



## Intention to participate in voluntary social insurance in an emerging economy: An examination based on extended theory of planned behavior

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### ABSTRACT

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The study aimed to assess factors influencing the intention to participate in voluntary social insurance among informal sector workers in Vietnam, an emerging economy in Southeast Asia. Primary data collected from 460 respondents was used for SEM analysis. The study showed that two parts of the Theory of Planned Behavior (TPB) model—attitude and perceived behavioral control—make people more likely to sign up for voluntary social insurance. Government incentive policies, appropriateness, affordability, and perceived difficulties during the COVID-19 pandemic also predict the intention to participate. The research findings rejected the role of subjective norms in influencing the intention to participate. This research has identified factors affecting intention to subscribe to voluntary insurance among independent laborers in an emerging market like Vietnam, where there used to be larger proportion of formal workers who had to follow mandatory social insurance. Based on the revealed impact factors, policymakers and labor-related authority officials may have insights into how to encourage more informal workers to purchase voluntary insurance. This is particularly critical in a context where the majority of the population, especially independent laborers, are not used to subscribing to insurance in general if not required.

**Contribution/Originality:** The Theory of Planned Behavior (TPB) model is used in this study to look at how different factors affect people's plans to sign up for voluntary social insurance services. The findings enrich existing knowledge on the research topic and introduce new factors that may affect individual behavior toward this service. Furthermore, the study provides practical implications for policymakers to expand the voluntary social insurance network in Vietnam.

### 1. INTRODUCTION

Vietnam, whose population is aging rapidly, had a percentage of senior residents of 12% in 2019, being forecasted to exceed a quarter of the total population by 2050 (Nguyen, 2023). In addition, the proportion of informal laborers in the agricultural, forestry, and fishery sectors is rising in this country as well, reported to account for more than two-thirds of the national workforce in 2021. Although Vietnam's informal labor rate is lower than that of some regional countries like Cambodia, Indonesia, and Myanmar, it remains high compared to many countries worldwide. While informal labor is a necessary component, supporting the labor market during economic downturns, a sustainable and developed economy cannot depend on a high rate of informal labor. Therefore, Vietnam and other countries have been exploring strategies to reduce this rate (Department of

Population and Labor Statistics of Vietnam, 2023). To enhance the stability of workers' lives, the Vietnamese Government introduced voluntary social insurance in 2008, supplementing the existing compulsory social insurance. Historically, only full-time, contract workers in the formal sector have benefited from compulsory social insurance, as their employers are mandated to contribute to these payments (Government of Vietnam, 2018). This policy excludes a significant portion of workers in the informal, non-state sector who are frequently uninsured, lack contracts, possess limited skills, and often work in hazardous conditions with low and unstable wages. We anticipate that voluntary social insurance will serve as an alternative for this disadvantaged group of workers (Mai, Nguyen, Nguyen, & Nguyen, 2021).

By the end of 2023, Vietnam had 1.83 million individuals participating in voluntary social insurance, accounting for 3.92% of the working-age population. Although this figure surpassed the target of 1.42% set for 2025, the number of participants remains modest, which directly impacts the old-age security of a significant portion of the population (Tu, 2024). Therefore, studies that look into the things that make people want to or not want to join voluntary social insurance are very important and could help shape the future of the voluntary social insurance system. Numerous studies in Vietnam have recognized the critical importance of encouraging participation in voluntary social insurance. Hien, Liem, and Ghi (2024) used behavioral reasoning theory to show that "reasons for," "reasons against," and consumers' attitudes affect their choice to buy voluntary social insurance. Cultural values have a big impact on these attitudes and perceptions. Do and Giang (2023) utilized data from the Labor Force Survey and applied Heckman's two-step probit selection model across four groups of informal workers. Their findings revealed that factors such as age, highest education level, number of school-age children, household members enrolled in social insurance, job position, and income level considerably affected informal workers' decisions to engage in voluntary social insurance. Nguyen, Nguyen, Nguyen, and Branch (2019) said that in Tra Vinh province, Vietnam, participants are mostly affected by their knowledge of voluntary social insurance, their attitudes toward social security, their income, social media, their awareness of health issues in old age, and their sense of moral responsibility. Van Bui, Nguyen, and Dinh (2023) conducted a survey of 400 individuals, analyzing the data using SPSS 20 software with both exploratory factor analysis and multiple regression analysis. Their results indicated that in the rural areas of Thai Nguyen province, the intention to participate in voluntary social insurance was influenced by five main factors: information, trust, attitude, risk perceptions, and knowledge.

