FACTORS AFFECTING SOCIAL INSURANCE PARTICIPATION OF THE ADULT POPULATION IN VIETNAM

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Abstract: *This study examines two issues: analyzing the current situation and factors affecting the participation in social insurance of the adult population (population aged 18 and above) in Vietnam. The research area of the study is adults in the entire territory of Vietnam. The study used secondary data from the Vietnam Household. Living Standard Survey (VHLSS) 2016. The study uses the probit model to determine the impact of factors on Vietnamese adults' participation in social insurance. The research results show that gender, education level, age, income, and region (urban, rural) have an impact on the participation in social insurance of the adult population in Vietnam.*

Keywords*: insurance, adult population, Vietnamese, participation.*

I. Introduction

In Vietnam, social security has long been rooted in traditional values of mutual support, reflected in proverbs like "The healthy leaf covers the torn one." Today, in a country of approximately 100 million people with an aging population, increasing life expectancy, and declining birth rates, challenges to the social insurance system have become more pressing. The ratio of contributors to beneficiaries is shrinking, raising concerns about pension fund sustainability. Social insurance (SI) plays a vital role in replacing income during periods of risk such as illness, maternity, work accidents, and retirement. It not only supports individuals but also contributes to social stability and income redistribution.

Social insurance is a guarantee to replace or partially compensate the income of social insurance participants when they have reduced or lost income due to illness, maternity, work accidents, occupational diseases, retirement or death, on the basis of contributions to the social insurance fund or guaranteed by the state budget [Social Insurance Law 2024].

The role of Social Insurance for the people, specifically:

First, when workers have jobs and are healthy, they will contribute a part of their salary and income to support

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themselves or others when they are sick, have accidents, give birth, and take care of children, and when they are old, to maintain and stabilize their own lives and their families.

Second, implementing social insurance, health insurance, and unemployment insurance policies ensures equality in the social status of workers in different economic sectors, promoting production development.

Third, social insurance, unemployment insurance, and health insurance policies stabilize workers' lives and provide workers with assistance when they encounter risks.

Fourth, social insurance, health insurance, and unemployment insurance are effective tools of the State, contributing to the fair and reasonable redistribution of income among different classes of people, while reducing expenditures for the State budget and ensuring sustainable social security.

However, coverage remains limited, mainly concentrated in the formal sector and among vulnerable groups. As of January 2023, only about 37.4% of the working-age population was covered by SI. Expanding SI coverage has become an urgent priority to ensure sustainable social security in Vietnam.

Arising from the aforementioned issues, the topic "*Factors affecting social insurance participation of adult population in Vietnam*" has been selected as the subject of this research.

II. Literature review

Social insurance (SI) has long been recognized as a key pillar of social security systems worldwide. Numerous studies have examined the factors that influence individuals' participation in SI schemes, particularly in the context of developing countries, where informal employment is prevalent and SI coverage remains low.

In the Vietnamese context, several studies have explored the determinants of participation in social insurance. For example, Nguyen et al. (2014) investigated factors influencing the decision of small-scale traders in Nghệ An province to engage in voluntary social insurance. Their findings indicated that income level, awareness, and perceived benefits were critical drivers. Similarly, Hoang and Bui (2018) examined voluntary social insurance participation among farmers in Phú Yên, emphasizing the roles of education, gender, and trust in government institutions.

Ngo (2013) addressed the disparity in access to social security between urban and rural residents, highlighting structural inequalities in the distribution and accessibility of SI schemes. This urban-rural divide has also been echoed in international studies, such as Cheng et al. (2014), who found that migrant workers in urban China had significantly lower access to social insurance compared to their urban counterparts.

From a broader perspective, Pellissery and Walker (2007) discussed the challenges faced by informal sector workers in accessing SI in emerging economies, pointing to a lack of tailored policies and weak enforcement mechanisms. Meanwhile, Bhat and Jain (2006) emphasized that demographic characteristics such as age, gender, education, and income are consistent predictors of health insurance participation, which often overlaps with social insurance behavior.

In terms of empirical modeling, many studies have utilized binary choice

models such as Logit or Probit to analyze participation decisions. For instance, Nghiem (2009) applied a Probit model to study health insurance enrollment in rural Vietnam, identifying education and income as strong predictors. These methodological approaches provide robust frameworks to isolate the effects of individual-level characteristics on SI participation.

