

Health Insurance Utilization in Vietnam: Exploring Barriers and Determinants in the Mekong Delta

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Abstract

Health insurance constitutes a vital component of social security policies, intended to protect residents' health and well-being. Nevertheless, despite its widespread availability, the use of health insurance cards among patients in Vietnam remains limited, influenced by a range of objective and subjective factors. This study aims to investigate the key determinants shaping patients' decisions to utilize health insurance cards for medical examination and treatment. Data were gathered through structured interviews with 400 patients at a distinguished private hospital in the Mekong Delta, utilizing a pre-designed questionnaire and a convenience sampling method. The binary logit regression analysis reveals several significant findings. Notably, older patients demonstrate a greater propensity to rely on health insurance to mitigate medical expenses, reflecting heightened health concerns with age. Additionally, the occupation of patients plays a pivotal role in their decision-making process; individuals employed in sectors such as education, training, and retail trade exhibit a markedly higher likelihood of using health insurance compared to those in other fields, possibly due to stable income or job-related healthcare requirements. Furthermore, as patients transition from low-income to middle-income status, the probability of health insurance utilization rises, suggesting that modest income

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improvements enhance access to insured services. Drawing on these insights, the study proposes targeted recommendations to bolster patients' engagement with health insurance for medical examination and treatment in hospital contexts, aiming to address barriers and optimize policy effectiveness.

Keywords: Health Insurance Card, Health Services, International Hospital, Binary Logistic Regression

JEL Classifications: I11, I13, D81, O15

1. Introduction

Vietnam has made remarkable progress in expanding health insurance coverage, with the participation rate reaching over 94% of the population by 2024, compared to only 46.1% in 2008. However, a paradox is the significant gap between the coverage rate and the actual use of health insurance. Reports show that the rate of people using health insurance cards when going to the hospital fluctuates between 60-70%, indicating that many barriers still prevent people from fully accessing their benefits. This paradox poses a major challenge to the goal of universal health coverage, especially in the context of high out-of-pocket costs (about 45% of medical expenses are paid by people) and the fact that the quality of health services still varies between levels and geographical areas. In particular, low-income people mainly use health insurance at grassroots medical facilities such as district health centers and hospitals (Phan et al., 2019). In addition, the unequal geographical distribution of healthcare and hospital quality remains a significant obstacle for patients (Vuong et al., 2021). At the same time, patients are unsatisfied with the health insurance services received due to low quality (Do et al., 2014).

On the other hand, to solve the overload situation in public hospitals, the Vietnamese government has been actively encouraging the participation of the private health sector in the health insurance examination and treatment system. Private hospitals are expected to become an important partner, helping to reduce the burden on the public system and provide more options for patients. Despite the increasing emphasis on the role of private healthcare, most previous quantitative studies on health insurance use in Vietnam have focused primarily on public healthcare facilities (Pham et al., 2022; Hoang et al., 2022). The lack of empirical evidence on the determinants of patients' health insurance use behavior in private hospitals — an environment with its own unique characteristics in terms of cost, perceived quality, and administrative procedures — creates an important research gap.

Therefore, this study provides a pioneering quantitative analysis of the factors influencing patients' health insurance use decisions in a large private hospital in the Mekong Delta, an area with distinct socio-economic characteristics. Moreover, the study not only sheds light on patient barriers and motivations in an underexplored context but also provides urgently needed empirical evidence for policymakers who are attempting to effectively integrate the private sector into national social security systems.

The paper is structured as follows: Section 2 presents the theoretical overview and research hypotheses. Section 3 describes the methodology. Section 4 analyzes the empirical results. Finally, Section 5 discusses the results and suggests policy implications to improve the use of medical cards in medical examination and treatment activities.

2. Literature Review and Hypotheses Development

2.1. Literature Review

Health insurance is a form of insurance applied in the field of health care. Currently, Vietnam has two types of health insurance: (1) state health insurance and (2) private health insurance. State health insurance is social and not for profit. All citizens are required to participate in health insurance according to the Law on Health Insurance. In contrast, private health insurance is the health insurance package of life and non-life insurance products of insurance companies operating profitably. Currently, there are many domestic insurance enterprises and foreign-invested enterprises deploying this type

of health insurance. In the current insurance market, health insurance products of insurance companies are very diverse (both domestic and foreign) for customers to choose from. However, the most popular health insurance plan has two main groups: the general insurance program and the premium insurance program. Specifically, the general insurance program is suitable for medical examination and treatment at public, private, and international medical facilities in the domestic market. The premium insurance package is for customers with good financial conditions who regularly visit and use services at high-class domestic hospitals and abroad. Health insurance benefits of participants are increasingly guaranteed and expanded according to regulations. Participants can choose a convenient medical facility near their place of work or residence according to the guidance of the social insurance agency to register for initial medical examination and treatment. The percentage of medical expenses paid is increasing, up to 100% in some medical services. However, there are still many barriers that prevent patients from using their health insurance cards when using services at medical facilities.