However, the number of empirical studies conducted in Vietnam remains limited. Notably, these studies are often small-scale, typically focusing on a single province. The Theory of Planned Behavior (TPB) model has not been used in any studies to explain people's intentions to join voluntary social insurance, even though it is commonly used to understand how people buy insurance (Brahmana, Brahmana, & Memarista, 2018; Raza, Ahmed, Ali, & Qureshi, 2020). Therefore, assessing the factors influencing the intention to participate in voluntary social insurance can significantly contribute to both theoretical and practical knowledge. This study was conducted with the following main objectives:

- (1) Establishing a scale and model to evaluate the factors affecting the intention to participate in voluntary social insurance among employees in informal sectors in Vietnam.
- (2) Assessing in detail the influence of the proposed factors on the intention to participate in voluntary social insurance.
- (3) Proposing policy implications for the development of the voluntary social insurance system in Vietnam.

## 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### 2.1. Theory of Planned Behavior

Theory of Planned Behavior (TPB) (Ajzen, 1985) which explains the relationship between beliefs and individual behavior, is adopted as the theoretical base for this study. The framework of TPB suggests that attitudes, subjective norms, and perceived behavioral control have an impact on intentions and actions. Many researchers have changed

and tweaked this model to better measure and explain how factors relate to each other in each study (Hayat et al., 2021; Liu, Lin, & Feng, 2018). Therefore, in this study, the author also incorporated four additional variables into the model to better explain the situation of voluntary social insurance participation in a developing nation like Vietnam, namely: awareness, perceived risk, perceived compatibility, and relative advantage.

In the field of individual insurance participation behavior, Md Husin and Ab Rahman (2016); Kazaure (2019) and Raza et al. (2020) applied TPB in their studies since attitudes and perceived behavioral control are cognitive factors that may influence the decision to subscribe to insurance or not. Nguyen, Vu, Greenland, Nguyen, and Vu (2022) on the other hand, said that more real-world research is needed to fill in the theoretical gaps and overcome the theoretical limitations in explaining what TPB can do when things change. For instance, in the case of insurance, the various types, regulatory situation, and the development of the insurance market may demand further factors to examine how individuals intend to pay. For these reasons, this study extends the TPB model in order to explore further factors and examine them empirically in the field of voluntary social insurance in Vietnam.

## 2.2. The Constructs of TPB Model: Attitudes, Perceived Behavioral Control, Subjective Norms, and Intention

Ajzen (1991) defined attitude as a psychological inclination reflected in the positive or negative assessment of a specific entity. When an individual has more positive attitudes towards a specific behavior, they are more likely to engage in that behavior (Vu et al., 2024). In finance-related fields, there have been several studies using TPB and suggesting positive attitude as a predictor of individual intentions (Kazaure, 2019). Particularly in insurance investment, Brahmana et al. (2018) and Mamun, Rahman, Munikrishnan, and Permarupan (2021) found positive attitude promoted individual health insurance purchasing intention, respectively, in Indonesia and Malaysia. This intrigues the author to explore if a positive attitude may leave a similar impact when it comes to purchasing social insurance, which is not compulsory in Vietnam and less concerning than health insurance. Therefore, this study proposes the following hypothesis:

*H<sub>1</sub>: Attitude promotes intention to participate in voluntary social insurance.*

Perceived behavioral control (PBC) refers to an individual's perception of the ease or difficulty in performing a specific behavior. Essentially, an individual's confidence in their ability to execute a particular task significantly influences their intentions and actions (Ajzen, 1991). Md Husin and Ab Rahman (2016) suggest that individuals acquiring adequate understandings of the function and benefits of a certain social security product and being able to pay for it are likely to purchase it, especially health or social insurance. Brahmana et al. (2018) and Raza et al. (2020) found similar effects of the perceived behavioral control in the process of selecting the type of insurance. Hence, the author would like to reexamine the impact of this factor for the case of voluntary social insurance in Vietnam with the following hypothesis:

*H<sub>2</sub>: Perceived behavioral control promotes intention to participate in voluntary social insurance.*

Ajzen (1991) defined subjective norms as the perceived social pressure to either engage in or abstain from a particular behavior. This factor is regarded as a significant predictor of individual intentions (Vu, Nguyen, Vu, Tran, & Vu, 2023). In the aspect of insurance, Raza et al. (2020) suggest that subjective norms motivate individuals to purchase Islamic insurance in Malaysia. In recent years, the Vietnamese government has put in much effort in changing individual perceptions toward voluntary social insurance in a more positive direction (Nguyen et al., 2021). This is a condition to form subjective norms for individuals about this type of insurance; hence, the author proposes the following hypothesis:

*H<sub>3</sub>: Subjective norm promotes intention to participate in voluntary social insurance.*