Despite the growing body of literature, gaps remain in understanding the full range of factors influencing social insurance participation in Vietnam, particularly at the national level and among the adult population as a whole. Existing research often focuses on specific regions or occupational groups, leaving a need for more comprehensive, representative analyses. This study aims to address that gap by employing national-level data and a Probit model to identify key socio-demographic determinants of SI participation among Vietnamese adults.

III. Research methodology

3.1. Research approach

This study is based on data from the 2016 Vietnam Household Living Standards Survey (VHLSS), conducted nationwide. A Probit model is employed to identify the factors influencing the decision of adult individuals to participate or not participate in social insurance.

3.2. Research data

The study utilizes data from the 2016 Vietnam Household Living Standards Survey (VHLSS), conducted by the General Statistics Office. The dataset covers households selected from wards/communes across all 63 provinces and cities in Vietnam. The survey targets household members and households, with each unit in the dataset representing either a household or a selected ward/commune. The 2016 VHLSS dataset includes statistical indicators across several categories: basic demographic characteristics related to living standards; education; healthcare and medical services; employment; income; expenditure; durable goods; housing, electricity, water, sanitation facilities; participation in poverty reduction programs; business activities; and general characteristics of communes.

The VHLSS 2016 dataset, which is nationally representative, includes a sample size of 46,995 households in 3,133 communes/wards, representing different regions, urban and rural areas, and provinces/cities across the country. The survey was conducted in four rounds, corresponding to four quarters of the year, using face-to-face interviews with household heads and local commune officials.

3.3. Data analysis method

To identify the factors influencing the decision of adults in Vietnam to participate or not in social insurance, this study employs a Probit model. The Probit model, introduced by Chester Bliss in 1935, is structured as follows:

$$\boldsymbol{Y = \sum \alpha + \beta_i X_i + \varepsilon_i}$$

Where:

Y: Binary dependent variable (1 or 0)

Y= 1: Individual participates in social insurance

Y= 0: Individual does not participate in social insurance

Xi: Independent variables

βi : Vector of coefficients

εi : Random error term of the model

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X + \beta 4X4 + \beta 5X5 + \beta 6X6 + \varepsilon_i$$

$$Y = \beta 0 + \beta 1ttnt + \beta 2gioitinh + \beta 3tuoi + \beta 4sonamdihoc + \beta 5thunhap + \beta 6tthn + \varepsilon_i \quad (1)$$

In model (1), the left-hand side represents the dependent variable Y, which takes the value of 1 if the individual participates in social insurance and 0 if the individual does not participate in social insurance. The right-hand side consists of independent variables that represent the factors influencing the participation of the adult population in social insurance in Vietnam.

Variables used in the model:

Variable	Explanation	Expectation	Reviewed Studies
Gender (gioitinh)	Takes the value of 1 if male, 0 if female	-	Nguyen and Nguyen (2012)
Age (tuoi)	Population aged 18 and above, Calculated from the year of birth to 2016	+	Nguyen and Cao (2014)
Education Level (sonamdihoc)	Number of years of schooling	-	Nguyen and Cao (2014)
Income (thunhap)	Income level over the past 12 months	+	Bhat and Jain (2006)
Urban/Rural (ttnt)	1 for urban, 0 for rural	+	Ngo (2013)
Marital Status (tthn)	1 for married, 0 for unmarried, widowed, or divorced	+	Nguyen and Nguyen (2012)

The factors influencing the decision to purchase social insurance among the adult population in Vietnam are diverse and can be categorized into the following groups:

- Personal characteristics group: age, gender, education level, and marital status.
- Employment status group: income.

3.4. Results

3.4.1. Factors affecting the decision to participate in social insurance

The results of the Probit model indicate that the variables under study, including urban/rural (ttnt), gender (gioitinh), age (tuoi), education level (sonamdihoc), and income (thunhap), all have significant effects ($p < 1\%$) on the decision to participate in social insurance among the adult population in Vietnam.