Insurance markets often involve asymmetric information because the insured has better information about the associated risks than the insurer. It can lead to reverse selection, where those with high risk will choose to buy insurance and those with less risk will not buy insurance. Another problem with insurance markets is moral hazard, in which the insured is more negligent in hedging loss after having the insurance. This risk is higher in an unregulated market, which has no regulation on the cost and quantity of care to be provided. Besides, according to the model of expected benefits of Arrow (1963), individuals make the decision to use health insurance based on the result of the comparison of the expected benefits of two cases: buying health insurance and not buying it. Health uncertainty creates a financial risk when medical expenses cross an income threshold. Chaudhuri & Roy (2008) argued that medical expenses exceeding the average income threshold of people are considered “catastrophic,” which increases the demand for health insurance.

Besides, the expected benefits from health insurance also depend on the quality of medical services. Besley et al. (1999) showed that the quality of medical care increases the demand for health insurance, while the costs of accessing medical services in health facilities and the availability of health facilities in the local area reduce an individual’s need for health insurance. Recently, Abimbola et al. (2015) showed that transaction costs influence people’s decisions to use health insurance. In the practical model, individuals use health insurance for medical examination and treatment when the benefits of using health insurance are greater than the benefits of not using health insurance.

Research on factors affecting the decision to use health insurance has been of interest in the world (Atinga et al., 2015; Duku, 2018) and in Vietnam (Phan et al., 2019). Gender and age have been found to influence the decision to use health insurance in many previous studies. Eckel & Grossman (2008) and Dohmen et al. (2011) have shown that women are more risk-averse than men, so they tend to buy insurance and use insurance more than men. Moreover, the older people are, the more insecure they are about their retirement life. They worry that when they retire, they will no longer have a monthly income. Young people often have more ambition and different thinking; they think they have more time and can earn more money to use later. As individuals age, their risk aversion level increases, and their need for insurance also increases (Donkers et al., 2001). In addition, education level can lead to awareness of the need for different types of insurance. However, Outreville (2015) found that the level of financial risk aversion decreased as the level of education increased in their study. One possible explanation for this problem is that when an individual has a higher education level, the level of risk aversion decreases, and then they will not need to buy insurance. Depending on the degree of influence of occupation on attitudes to risk, we also see that the kind of job also

affects insurance demand. For those who own a business or have stable work, the need for insurance will be lower than for those who are employed and have a precarious occupation. This has been shown and confirmed by the study of Fitzgerald (1987). At the same time, attitudes towards the costs and disparities of benefits when purchasing health insurance also change with the user's income. Low-income people often have more demand for insurance than high-income people. Ayanore et al. (2019) argue that income is a factor that affects the decision to use health insurance cards when people seek medical care. Research results of Chankova et al. (2008) and Dong et al. (2008) show that higher income increases the ability to pay for health insurance because insurance is like a normal good. However, low-income people will take advantage of benefits from health insurance to save on medical expenses, while high-income people require high-quality services and only use health insurance when necessary. While many studies assume a simple, direct link between income and insurance use, this relationship is often more complex. Recent literature suggests a non-monotonic, inverted U-shaped pattern (Rapi et al., 2025). This theory suggests that as income grows from low to middle levels, the demand for insurance increases because of greater financial ability and risk awareness. However, at very high-income levels, demand may decrease because wealthy individuals can afford to pay for their own care or have a different attitude toward risk.

2.2 Research Gaps and Contributions

Although many studies exist, there are several clear research gaps that this study intends to fill. First, most international studies are conducted in socio-economic contexts, like in Africa, which are very different from Vietnam. Therefore, their findings may not be directly applicable to the Mekong Delta region. Second, studies conducted across Vietnam provide a broad overview but might miss important regional differences, especially the unique situation within private hospitals. There is limited detailed research on patient behavior at a private international hospital in a major city like Can Tho.

Therefore, this study makes three main contributions. Firstly, it provides specific evidence on health insurance use from the Mekong Delta, an important but not extensively researched region in Vietnam. Secondly, it offers a detailed, micro-level view by focusing on patients at a private international hospital, whose decisions may be different from those in the public healthcare system. By addressing these gaps, this study offers practical insights for hospital managers, policymakers, and insurance companies aiming to increase the use and effectiveness of health insurance in Vietnam.