## 2.3. Government Incentive Policies

Government is believed to play a critical role in promoting individuals to subscribe to voluntary social insurance (Gruber, 2000). Over the years, government interest and expenditure on social insurance have markedly

increased. Informal sector workers view voluntary social insurance as an effective solution for managing risks (Indimuli, Torm, Mitullah, Riisgaard, & Kamau, 2023). People also view it as a long-term strategy to achieve financial independence, which in turn lessens their reliance on relatives after retirement (Gschwind, 2021). Vietnam enacted the Social Insurance Law in 2006, and on January 1, 2008, voluntary social insurance regulations came into effect. These regulations outline the subjects, premiums, payment methods, and benefit levels. This policy enables workers to freely participate in and benefit from pensions upon retirement. Voluntary social insurance is defined as “a form of social insurance organized by the State, allowing participants to select appropriate premiums and payment methods according to their income, with state support policies for retirement and death insurance benefits” (Mai et al., 2021). Notably, Van Bui et al. (2023) demonstrated that trust in Government is a key determinant affecting intention to participate in voluntary social insurance in Vietnam. Therefore, we propose hypothesis H4:

*H<sub>4</sub>: Government incentive policies promote intention to participate in voluntary social insurance.*

#### 2.4. Perceived Difficulties During the Covid-19 Pandemic

During the COVID-19 pandemic, individuals have experienced severe economic and mental distress (Nguyen, Tran, & Nguyen, 2021). Qian (2021) found that the effects of the COVID-19 pandemic may alter the insurance service market, increasing individuals' interest in insurance services. Gerard, Imbert, and Orkin (2020) suggested that expanding the social insurance network would enhance the ability to support citizens, particularly in low-income countries. In this study, we argue that life hardships, especially financial issues, will make individuals working in the informal sector more aware of the need to have plans to cope with similar situations in the future. Consequently, they will be more interested in voluntary social insurance. However, to our knowledge, the connection between perceived difficulties during the COVID-19 pandemic and the intention to participate voluntarily in social insurance has yet to be confirmed. Hence, hypothesis H5 is formulated as follows:

*H<sub>5</sub>: Perceived difficulties during COVID-19 pandemic promote intention to participate in voluntary social insurance.*

#### 2.5. Appropriateness and Affordability

An article by Mai et al. (2021) said that workers in Vietnam are likely to join voluntary social insurance if they think it is appropriate, which means that the insurance should fit in with their retirement plans. In particular, the interview results of this study show that most of the people who took part stressed how important voluntary social insurance is and how appropriate policies are, such as beneficiaries and premiums. More than 85% of those people said that voluntary social insurance is a safe way to plan for their retirement. However, quantitative analysis using robust statistical tools like SEM has not verified these statements. Therefore, we propose hypothesis H6:

*H<sub>6</sub>: Appropriateness promotes intention to participate in voluntary social insurance.*

Indimuli et al. (2023) reported that financial barriers, such as low income and difficulty in maintaining voluntary social insurance contributions, are significant obstacles to the development of social insurance systems. Furthermore, Marmor and Mashaw (2007) suggested that affordability is a common criticism among individuals with limited awareness of social insurance. Notably, Adebayo et al. (2015) systematically reviewed and identified affordability as a key factor motivating individuals to participate in health insurance. Similarly, Dror et al. (2016) demonstrated that affordability is the primary consideration when individuals decide to purchase health insurance. Thus, hypothesis H7 is proposed as follows:

*H<sub>7</sub>: Affordability promotes intention to participate in voluntary social insurance.*

Based on the TPB model and hypotheses development section, the research model is illustrated as Figure 1.

