El-Amine, S., & Shakshuki, E. (2018). Passenger Safety in Ride-Sharing Services. *Procedia Computer Science*, 130, 1044-1050. <https://doi.org/10.1016/j.procs.2018.04.146>
9. d'Orey, P. M., & Ferreira, M. (2015). Can Ride-Sharing Become Attractive? A Case Study of Taxi-Sharing Employing a Simulation Modelling Approach. *IET Intelligent Transport Systems*, 9(2), 210-220. <https://doi.org/10.1049/iet-its.2013.0156>

10. Efthymiou, A. (2013). How Many Factors Influence the Meaning of Denominal and Deadjectival Verbs? The Case of Modern Greek Verbs In – (I) άζω. In *The Semantics of Word Formation and Lexicalization* (pp. 225-246). Edinburgh University Press. <https://doi.org/10.1515/9780748689613-014>
11. Fellows, N. T., & Pitfield, D. E. (2000). An Economic and Operational Evaluation of Urban Car-Sharing. *Transportation Research Part D: Transport and Environment*, 5(1), 1-10. [https://doi.org/10.1016/S1361-9209\(99\)00016-4](https://doi.org/10.1016/S1361-9209(99)00016-4)
12. Fishman, E., Washington, S., Haworth, N., & Watson, A. (2015). Factors Influencing Bike Share Membership: An Analysis of Melbourne and Brisbane. *Transportation Research Part A: Policy and Practice*, 71, 17-30. <https://doi.org/10.1016/j.tra.2014.10.021>
13. Giang, P. T., Trang, P. T., & Yen, V. T. (2017). An Examination of Factors Influencing the Intention to Adopt Ridesharing Applications: A Case Study in Vietnam of Business Administration of Banking Academy in Vietnam. *Imperial Journal of Interdisciplinary Research (IJIR)*, 3(10), 618-623. Retrieved from https://www.academia.edu/35098007/An_Examination_of_Factors_Influencing_the_Intention_to_Adopt_Ride-Sharing_Applications_A_Case_Study_in_Vietnam_Banking_Academy_in_Vietnam_2_3_Lecturers_at_Faculty_of_Business_Administration_of_Banking_Academy_in_Vietnam
14. Gidófalvi, G., Herényi, G., & Bach Pedersen, T. (2008). Instant Social Ride-Sharing. *Proceedings of the Fifteenth World Congress on Intelligent Transport Systems* (pp. 3534-3541). Retrieved from <https://vbn.aau.dk/en/publications/instant-social-ride-sharing>
15. Goel, P., & Haldar, P. (2020). Shared Ride-Hailing Service in India: An Analysis of Consumers' Intention to Adopt. *International Journal of Business and Emerging Markets*, 12(3), 336-353. <https://doi.org/10.1504/IJBEM.2020.10031489>
16. Hamari, J., Sjöklint, M., & Ukkonen, A. (2016). The Sharing Economy: Why People Participate in Collaborative Consumption. *Journal of the Association for Information Science and Technology*, 67(9), 2047-2059. <https://doi.org/10.1002/asi.23552>
17. Hwang, J., & Griffiths, M. A. (2017). Share More, Drive Less: Millennials Value Perception and Behavioral Intent in Using Collaborative Consumption Services. *Journal of Consumer Marketing*, 34(2), 132-146. <https://doi.org/10.1108/JCM-10-2015-1560>
18. Jacobson, S. H., & King, D. M. (2009). Fuel Saving and Ridesharing in the US: Motivations, Limitations, and Opportunities. *Transportation Research Part D: Transport and Environment*, 14(1), 14-21. <https://doi.org/10.1016/j.trd.2008.10.001>
19. Khan, M. A., Etmnani-Ghasrodashti, R., Kermanshachi, S., Rosenberger, J. M., Pan, Q., & Foss, A. (2022). Do Ridesharing Transportation Services Alleviate Traffic Crashes? A Time Series Analysis. *Traffic Injury Prevention*, 23(6), 333-338. <https://doi.org/10.1080/15389588.2022.2074412>
20. Kim, D., Ko, J., & Park, Y. (2015). Factors Affecting Electric Vehicle Sharing Program Participants' Attitudes about Car Ownership and Program Participation. *Transportation Research Part D: Transport and Environment*, 36, 96-106. <https://doi.org/10.1016/j.trd.2015.02.009>
21. Kim, H., Choi, K. H., Kim, K. J., & Park, E. (2017). From Owning to Sharing: Understanding the Emergence of Social Sharing Services. *Program: Electronic Library and Information Systems*, 51(2), 102-115. <https://doi.org/10.1108/PROG-02-2016-0010>
22. Levinger, C., Hazon, N., & Azaria, A. (2020). Human Satisfaction as the Ultimate Goal in Ridesharing. *Future Generation Computer Systems*, 112, 176-184. <https://doi.org/10.1016/j.future.2020.05.028>
23. Li, Y., Taeihagh, A., & De Jong, M. (2018). The Governance of Risks in Ridesharing: A Revelatory Case from Singapore. *Energies*, 11(5), 1277. <https://doi.org/10.3390/en11051277>