2.3. Hypotheses Development

2.3.1 Sex

The influence of gender on decision-making under uncertainty, particularly in the context of insurance utilization, has been extensively explored in economic and behavioral research. Croson & Gneezy (2009) conducted a comprehensive review of experimental and field studies, concluding that women exhibit greater risk aversion than men across various domains, including financial and health-related choices. This heightened risk aversion is often attributed to differences in preferences and socialization, with women tending to prioritize stability and security (Croson & Gneezy, 2009). Similarly, Hartog et al. (2002) analyzed survey data from the Netherlands and found that women consistently opt for safer alternatives when faced with uncertainty, a pattern linked to lower tolerance for financial loss. In the insurance context, Gandolfi & Miners (1996) argued that this risk-averse behavior translates into a higher demand for life and health insurance among women, as they seek to mitigate potential economic burdens associated with adverse health events.

Further evidence supports this gender-based disparity. Eckel and Grossman (2008) employed experimental methods to demonstrate that women are more likely to avoid risky gambles, suggesting a stronger inclination toward protective mechanisms like insurance. In healthcare settings, Jianakoplos & Bernasek (1998) found that women's greater risk aversion correlates with increased uptake of insurance products, driven by concerns over health uncertainties and caregiving responsibilities. These findings align with behavioral economics theories, such as prospect theory, which posit that individuals with higher loss aversion—often women—prefer options that minimize potential downsides. In Vietnam, where health insurance serves as a critical buffer against rising medical costs, this risk-averse tendency could amplify women's utilization, especially given their traditional role as household healthcare decision-makers (Nguyen, 2020).

However, contextual factors may moderate this effect. For instance, Vietnam's mandatory health insurance policy under the 2014 Health Insurance Law might reduce gender differences by standardizing access (Do et al., 2014). Despite this, cultural norms emphasizing women's responsibility for family well-being could still drive higher usage. Drawing on this robust theoretical and empirical foundation, the following hypothesis is proposed:

H1: Women decide to use health insurance more than men.

2.3.2 Age

Age is widely recognized as a key demographic factor shaping individuals' attitudes toward risk and their subsequent economic behaviors, particularly in the context of insurance uptake. Donkers et al. (2001) analyzed data from a large Dutch household survey and found that risk aversion increases with age, as older individuals exhibit a stronger preference for certainty when faced with financial and health-related uncertainties. This heightened risk aversion is often linked to declining physical resilience and a greater awareness of mortality, prompting a reliance on mechanisms that mitigate potential losses (Donkers et al., 2001). Similarly, Gutter and Hatcher (2008) investigated insurance demand across racial groups in the United States, concluding that elderly individuals demonstrate a pronounced need for insurance products, driven by both increased health vulnerabilities and a desire to secure financial stability in retirement. These findings resonate with life-cycle theories, which suggest that as individuals age, their diminishing earning capacity and rising healthcare needs amplify the perceived utility of insurance (Modigliani & Brumberg, 1954).

Additional evidence reinforces this relationship. Halek and Eisenhauer (2001) employed a parametric approach to measure risk aversion and found that older age cohorts consistently prioritize risk-reducing strategies, including health insurance, to safeguard against catastrophic medical expenses. In the healthcare domain, Andersen's Behavioral Model of Health Services Use posits that age influences predisposing factors, such as perceived health needs, which in turn drive service utilization (Andersen, 1995). In Vietnam, where chronic disease prevalence rises with an aging population—projected to constitute 17% of the population by 2030 (Giang et al., 2023)—older individuals may view health insurance as a critical buffer against escalating costs, a trend supported by higher utilization rates among the elderly (Nguyen, 2020). However, contextual factors, such as access to subsidized insurance for seniors under Vietnam's social protection policies, could further enhance this effect (Do et al., 2014). Based on this extensive theoretical and empirical foundation, the following hypothesis is proposed:

H2: Patient age has a positive effect on the decision to use health insurance.

2.3.3 Education level

The relationship between education level and insurance utilization has garnered significant attention in economic and behavioral research, often revealing a counterintuitive dynamic. Outreville (2015) conducted a comprehensive survey of risk aversion studies, identifying a negative correlation between education attainment and risk aversion. This suggests that individuals with higher education levels tend to exhibit greater risk tolerance, potentially reducing their reliance on insurance as a protective mechanism (Outreville, 2015). Jianakoplos & Bernasek (1998) further substantiated this by analyzing U.S. household data, finding that single individuals with less than a 6th-grade education display significantly higher risk aversion compared to those with advanced education, such as college degrees. The authors attribute this to lower financial literacy and fewer resources among the less educated, which heightens their perceived need for insurance to offset uncertainties (Jianakoplos & Bernasek, 1998). These findings align with human capital theory, which posits that education enhances cognitive skills and economic opportunities, thereby decreasing dependence on risk-mitigating tools like insurance (Becker, 1976).