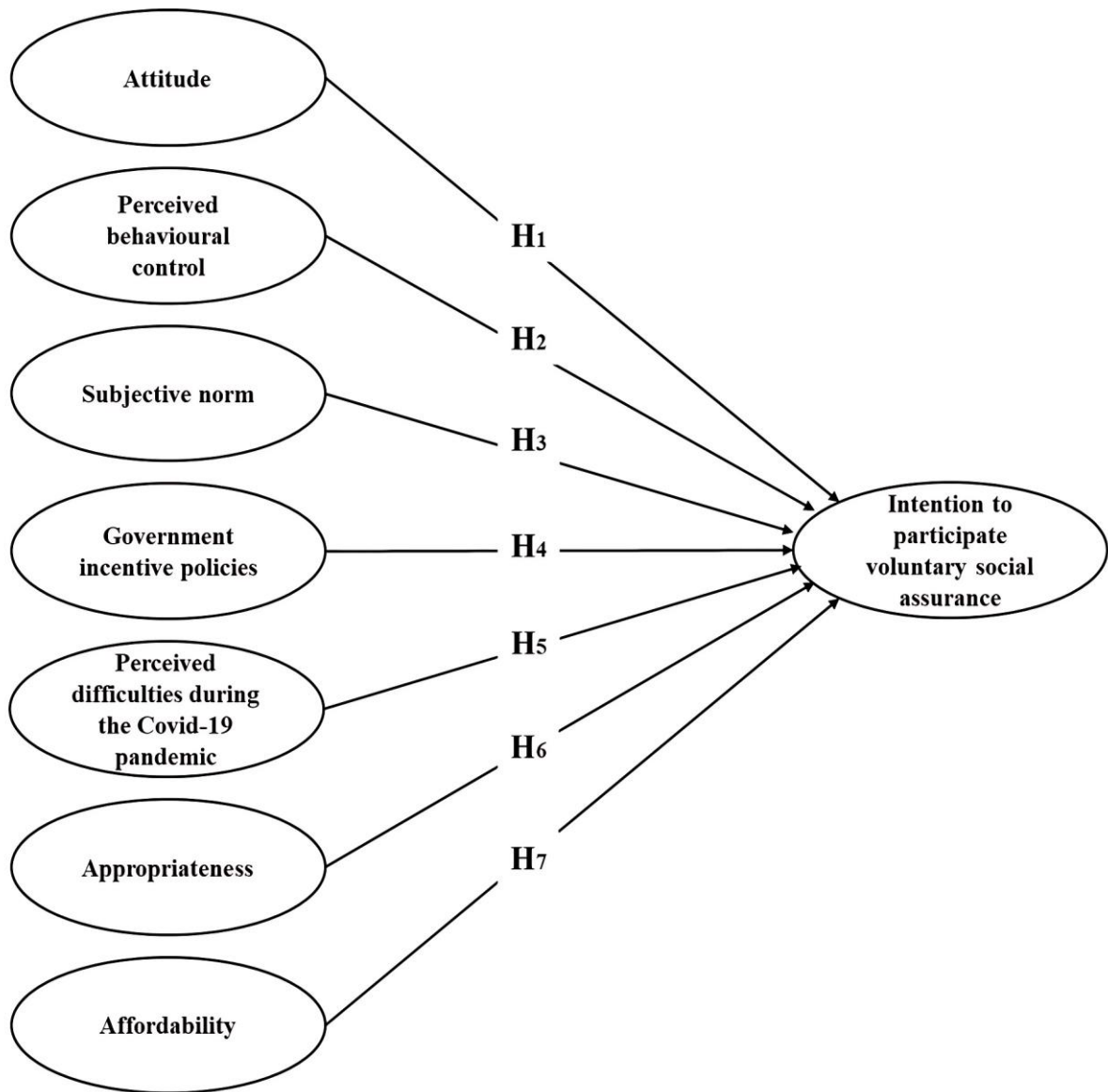


Figure 1. Research model.

### 3. METHODOLOGY

#### 3.1. Research Approach and Data Analysis

In order to achieve the research objectives, the author applied both interviews and mass surveys for collecting primary data and used quantitative techniques in analyzing the data. For the first phase, in-depth interviews with experts and volunteers were conducted so as to adjust and finalize the measurement scale, which was developed on the basis of a literature review. Next, we conducted a pre-test with 80 customers and used Cronbach's alpha to reassess the measurement scale. All items met the reliability criteria, leading to the mass distribution of a questionnaire based on the Likert-7 measurement scale. Finally, we applied quantitative analyses to evaluate the reliability and validity of the measurement scale and to test the proposed hypotheses.

To provide a more detailed explanation, this study employed Structural Equation Modeling (SEM) alongside descriptive analysis to elucidate the research model. SEM is a robust statistical technique well-suited for investigating the psychological and behavioral patterns of individuals (Lowry & Gaskin, 2014). SEM is especially good at looking at firsthand information from people (Anderson & Gerbing, 1988) Studies that use Likert scales often employ SEM, as it effectively verifies both measurement and structural models (Civelek, 2018). SEM can be approached via two main methods: covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM). In comparison to CB-SEM, PLS-SEM offers distinct advantages, particularly in handling small sample sizes and

enhancing statistical explanation capabilities. Moreover, Reinartz, Haenlein, and Henseler (2009) found that PLS-SEM is highly effective for exploratory research that aims to extend established theories. Therefore, we selected PLS-SEM for this research. The study utilized SPSS 26 for descriptive analysis and PLS-SEM 4.0 for model assessment, hypothesis testing, and path analysis.

### 3.2. Measures

As briefly mentioned above, the author initially formed the measurement scale based on insights extracted from previous relevant literature. We then conducted in-depth interviews to review the appropriateness of the scale. Totally, five interviews were carried out with two PhDs majoring in economics, an experienced manager of voluntary social insurance at the Ministry of Labor—Invalids and Social Affairs of Vietnam, and two freelancers who have knowledge about voluntary social insurance. Thanks to the comments of the five interviewees, the initial scale was adjusted to better fit with Vietnamese insurance buyers, and then a pre-test was conducted with 80 respondents from the informal sector. Table 1 presents the finalized scale following the pre-test phase.