Table 1. Probit Model Results

Explanatory Variable	β	Se	Z	P>
Urban/Rural (ttnt)	0.126	0.035	3.61	0.000
Gender (gioitinh)	-0.676	0.034	-19.61	0.000
Age (tuoi)	-0.0155	0.0018	-8.73	0.000
Education Level (sonamdihoc)	0.2156	0.0069	31.24	0.000
Income (thunhap)	0.000019	0.0000065	29.04	0.000
Marital Status (tinhtranghonnhan)	-0.316	0.0458	-6.91	0.000
Constant (cons)	-2.2501	0.100145	-22.47	0.000
Number of Observations: 8,316 Pseudo R^2 = 33.87% LR Chi^2 = 3,856.18		Prob > Chi^2 = 0.000 Log Likelihood = -3,763.6884		

Source: Calculations from VHLSS 2016

With the assumption that other factors remain constant, the effects of the independent variables on the decision to purchase social insurance are explained as follows:

The Prob > Chi^2 value of 0.0000 indicates that all coefficients of the variables in the model are significantly different from zero, and the regression choice model is appropriate.

The regression results show that the variables affecting the participation in social insurance among the adult population in Vietnam are ranked in descending order of impact as follows: gender, education level, urban/rural area, age, and income.

Gender (gioitinh) significantly affects social insurance participation in Vietnam, with a 1% significance level and a negative beta coefficient of -0.676, the largest in absolute value among the variables. This indicates that women are more likely than men to participate, likely due to their caregiving roles in family and greater concern for future risks.

Income (thunhap) also affects the decision to purchase social insurance among the adult population of Vietnam, with a significance level of 1% and a positive sign. The beta coefficient is 0.000019, indicating that those with higher incomes are more likely to participate in social insurance. Higher-income individuals generally have more stable finances and are more likely to prepare for future risks, such as health problems or retirement, hence opting for more social insurance coverage. The relatively small size of the beta coefficient is attributed to challenges during data collection, as many individuals were reluctant to disclose their actual income, leading to potential inaccuracies in the data.

Age (tuoi) has a statistically significant effect at the 1% level. The beta coefficient is -0.0155, which is negative, as expected. This implies that the older an individual gets, the less likely they are to participate in social insurance. In the context of Vietnamese society, people typically work while they are young to support their families. As they age and encounter health issues or other risks, they often rely on their children for support, which reduces the consideration of social insurance. Additionally, many elderly individuals benefit from health support and subsidies through government programs for senior citizens, further decreasing the likelihood of social insurance participation.

Education level (sonamdihoc) is statistically significant at the 1% level. The beta coefficient is 0.2156, which is positive and contrary to the initial expectation. This indicates that individuals with higher education levels are more likely to recognize the benefits of social insurance and the health risks in the future, which leads them to participate more in social insurance.

Urban/Rural (ttnt) significantly influences social insurance participation in Vietnam, with a positive beta coefficient of 0.126 and significance at the 1% level. Urban residents are more likely to enroll due to greater access to information, communication, and established promotional channels compared to their rural counterparts.

Marital Status (tinhtranghonnhan) has a statistically significant effect at the 1% level. The beta coefficient is -0.316, which is negative and contrary to the expectation. The results show that individuals who are unmarried, divorced, or widowed tend to participate more in social insurance. This is easy to explain, as individuals who are single often think ahead and worry about future risks,

which makes them more inclined to seek social insurance services. In contrast, married individuals tend to feel more comfortable and may not consider health or career risks as seriously because they rely on their spouse or children.

3.4.2. Factors affecting the decision to participate in social insurance in urban and rural areas

Variables Used in the Model

Variable	Explanation	Expectation	Reviewed Studies
Gender (gioitinh)	Takes the value of 1 if male, 0 if female	_	Nguyen and Nguyen (2012)
Age (tuoi)	Population aged 18 and above, Calculated from the year of birth to 2016	+	Nguyen and Cao (2014)
Education Level (sonamdihoc)	Number of years of schooling	_	Nguyen and Cao (2014)
Income (thunhap)	Income level over the past 12 months	+	Bhat and Jain (2006)

In this model, the variable urban/ rural (ttnt) is excluded, and the focus is on analyzing the factors affecting social insurance participation.

The Probit model results indicate that the research variables, including Gender (gioitinh), Age (tuoi), Education Level (sonamdihoc), and Income (thunhap), Marital Status (tinhtranghonnhan) are all significant and affect the participation in social insurance among the adult population in Vietnam across both study areas.