In the Vietnamese context, this pattern appears particularly relevant. Phan et al. (2019) surveyed health insurance usage in Vietnam and observed that most buyers and users of insurance possess lower educational qualifications, often below tertiary levels, and exhibit limited utilization during medical examination and treatment. This may reflect a combination of greater risk aversion among the less educated and a lack of awareness or trust in insurance benefits (Phan et al., 2019). Conversely, higher-educated individuals may prefer out-of-pocket payments for premium healthcare services, perceiving insurance-covered options as lower quality, a trend noted in developing countries (Levy & Janke, 2016). Additionally, education can enhance health literacy, enabling better self-management of health risks and reducing reliance on formal insurance systems (Nutbeam, 2008). In Vietnam, where public health campaigns aim to universalize insurance awareness, the effect of education may still vary due to disparities in access to quality care (Nguyen, 2020). Based on this theoretical and empirical evidence, the following hypothesis is proposed:

H3: Education level has a negative impact on the decision to use health insurance.

2.3.4 Job

The influence of occupation on risk attitudes and insurance utilization has been a focal point in economic research, reflecting how job characteristics shape financial decision-making. Cohn et al. (1975) conducted a seminal study on investor behavior, finding that self-employed individuals exhibit lower risk aversion compared to higher-income groups such as salaried workers, clerical staff, and professionals. This difference is attributed to the self-employed's greater control over income streams and adaptability to uncertainty, reducing their perceived need for insurance as a safety net (Cohn et al., 1975). Conversely, Fitzgerald (1987) examined the impact of occupation on life insurance demand, arguing that individuals in unstable or precarious occupations, such as seasonal laborers or gig workers, demonstrate higher insurance uptake due to heightened exposure to income volatility and health risks. These findings suggest that occupation not only mediates risk preferences but also directly influences the demand for protective mechanisms like health insurance.

Additional evidence supports this occupational heterogeneity. Guiso & Paiella (2008) analyzed Italian household data, revealing that workers in stable, salaried positions often have lower insurance demand than those in less secure roles, as employment benefits (e.g., employer-provided insurance) may substitute for personal

coverage. In healthcare contexts, Andersen's Behavioral Model highlights occupation as an enabling factor, where job stability and associated resources affect access to and utilization of health services (Andersen, 1995). In Vietnam, where mandatory health insurance covers formal sector employees, those in fields like education or healthcare may exhibit higher utilization due to job-related mandates and stable income (Nguyen, 2020). Conversely, self-employed individuals or those in informal sectors might underutilize insurance, preferring out-of-pocket payments for flexibility or perceived quality (Cai, 2023). However, the study posits that certain occupations, particularly those with structured benefits or health exposure (e.g., education, retail), may positively drive usage due to awareness and necessity. Based on this theoretical and empirical framework, the following hypothesis is proposed:

H4: Field of work has a positive impact on the decision to use health insurance.