We designed the questionnaires in three parts. Part 1 included an introduction, ethical commitments, and instructions for respondents on how to answer the questions. Part 2 contained questions using a 7-point Likert scale to capture opinions ranging from 1 (strongly disagree) to 7 (strongly agree). Part 3 focused on demographic characteristics, including gender, age, work experience, education level, and income.

**Table 1.** Measurement scale and source.

Variables	Source
<b>Attitude (ATT)</b>	
1. Participating in voluntary social insurance is the right thing to do 2. I think voluntary social insurance is a smart solution 3. I think voluntary social insurance benefits me	Md Husin and Ab Rahman (2016)
<b>Subjective norm (SN)</b>	
1. Colleagues encouraged me to buy voluntary social insurance 2. My friends, who are important to me, want me to buy a voluntary social insurance contract 3. Most of the people who are important to me think that I should buy a voluntary social insurance contract	Liu et al. (2018)
<b>Intention to participate voluntary social insurance (INT)</b>	
1. Buying a voluntary social insurance will provide me with the future security I need most for my financial independence 2. I will encourage relatives to join voluntary social insurance 3. I want to join voluntary social insurance right now	Liu et al. (2018)
<b>Perceived behavioral control (PBC)</b>	
1. I have sufficient knowledge to purchase voluntary social insurance 2. I can buy voluntary social insurance without any help from anyone 3. I don't have any resourceful source about voluntary social insurance purchasing * 4. I can buy voluntary social insurance reasonably well on my own	Brahmana et al. (2018)
<b>Appropriateness (APP)</b>	
1. Voluntary social insurance is necessary and appropriate for retirement plans for workers in informal sector 2. Voluntary social insurance is a suitable solution for workers in the informal sector to be financially independent when they retire 3. Participating in voluntary social insurance is a social responsibility	Adapted from Mai et al. (2021)
<b>Perceived difficulties during Covid-19 pandemic (PDC)</b>	
1. During the Covid-19 pandemic, my family has lost a significant amount of income 2. During the Covid-19 pandemic, my income has decreased significantly 3. During the Covid-19 pandemic, I have fallen into financial difficulty 4. The Covid-19 pandemic has negatively impacted the economy and caused difficulties for the whole society 5. The Covid-19 pandemic period is a time of many difficulties 6. The Covid-19 pandemic has made me more aware of the need to have financial reserves to prevent risks	Adapted from Alhenawi and Yazdanparast (2022)
<b>Government incentive policies (GIP)</b>	
1. The government has made great efforts to encourage workers from the informal sector to participate in voluntary social insurance 2. The government commits to voluntary social insurance as a non-profit activity aimed at ensuring social security	Adapted from Nguyen et al. (2022)



Variables	Source
3. The government commits to implementing voluntary social insurance in the long term	
4. Citizens participating in voluntary social insurance enjoy many beneficial policies	
Affordability (AFF)	
1. Payment rate seems reasonable and affordable	Adapted from Mai et al. (2021)
2. Paying for voluntary social insurance is reasonable with my income	
3. Social insurance payment levels are diverse and help participating individuals make appropriate choices	

### 3.3. Data Collection

In Vietnam, up to 97.8% of informal workers do not participate in any form of insurance, with 35.5% of them being wage earners. Only a small proportion (2.1%) of informal workers reported participating in voluntary social insurance (GSO, 2022). This study collected primary data from informal sector workers interested in voluntary social insurance in the two largest cities in Vietnam, Hanoi and Ho Chi Minh City. These locations were chosen because they are economic, cultural, and political centers where workers have higher incomes, making them more likely to be interested in voluntary social insurance due to their better affordability. A convenience sampling method was used to collect data, with research team members present at public places such as train stations, shopping malls, supermarkets, and schools to approach suitable candidates. After distributing 600 surveys (300 in each city) over three months (from April to July 2024), the research team collected 460 responses that met the requirements for analysis. Table 2 describes the demographic characteristics of the research sample.

**Table 2.** Demographic characteristics of respondents.

Variables	Frequency	Percentage
Gender		
Male	228	49.57
Female	232	50.43
Age		
From 20 to 30 years old	139	30.22
From 31 to 40 years old	150	32.60
From 41 to 50 years old	108	23.48
Above 50 years old	63	13.70
Education level		
High school	125	27.17
Professional degree	92	20.00
College	87	18.91
Bachelor	105	22.83
Post graduate	51	11.09
Work experience		
Under 5 years	137	29.78
From 6 to 10 years	90	19.57
From 11 to 15 years	96	20.87
From 16 to 20 years	85	18.48
Above 20 years	52	11.30
Monthly income		
< 200 USD	63	13.70
200 - 400 USD	132	28.70
> 400 - 800 USD	153	33.26
> 800 - 1,200 USD	78	16.96
> 1,200 USD	34	7.38
Location		
Hanoi city	238	51.74
Ho Chi Minh city	222	48.26