24. Li, Z., Liang, C., Hong, Y., & Zhang, Z. (2022). How Do On-Demand Ridesharing Services Affect Traffic Congestion? The Moderating Role of Urban Compactness. *Production and Operations Management*, 31(1), 239-258. <https://doi.org/10.1111/poms.13530>
25. Litman, T. (2000). Evaluating Carsharing Benefits. *Transportation Research Record*, 1702(1), 31-35. <https://doi.org/10.3141/1702-04>
26. Lu, K., & Wang, X. (2020). Analysis of Perceived Value and Travelers' Behavioral Intention to Adopt Ride-Hailing Services: Case of Nanjing, China. *Journal of Advanced Transportation*, 2020, 4380610. <https://doi.org/10.1155/2020/4380610>
27. Moody, J., Middleton, S., & Zhao, J. (2019). Rider-to-Rider Discriminatory Attitudes and Ridesharing Behavior. *Transportation Research Part F: Traffic Psychology and Behaviour*, 62, 258-273. <https://doi.org/10.1016/j.trf.2019.01.003>
28. Nazari, F., Noruzoliaee, M., & Mohammadian, A. (K.) (2018). Shared versus Private Mobility: Modeling Public Interest in Autonomous Vehicles Accounting for Latent Attitudes. *Transportation Research Part C: Emerging Technologies*, 97, 456-477. <https://doi.org/10.1016/j.trc.2018.11.005>
29. Prieto, M., Stan, V., & Baltas, G. (2022). New Insights in Peer-to-Peer Carsharing and Ridesharing Participation Intentions: Evidence from the 'Provider-User' Perspective. *Journal of Retailing and Consumer Services*, 64, 102795. <https://doi.org/10.1016/j.jretconser.2021.102795>
30. Ruch, C., Lu, C., Sieber, L., & Frazzoli, E. (2021). Quantifying the Efficiency of Ride Sharing. *IEEE Transactions on Intelligent*

- Transportation Systems*, 22(9), 5811-5816. <https://doi.org/10.1109/TITS.2020.2990202>
31. Sijabat, R. (2019). Sharing Economy: A Study on the Factors Influencing User's Motivation to Use Ride Sharing Platforms. *DeReMa Jurnal Manajemen*, 14(1), 65-87. <https://doi.org/10.19166/DEREMA.V14I1.1367>
 32. Stiglic, M., Agatz, N., Savelsbergh, M., & Gradisar, M. (2016). Making Dynamic Ride-Sharing Work: The Impact of Driver and Rider Flexibility. *Transportation Research Part E: Logistics and Transportation Review*, 91, 190-207. <https://doi.org/10.1016/j.tre.2016.04.010>
 33. Van Veldhoven, Z., Koninckx, T., Sindayihebura, A., & Vanthienen, J. (2022). Investigating Public Intention to Use Shared Mobility in Belgium through a Survey. *Case Studies on Transport Policy*, 10(1), 472-484. <https://doi.org/10.1016/j.cstp.2022.01.008>
 34. Wang, Y., Gu, J., Wang, S., & Wang, J. (2019). Understanding Consumers' Willingness to Use Ride-Sharing Services: The Roles of Perceived Value and Perceived Risk. *Transportation Research Part C: Emerging Technologies*, 105, 504-519. <https://doi.org/10.1016/j.trc.2019.05.044>
 35. Wang, Y., Wang, S., Wang, J., Wei, J., & Wang, C. (2020). An Empirical Study of Consumers' Intention to Use Ride-Sharing Services: Using an Extended Technology Acceptance Model. *Transportation*, 47(1), 397-415. <https://doi.org/10.1007/s11116-018-9893-4>
 36. Wooldridge, J. M. (2001). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, Massachusetts London, England: The MIT Press. Retrieved from <https://ipcig.org/evaluation/apoio/Wooldridge%20-%20Cross-section%20and%20Panel%20Data.pdf>
 37. Xiao, J., & Goulias, K. G. (2022). Perceived Usefulness and Intentions to Adopt Autonomous Vehicles. *Transportation Research Part A: Policy and Practice*, 161, 170-185. <https://doi.org/10.1016/j.tra.2022.05.007>
 38. Yang, Y., Tian, Q., & Wang, Y. (2020). Who Is More Likely to Get a Ride and Where Is Easier to Be Picked up in Ride-Sharing Mode? *Journal of Management Science and Engineering*, 5(4), 264-286. <https://doi.org/10.1016/j.jmse.2020.09.003>
 39. Yunus, E., Susilo, D., Riyadi, S., Indrasari, M., & Putranto, T. D. (2019). The Effectiveness Marketing Strategy for Ride-Sharing Transportation: Intersecting Social Media, Technology, and Innovation. *Entrepreneurship and Sustainability Issues*, 7(2), 1424-1434. [https://doi.org/10.9770/jesi.2019.7.2\(44\)](https://doi.org/10.9770/jesi.2019.7.2(44))
 40. Zhang, Y., & Leiming, L. (2020). Intention of Chinese College Students to Use Carsharing: An Application of the Theory of Planned Behavior. *Transportation Research Part F: Traffic Psychology and Behaviour*, 75, 106-119. <https://doi.org/10.1016/j.trf.2020.09.021>