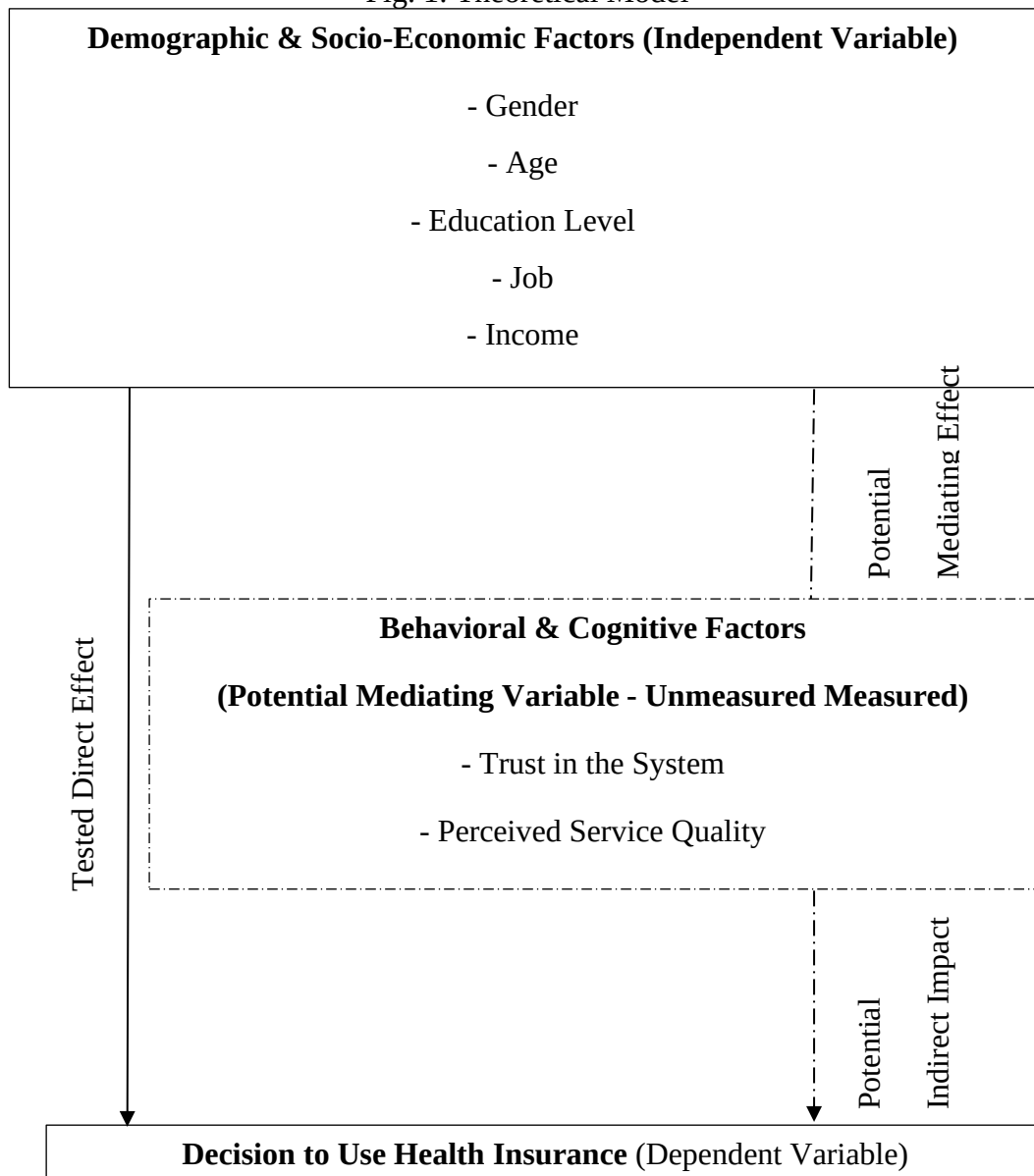
2.3.5 Income

Income plays a pivotal role in shaping individuals' healthcare-seeking behaviors and their reliance on health insurance, a relationship well-documented in health economics literature. Ayanore et al. (2019) investigated health insurance coverage in Ghana, arguing that income significantly influences the decision to use health insurance cards when seeking medical care, as it determines affordability and access to services. Their findings suggest that lower-income individuals are more likely to leverage insurance to offset out-of-pocket expenses, reflecting a cost-saving strategy in resource-constrained settings (Ayanore et al., 2019). Similarly, Phan et al. (2019) examined health insurance utilization in Vietnam, finding that individuals with lower income exhibit a stronger tendency to use health insurance cards during medical examination and treatment. This behavior is driven by the need to minimize financial burdens, as lower-income groups often lack the disposable income to cover direct healthcare costs (Phan et al., 2019). These observations align with the theory of demand for insurance, which posits that insurance acts as a normal good for low-income households, where the marginal utility of financial protection is high.

While Phan et al. (2019) argued that higher income leads to lower use of basic insurance, this study hypothesizes a positive effect based on the specific economic context of the sample. The theory of a non-monotonic relationship helps clarify this: demand for insurance rises with income before it falls (Rapi et al., 2025). The sample for this study consists of patients with low to middle incomes, with an average of 5.877 million VND. This places them on the initial, upward-sloping portion of the theoretical curve. For this group, a rise in income does not yet enable luxury out-of-pocket spending but rather enhances their ability to access formal healthcare systems, making the use of an insurance card a more feasible and attractive option. This aligns with studies that treat insurance as a normal good, where demand increases with the ability to pay (Chankova et al., 2008). Hence, this study suggests the fifth hypothesis as follows:

H5: Income has a positive effect on the decision to use health insurance.

Fig. 1: Theoretical Model



Source: Authors' compilation.

3. Research Methods

3.1. Research Design

This study was conducted using a quantitative method, using a cross-sectional survey design to analyze the factors influencing patients' decision to use health insurance. The research context is located at S.I.S Can Tho International General Hospital, a large and reputable private hospital in the Mekong Delta. Notably, this hospital attracts patients not only from Can Tho but also from many neighboring provinces because the number of high-quality private hospitals in the area is limited. This fact leads to the observation sample collected being able to reflect more diverse patient characteristics in the area, instead of being limited to a single locality. The choice of this setting to provide empirical evidence for a private health sector is encouraged but has not been exploited much in previous studies in Vietnam.

3.2. Participants and Data Collection

The subjects participating in the study were 400 patients who visited and received treatment at the hospital during the survey period. Samples are selected according to the convenience sampling method. We acknowledge that this method can lead to selection bias and limit the ability to generalize the results to the entire population. However, in the context of a case study in a specific area, this method allows for effective data collection from a target population. According to Tabachnick and Fidell (2001) for multivariate regression analysis, the sample size to be obtained is calculated by the formula: $50 + 8 * m$ (m is the number of independent variables). According to this formula, sample size = $50 + 8 * 5 = 90$. To increase the reliability of the study and eliminate invalid questionnaires after collection, the sample size was chosen to be $n = 400$.