## 4. RESEARCH FINDINGS

### 4.1. Measurement Model Evaluation

In order to avoid problems with common method variance, the author followed suggestions of Podsakoff, MacKenzie, Lee, and Podsakoff (2003) by not letting respondents know which factor each variable belongs to and

coding returned survey to keep all responses anonymous. The analysis revealed that a single factor accounted for 35.938% of the total explained variance, which is below the 50% threshold. Also, in the collinearity test, all of the variables' VIF coefficients were less than 3.3, which means there was no common method variance (Kock, 2015; Malhotra, Kim, & Patil, 2006).

The findings presented in Table 3 show that all outer loadings of the variables exceeded 0.7, with Cronbach's alpha values for each dimension also surpassing 0.7 and composite reliability (CR) coefficients being greater than 0.7. The Average Variance Extracted (AVE) values were also above 0.5, which showed that the measures were reliable and convergent (Hair, Hult, Ringle, & Sarstedt, 2022).

**Table 3.** Reliability and convergent validity results.

Construct	Outer loadings	VIF	$\alpha$	rho_a	CR	AVE
AFF	[0.764-0.857]	[1.420-1.765]	0.762	0.772	0.863	0.677
APP	[0.834-0.868]	[1.664-1.830]	0.803	0.805	0.884	0.717
ATT	[0.793-0.873]	[1.494-1.795]	0.763	0.770	0.864	0.679
GIP	[0.814-0.866]	[1.796-2.238]	0.858	0.861	0.904	0.702
INT	[0.831-0.853]	[1.573-1.790]	0.790	0.791	0.877	0.705
PBC	[0.755-0.878]	[1.537-1.199]	0.808	0.816	0.874	0.636
PDC	[0.805-0.860]	[2.159-2.781]	0.907	0.908	0.928	0.683
SN	[0.783-0.964]	[2.170-2.343]	0.868	1.423	0.900	0.752

The discriminant validity of the measurement scale was assessed using the heterotrait-monotrait (HTMT) ratio criterion. In this analysis, all correlation coefficients were found to be below 0.85, adhering to the thresholds suggested by Henseler, Ringle, and Sarstedt (2015). The detailed results are presented in Table 4.

**Table 4.** Discriminant validity and descriptive analysis results.

Variable	Mean	SD	Heterotrait-monotrait (HTMT) ratio criterion							
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) AFF	4.353	0.697								
(2) APP	4.523	0.780	0.493							
(3) ATT	4.774	0.700	0.470	0.695						
(4) GIP	4.479	0.749	0.571	0.617	0.590					
(5) INT	4.701	0.671	0.641	0.782	0.850	0.822				
(6) PBC	4.324	0.678	0.269	0.413	0.499	0.403	0.702			
(7) PDC	4.527	0.747	0.578	0.606	0.606	0.742	0.817	0.441		
(8) SN	4.251	0.764	0.042	0.098	0.086	0.071	0.072	0.038	0.046	

Note: SD – Standard deviation.

#### 4.2. Hypotheses Testing

Table 5 and Figure 2 present the results of the SEM analysis. This author used 5,000 bootstrap samples for an SEM analysis and found that perceived behavioral control is a strong predictor of the intention to join voluntary social insurance ( $\beta = 0.243$ ;  $t = 9.718$ ). A lot of things are also thought to make this intention stronger, such as attitude ( $\beta = 0.238$ ;  $t = 7.677$ ), government incentive policies ( $\beta = 0.223$ ;  $t = 6.847$ ), how hard people thought it would be during the COVID-19 pandemic ( $\beta = 0.209$ ;  $t = 5.985$ ), appropriateness ( $\beta = 0.152$ ;  $t = 4.779$ ), and affordability ( $\beta = 0.097$ ;  $t = 3.402$ ). Therefore, we support hypotheses H1, H2, H4, H5, H6, and H7. However, the relationship between a subjective norm and the intention to actively participate in social insurance is not supported, as evidenced by a p-value of 0.661 ( $> 0.05$ ). The SEM model explains 73.4% of the variance in the intention to participate in voluntary social insurance. Based on effect size coefficients ( $f^2$ ), most  $f^2$  values are at a small level ( $< 0.15$ ), with only H2's  $f^2$  reaching a medium level.



Table 5. SEM analysis results.