Table 2. Probit Model Results for the Rural Area

Explanatory Variable	β	Se	Z	P>
Gender (gioitinh)	-0.849	0.0457	-18.59	0.000
Age (tuoi)	-0.0169	0.0024	-6.95	0.000
Education Level (sonamdihoc)	0.2084	0.0088	23.7	0.000
Income (thunhap)	0.0000207	0.00000092	22.38	0.000
Marital Status (tinhtranghonnhan)	-0.2666279	0.0610858	-4.36	0.000
Constant (cons)	-2.134206	0.1327513	-16.08	0.000
Observations: 4,990 Pseudo LR	Prob > = 0.000 Log likelihood = -2157.2841			

Source: Calculations from VHLSS 2016

Table 3. Probit Model Results for the Urban Area

Explanatory Variable	β	Se	Z	P>
Gender (gioitinh)	-0.4326	0.0529	-8.18	0.000
Age (tuoi)	-0.0134	0.0026012	-5.15	0.000
Education Level (sonamdihoc)	0.2297	0.0113131	20.30	0.000
Income (thunhap)	0.0000165	0.0000009	18.44	0.000
Marital Status (tinhtranghonnhan)	-0.3743	0.06947	-5.39	0.000
Constant (cons)	-2.347807	0.1651815	-14.21	0.000
Observations: 3,326 Pseudo LR	Prob > = 0.000 Log likelihood = -1584.0899			

Source: Calculations from VHLSS 2016

With the assumption that other factors remain constant, the impact of independent variables on the decision to purchase social insurance (SI) is explained as follows:

The value of Prob > Chi^2 = 0.0000 indicates that all the coefficients of the variables in the model are significantly different from zero, and thus, the chosen regression model is appropriate.

The regression results show that the factors affecting the participation in social insurance (SI) among the adult population in Vietnam are ranked in descending order of influence as follows: gender, education level, age, and income.

Gender (gioitinh) significantly influences the decision to purchase social insurance among the adult population in both urban and rural areas of Vietnam at the 1% significance level. The beta coefficients for the rural and urban models are -0.849 and -0.4326, respectively, both of which are negative, as expected. This suggests that, in both urban and rural areas, women participate in social insurance more than men because women are often responsible for family care and tend to have a more cautious mindset, fearing potential risks they might face, thus leading them to participate in SI more than men.

Income (thunhap) influences the decision to purchase social insurance for the adult population in both urban and rural areas of Vietnam at the 1% significance level, with a positive coefficient. The beta coefficients for the rural and urban models are 0.0000207 and 0.0000165, both positive. This indicates that individuals with higher incomes are more likely to participate in social insurance. They tend to have more stable and higher incomes, making them more inclined to prepare for future risks, thus using social insurance more.

Age (tuoi) significantly influences the decision to purchase social insurance in both urban and rural Vietnam, with results statistically significant at the 1% level. The negative beta coefficients (-0.0169 for rural, -0.0134 for urban) reflect a common trend: younger individuals prioritize earning and supporting their families, while older adults tend to rely on their children rather than formal social insurance. Thus, the consideration of social insurance participation is usually not taken seriously.

Education level (sonamdihoc) is statistically significant at the 1% level, with positive beta coefficients in both rural (0.2084) and urban (0.2297) areas, contrary to the initially expected sign. This indicates that higher education increases awareness of social insurance benefits and future health risks, leading to greater participation. The stronger effect in urban areas suggests that more schooling is associated with better job opportunities and access to social insurance in these regions.

Marital status (tinhtranghonnhan) is statistically significant at the 1% level. The beta coefficients for the rural and urban areas of Vietnam are -0.2666279 and -0.3743, respectively, both positive and contrary to the expected sign. The results show that unmarried or divorced/ widowed individuals tend to participate in social insurance more. This can be easily explained by the fact that when people are single, they tend to think further ahead and worry about future risks, so they are more interested in social services.

IV. Research conclusion

The study focused on analyzing the current state of participation in social insurance (SI) by adults in Vietnam using the VHLSS 2016 dataset. The model used in this research is the Probit model, introduced by Chester Bliss in 1935. The research results indicate that factors such as gender, education level, age, income, and geographical area (urban vs. rural) significantly influence the participation in SI among the adult population in Vietnam. This study serves as empirical evidence on the factors affecting social insurance participation in Vietnam and will be a valuable reference for future studies on social insurance.