The data collection tool was a structured questionnaire designed based on an overview of previous studies (e.g., Phan et al., 2019) to ensure content validity. Before the official implementation, the questionnaire was piloted on a small group of patients ($n=20$) to check the clarity and comprehensibility of the questions and to adjust accordingly. The questionnaire consists of three main parts: (1) Patient demographic and socio-economic information (gender, age, education level, job, income); (2) Health insurance card ownership and usage behavior when seeking medical care; and (3) Sub-questions to collect qualitative information on perceived barriers to using health insurance.

Data were collected through face-to-face interviews by trained researchers at the hospital.

3.3. Estimation method

The decision model to buy health insurance is based on the welfare theory of Arrow (1963), where individuals choose to buy health insurance to maximize expected benefits based on income level and medical expenses under uncertain conditions. An individual's choice about insurance is determined by the expected utility function for a consumption decision under uncertainty. Accordingly, people's decision to buy health insurance is based on the balance between the cost of health insurance and the benefits received from using health insurance for medical examination and treatment. Assume that the cost of insurance reduces income but reduces the cost of medical examination and treatment that the policyholder incurs. Propper et al. (2004) proposed a model of the expected benefit of policyholders under uncertain conditions. Given the initial asset value w , the individual's expected benefit function in the absence of health insurance takes the following form:

$$U_i^0 = \text{Max} [w_i + (y_i - c_i - \lambda_i)]$$

and in the case of health insurance:

$$U_i^1 = \text{Max} [w_i + (y_i - c_i - \theta_i - \lambda_i)]$$

whereas, U_i^0 and U_i^1 is the individual's expected benefit in the case of not buying health insurance and having health insurance, w_i is the initial property value, y_i is income và c_i is expenditure, θ_i is the insurance premium, λ_i is the expected medical cost.

ΔU^* is the difference of interest between U_i^1 and U_i^0 , then ΔU^* is rewritten as:

$$\Delta U_i^* = x_i' \beta + \varepsilon_i$$

When, $I_i = 0$ if the individual doesn't use health insurance in medical examination and treatment, $\Delta U_i^* \leq 0$,

$I_i = 1$ if the individual uses health insurance in medical examination and treatment, $\Delta U^*_i > 0$;

x'_i is a vector set of observed demographic variables that explain the factors affecting the benefits of individuals who decide to use health insurance for medical examination and treatment; these factors include individual characteristics, income and expenditure characteristics, quality of health services, and expected medical costs ε_i is the random error, and β is the vector of the estimated parameters.

Since the individual utility differential, ΔU^*_i is not observable, the coefficients can be estimated using a probabilistic model with the dependent variable being the binary variable (Papke and Wooldridge, 1993). Accordingly, the factors affecting the use of health insurance are analyzed by a binary logistic model, including gender, age, education level, occupation, and average income. The probability of an individual using health insurance for medical examination and treatment has the following form:

$$\log_e \left[\frac{P_i}{1-P_i} \right] = B_0 + B_1X_1 + B_2X_2 + \dots + B_kX_k \quad (1)$$

$$\text{or } Y = \beta_0 + \beta_1\text{SEX}_i + \beta_2\text{AGE}_i + \beta_3\text{EDU}_i + \beta_4\text{JOB}_i + \beta_5\text{INCOME}_i + \varepsilon_i$$

whereas Y is the decision to use health insurance; β are the estimated coefficients of the regression model; ε_i random error; SEX_i and AGE_i are the sex and age of patient i ; EDU_i is the education level of patient i ; JOB_i is the field of work of patient i and INCOME_i is the monthly income of patient i . Table 1 summarizes the characteristics of the variables in the research model and the expected signs about the impact of the independent on the dependent variable.

Table 1: Description of Variables in Binary Logit Regression Model

Variable	Measurement	Expected signs
Sex of patient (SEX)	Dummy variable, 1= male, 0 = female	+
Age of patient (AGE)	Age number	+
Education level (EDU)		
- High school (EDU1)	Dummy variable, 1 = High school education, 0 = otherwise	+
- Intermediate college (EDU2)	Dummy variable, 1= Intermediate college education, 0 = otherwise.	-
- University degree and above (EDU3)	Dummy variable, 1 = University education and above, 0 = otherwise.	-
Job (JOB)		
- Education, training, health (JOB1)	Dummy variable, 1 = working in the field of education, training, health, 0 = otherwise.	+
- Retail trade, vehicle repair (JOB2)	Dummy variable, 1 = working in the field of retail trade, vehicle repair, 0 = otherwise.	+
- Agriculture, forestry and fishery (JOB3)	Dummy variable, 1 = working in the fields of agriculture, forestry and fishery, 0 = otherwise.	+
Income (INC)	Monthly income, Million VND	+
Decision to use health insurance (Y)	Dummy variable, 1 = using health insurance, 0 = otherwise.	