Hypotheses	Standardized estimate	f <sup>2</sup>	t-value	p-value	Conclusion
H1: ATT → INT	0.238	0.125	7.677	0.000	Accepted
H2: PBC → INT	0.243	0.176	9.718	0.000	Accepted
H3: SN → INT	-0.015	0.001	0.439	0.661	Rejected
H4: GIP → INT	0.223	0.093	6.847	0.000	Accepted
H5: PDC → INT	0.209	0.078	5.985	0.000	Accepted
H6: APP → INT	0.152	0.051	4.779	0.000	Accepted
H7: AFF → INT	0.097	0.025	3.402	0.001	Accepted

Note: f<sup>2</sup> – effect size coefficient.

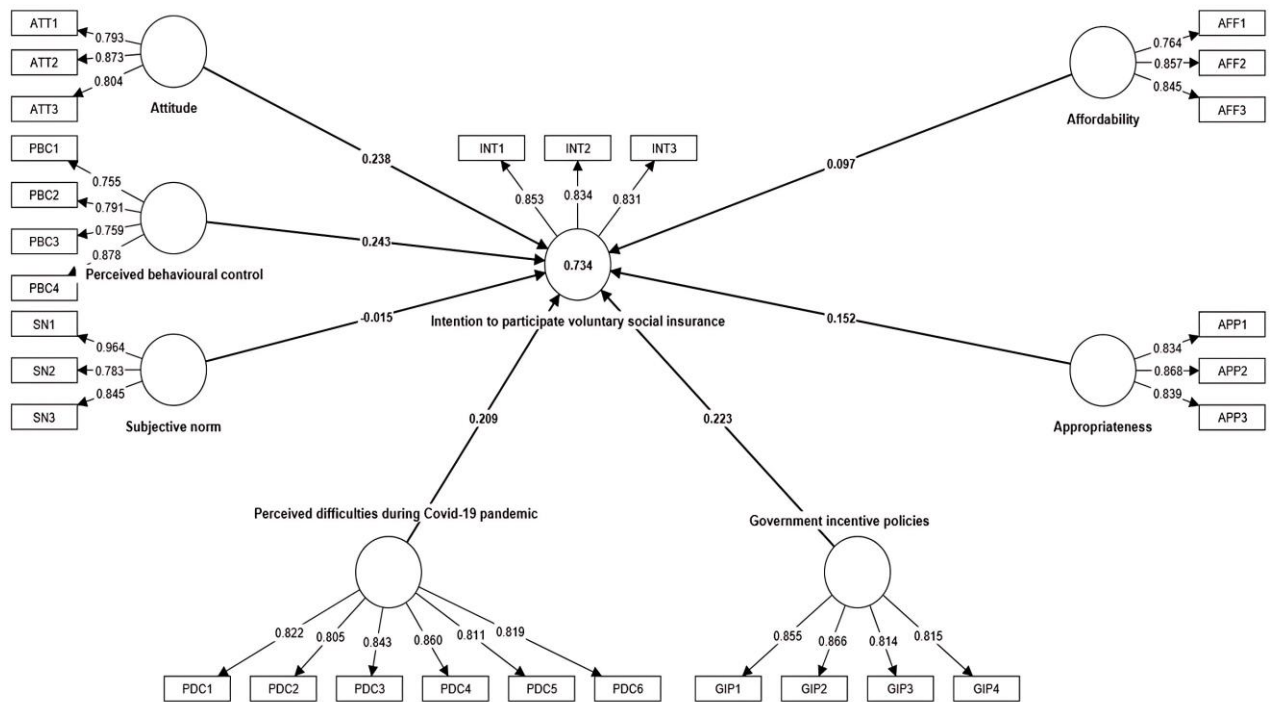


Figure 2. The key findings.

## 5. DISCUSSION AND CONCLUSION

### 5.1. Discussion

The study adds to the Theory of Planned Behavior (TPB) model by looking at more factors that affect the decision of workers in Vietnam's informal sector to join voluntary social insurance. The research results indicate that, except for subjective norms, the remaining factors account for up to 73.4% of the variation in the dependent variable. This percentage implies that the extension of four factors in TPB is meaningful in the case of voluntary social insurance participation in Vietnam. This has contributed a further in-depth theoretical aspect to researching individual purchasing behavior, specifically in the industry of retailing insurance.

This study shows that two key factors from the TPB model—attitude and perceived behavioral control—can influence social insurance purchasing intention of individuals who work in informal sectors where social insurance subscription is not mandatory in Vietnam. These findings are consistent with those of previous research in different settings (Brahmana et al., 2018; Mamun et al., 2021; Raza et al., 2020). The study indicates that insurance features, psychological factors, and incentive policies impact how individuals engage with the service. Consequently, it's crucial to implement communication strategies that raise awareness about voluntary social insurance. Moreover, providing information on how to participate and access support from stakeholders can help individuals feel more assured in their decision to enroll.