V. Discussion

The study indicates that not only is the number of people participating in social insurance higher in urban areas, but the participation rate is also significantly higher compared to rural areas. The implication is that urban areas have higher living standards, better access to media, and superior services, which facilitate better exposure to social insurance programs. To address this issue, besides the aforementioned factors, the relevant social insurance authorities should modify their communication efforts to provide information and connect with the public more effectively:

Communication to Enhance Workers' Ethical Responsibility:

Many workers do not fully realize their personal responsibility for old age, as they do not perceive the increasing risks in the future. Thus, it is necessary to raise workers' awareness about their responsibility for their future. This can be done by clearly highlighting potential risks, especially as one grows older. Only by recognizing societal risks will the public's sense of self-protection be enhanced. Media programs on television, radio, and risk-oriented topics, or integrated into popular shows, could be helpful. The media should regularly report on common risks and potential future risks.

Organizational Communication Structure:

It is crucial to coordinate and effectively use local organizations such as Women's Associations or churches (in religious communities) for outreach efforts regarding voluntary social insurance. Communication strategies should be diversified and dramatized (e.g., radio, television, newspapers, pamphlets, banners, and posters). Direct communication methods, such as organizing dialogues and one-on-one counseling between social insurance officials and informal sector workers, should be emphasized. These sessions should be conducted in workers' neighborhoods, dormitories, and other places where they reside. The goal is to provide a clearer understanding of the policy, gather direct feedback, and adjust social insurance policies and implementations accordingly.

Strengthening the Role of the State in Social Insurance:

To enhance the state's role in social insurance activities, it is important to improve the capacity of management agencies to plan social insurance development strategies, develop and perfect legal frameworks, and implement coherent measures to increase compliance with social insurance laws. Monitoring and enforcing the law should be strengthened to prevent violations, especially fraud, evasion of contributions, and abuses related to social insurance.

Legal Framework for Social Insurance:

The legal framework of social insurance needs further development. The laws should be updated to expand the pool of eligible participants, moving toward universal social insurance. The system should be structured in multiple layers, and improvements should be made to the contribution and benefit rules. Continued efforts should be made to update penalties for social insurance violations and allow businesses and workers to file complaints if they detect policy violations.

Addressing Disparities in Social Welfare Access Between Urban and Rural Areas:

To reduce the gap in access to social security between urban and rural areas, policies and programs should be expanded to benefit rural residents. Economic development should be promoted in rural areas, alongside increasing the promotion and communication of social welfare policies in these regions.

Finally, it is essential to develop support policies for workers above the poverty line. Currently, social insurance premiums are a substantial burden for rural workers, and the government only supports those in poverty or near-poverty status. There should be specific policies for workers slightly above the poverty line, who often have unstable incomes. Additionally, retirement age for rural workers should be adjusted based on their work environment and conditions. The system should be more flexible in terms of contribution and benefit levels.

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CÁC YẾU TỐ ẢNH HƯỞNG ĐẾN VIỆC THAM GIA BẢO HIỂM XÃ HỘI CỦA DÂN SỐ TRƯỞNG THÀNH TẠI VIỆT NAM

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Tóm tắt: *Nghiên cứu này xem xét hai vấn đề: phân tích thực trạng và các yếu tố ảnh hưởng đến việc tham gia bảo hiểm xã hội của dân số trưởng thành (từ 18 tuổi trở lên) tại Việt Nam. Đối tượng nghiên cứu là người trưởng thành trên toàn lãnh thổ Việt Nam. Nghiên cứu sử dụng dữ liệu thứ cấp từ Khảo sát Mức sống Hộ gia đình Việt Nam (VHLSS) năm 2016. Mô hình Probit được áp dụng nhằm xác định tác động của các yếu tố đến việc tham gia bảo hiểm xã hội của người trưởng thành tại Việt Nam. Kết quả nghiên cứu cho thấy các yếu tố như giới tính, trình độ học vấn, độ tuổi, thu nhập và khu vực sinh sống (thành thị, nông thôn) có ảnh hưởng đến mức độ tham gia bảo hiểm xã hội của dân số trưởng thành ở Việt Nam.*

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