Source: Authors' compilation.

4. Results and Discussion

4.1. Descriptive Statistics and Perceived Barriers:

Qualitative insights from the survey further illuminate these patterns. At lower-tier facilities, the quality of insured healthcare services often fails to meet expectations due to shortages in specialized medical personnel and technical capacity, leading to overcrowding and long waiting times at higher-tier hospitals. Slow improvements in the professionalism and ethics of healthcare staff have fostered apprehension among insured patients, eroding trust in the system (Cai, 2023). Administrative complexities also deter usage, as procedures and waiting times for insured care are perceived as significantly more cumbersome than for non-insured services. Economic factors play a crucial role; workers with better financial conditions often prefer self-selecting hospitals and doctors, citing procedural hassles as a major deterrent. Some insured individuals, despite recognizing the importance of health insurance, opt not to use it due to these administrative barriers, a behavior consistent with rational choice theory, which posits that individuals make decisions by weighing costs and benefits within their specific circumstances (Becker, 1976).

According to Table 2, the study surveyed 400 patients to explore health insurance utilization patterns and underlying barriers. Quantitative findings reveal that only 31.75% (n = 127) of patients used health insurance cards for medical examination and treatment, while 60.0% (n = 240) cited a lack of perceived benefits as the primary reason for non-use.

Table 2: Barriers to Using Health Insurance Cards

Criteria	Number of observations	Proportion (%)
(a) Quality of health services		
Transparency is still limited	33	8.25
Health insurance participants do not fully understand their rights and responsibilities	127	31.75
Additional fees are costly	240	60.00
Total	400	100.00
(b) The implementation of publicizing the rights of health insurance patients at the hospital (such as the names of drugs, medical services, techniques used in treatment and paid by health insurance, ...)		
Good	93	23.25
Normal	121	30.25
Not good	186	46.50
(c) Administrative procedures for medical examination and treatment under health insurance		
Fast	95	23.75
Normal	49	12.25
Not convenient	256	64.00
Total	400	100.00

Source: Authors' calculation based on survey data.

The transparency and publicity in the provision of medical services and the rights of health insurance participants are still limited (33 opinions, equivalent to 8.25%). More specifically, up to 46.50% of patients said that the hospital did not do a good job of

publicizing the rights of health insurance patients at the hospital (such as the names of drugs, medical services, and techniques used in treatment and paid by health insurance). Furthermore, regarding the administrative procedures for medical examination and treatment under health insurance, only 23.8% (95 opinions) of patients surveyed assessed that making records and medical examination and treatment procedures under health insurance at the hospital was convenient and quick, but up to 64% (256 opinions) of patients said that the administrative procedures at the departments were not convenient, causing inconvenience to patients.

Besides, specific demographic groups face distinct challenges. Younger workers (aged 18–34), often preoccupied with daily livelihoods, report not using insurance due to a lack of awareness about enrollment procedures and benefits, highlighting an information gap. Conversely, some low-income workers, despite understanding insurance’s value, find the cost prohibitive, particularly under Vietnam’s household-based enrollment policy, leading them to forgo participation (Do et al., 2014). Higher-income workers may opt for alternative insurance or self-funded care, perceiving insured services as limited by factors such as physician attitudes, medication quality, and paperwork (Nguyen, 2020). Cultural preferences also influence behavior, as traditional medicine and home remedies remain deeply ingrained in the Mekong Delta, often preferred over formal hospital treatments due to accessibility and trust in local practices (Giang et al., 2023). These findings highlight the interplay of systemic, economic, and cultural barriers in shaping health insurance utilization, underscoring the need for targeted interventions to enhance uptake in underserved regions.

Table 3: Frequency of Health Insurance Utilization

Frequency of Health insurance utilization (times/year)	Number of observations	Proportion (%)
1 - 3 times	114	89.76%
4 - 6 times	3	2.36%
7 - 9 times	2	1.57%
10 times or more	8	6.30%
Total	127	100.0%

	Mean	Maximum	Minimum	Standard deviation	Mean
Frequency of Health Insurance Utilization (time)	400	1	12	1.61	1.60

Source: Authors' calculation based on survey data.