This study rejected the role of subjective norms, contrary to expectations. The limited financial resources of individuals working in informal sectors in developing countries like Vietnam partly explain this result. Furthermore, voluntary social insurance is considered a financial risk management solution, leading individuals to prioritize it over other options, such as saving at banks, investing in other fields, or using other types of services. Consequently, awareness of the benefits of voluntary social insurance remains a controversial issue, with some individuals doubting its usefulness. In fact, in Vietnam, up to 97.8% of informal workers do not participate in any form of insurance. Therefore, changing perceptions of voluntary social insurance is crucial for increasing individual participation in this service. Policymakers need to focus on solutions that highlight the unique benefits of voluntary social insurance compared to other financial solutions.

This study uncovered a significant finding that perceived difficulties during the COVID-19 pandemic increased the intention to participate in voluntary social insurance. Previous studies do not appear to have confirmed this finding. Consequently, individuals who are vulnerable and experienced numerous difficulties during the COVID-19 pandemic are more likely to be interested in social insurance. From a marketing perspective, lessons and hardships experienced during the pandemic can be used as evidence of the need for risk management and to persuade customers to participate in voluntary social insurance.

This study shows how government incentive policies can affect people's interest and desire to participate. It suggests that support and commitment to promoting voluntary social insurance can make people more interested and more likely to sign up. These findings reinforce the observations of previous studies (Gruber, 2000; Van Bui et al., 2023). Therefore, the Vietnamese government should continue to enhance the effectiveness of citizen support policies and commit to ensuring their benefits when participating in voluntary social insurance. Additionally, the government should develop a system to support individuals throughout the participation process. Notably, the government should actively communicate the role of voluntary social insurance in long-term social security issues.

This study also indicates that the appropriateness and affordability of voluntary social insurance can enhance the intention to participate. These results are consistent with the findings of Adebayo et al. (2015) and Mai et al. (2021). Thus, the government needs to implement policies that offer diversified contribution levels and greater flexibility in payment and ensure the financial benefits of voluntary social insurance, particularly by addressing issues such as inflation to prevent the devaluation of voluntary social insurance.

## 5.2. Contribution

In terms of theoretical contribution, this study marks the first attempt to validate a research model that extends the Theory of Planned Behavior (TPB) model to explain voluntary participation in social insurance. The study showed that attitude and perceived behavioral control are two TPB model factors that can affect the dependent variable. It also found four new factors: government incentive policies, appropriateness, affordability, and perceived difficulties during the COVID-19 pandemic. While appropriateness and affordability pertain to the characteristics of voluntary social insurance, government incentive policies are contextual. Specifically, perceived difficulties during the COVID-19 pandemic relate to individuals' psychological trauma. These findings provide a more detailed understanding of the motivations for individuals to participate in voluntary social insurance.

Also, these new factors suggest that the decision to join voluntary social insurance is affected by a number of things, such as the person's psychology, the features of the product, and the situation in which the decision is made. These insights contribute to expanding the understanding of voluntary social insurance participation behavior in Vietnam (Do & Giang, 2023; Hien et al., 2024; Van Bui et al., 2023). Notably, the study also provides reliable scales and models that can serve as a foundation for future research.

Regarding practical contribution, as previously introduced, the strategy to increase the voluntary social insurance participation rate in Vietnam still faces many challenges. This study has identified the factors influencing workers' participation intentions in the informal sector. The results help policymakers better understand

individuals' perceptions of this type of insurance. Furthermore, this study underscores the inconsistencies between the TPB model's practice and theory, which fails to acknowledge the role of subjective norms. These findings provide policymakers with a basis to develop strategies to increase voluntary social insurance participation rates under resource-limited conditions.

### 5.3. Conclusion

Currently, Vietnam faces significant challenges in increasing the proportion of workers in informal sectors participating in social insurance. Additionally, the implementation of this strategy has several shortcomings, including abuse and profiteering from voluntary social insurance funds (Thu, 2024). However, developing a comprehensive social insurance network is considered an urgent solution to ensure social security and minimize risks as Vietnam enters a period of population aging. Through Structural Equation Modeling (SEM) analysis, this study has found the main reasons why workers want to sign up for voluntary insurance. The results show that people's plans to participate are affected by many things, including their attitude, how much control they think they have over their behavior, subjective norms, government incentive policies, how appropriate and affordable the activity is, and how hard they think it will be during the COVID-19 pandemic. Therefore, strategies for developing voluntary social insurance in Vietnam need to address multiple aspects, including promoting cognitive factors and effectively applying contextual factors. Finally, this study still has some limitations. Focusing on data collection in large cities may overlook workers in areas with lower average incomes, significantly reducing the study's significance. Additionally, the sample size of the study is relatively small compared to the overall population. These limitations suggest that future studies should aim to expand the survey scale. Finally, we have not evaluated multi-group analyses that test the controlling role of demographic characteristics or the moderating role of latent variables. Therefore, future research should conduct advanced analyses to provide more meaningful implications.

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