Table 3 illustrates the survey results on the frequency of health insurance use. On average, patients used their health insurance cards 2.4 times per year, with usage ranging from a minimum of 1 to a maximum of 12 times. More revealing than the average, the data indicates a clear polarization in usage patterns, clustering individuals into three distinct groups. The vast majority of respondents (89.8%) were low-frequency users, accessing services only 1 to 3 times annually. Patients using insurance only once annually often did so for routine annual health check-ups or in response to serious health concerns requiring specialized diagnostic tests, such as blood tests, urinalysis, ultrasounds, or endoscopies. For common ailments like colds, fevers, or diarrhea, these patients typically

preferred purchasing over-the-counter medications from pharmacies rather than seeking hospital care, a behavior consistent with self-medication practices prevalent in Vietnam due to accessibility and cost considerations (Nguyen, 2020).

In contrast, patients with the highest frequency of usage (12 times per year) were primarily those with chronic conditions, such as cardiovascular diseases, necessitating regular follow-up visits every 1 to 2 months. These patients relied on hospital-prescribed medications, which are often restricted to prescription-only dispensing and unavailable over the counter, highlighting the role of insurance in managing chronic care (Cai, 2023). Moreover, once patients-initiated treatment using health insurance, they were unable to switch to non-insured services for subsequent visits due to administrative constraints within Vietnam's health insurance system, compelling continued use of insurance for follow-up care (Do et al., 2014). This lock-in effect underscores a systemic barrier that influences utilization patterns, particularly for chronic disease management.

Table 4 illustrates the descriptive statistics of the variables used in the regression model.

Table 4: Descriptive Statistics

Panel A: Quantitative Variables				
Variable	Mean	Maximum	Minimum	Standard deviation
AGE (year)	34.000	40.000	23.000	3.810
INC (million VND)	5.877	8.000	2.200	1.155
Panel B: Dummy Variables				
Variable	Value	Number of observations	Proportion (%)	
SEX	1= male	78	19.50	
	0= female	322	80.50	
EDU1	1 = High school education	142	35.50	
	0 = otherwise.	258	64.50	
EDU2	1= Intermediate college education	99	24.75	
	0 = otherwise.	301	75.25	
EDU3	1 = University education and above	79	19.75	
	0 = otherwise.	321	80.25	
JOB1	1 = working in the field of education, training, health	61	15.25	
	0 = otherwise.	339	84.75	
JOB2	1 = working in the field of retail trade, vehicle repair	151	37.75	
	0 = otherwise.	249	62.25	
JOB3	1 = working in the fields of agriculture, forestry and fishery	121	30.25	
	0 = otherwise.	279	69.75	
Y	1 = using health insurance	127	31.75	
	0 = not using health insurance	273	68.25	

Source: Authors' calculation based on survey data.

As can be seen from Table 4, the average age of participants is 34 years (SD = 3.810), with a range from 23 to 40 years, indicating a predominantly middle-aged cohort. This age distribution aligns with Vietnam's working-age population, which often faces increasing health needs due to occupational and lifestyle factors (Giang et al., 2023). The mean monthly income is VND 5.877 million (SD = 1.155 million), ranging from VND 2.2 million to VND 8 million, reflecting a relatively low to middle-income profile. This income level is consistent with economic conditions in the Mekong Delta, where many households operate at or near subsistence levels, potentially heightening reliance on cost-saving mechanisms like health insurance (Cai, 2023).

Demographically, the sample is predominantly female (80.5%, $n = 322$), which may reflect gender differences in healthcare-seeking behavior, as women in Vietnam often take on primary caregiving roles (Nguyen, 2020). Education levels vary, with 35.5% ($n = 142$) having high school education (EDU1), 24.75% ($n = 99$) having intermediate college education (EDU2), and 19.75% ($n = 79$) holding university degrees or higher (EDU3), while the remaining 75.25% ($n = 301$) fall into other categories. Occupationally, 37.75% ($n = 151$) work in retail trade and vehicle repair (JOB2), 15.25% ($n = 61$) are in education, training, or health sectors (JOB1), and 30.25% ($n = 121$) are in agriculture, forestry, or fishery (JOB3), with 62.25% ($n = 249$) in other fields. The predominance of retail and agricultural workers mirrors the region's economic structure, where informal and semi-formal employment is common (Cai, 2023).

Notably, the rate of health insurance utilization for medical examination and treatment is low, at 31.75% ($n = 127$), with 68.25% ($n = 273$) not using insurance ($Y = 0$). This low utilization rate in the Mekong Delta can be attributed to several region-specific factors. First, limited awareness of health insurance benefits may hinder uptake, as public health campaigns often struggle to penetrate rural areas (Do et al., 2014). Second, distrust in the insurance system or perceived low quality of insured services may deter usage, a common issue in Vietnam's public healthcare facilities (Nguyen, 2020). Third, economic considerations likely play a role; patients may prefer out-of-pocket payments, believing they ensure faster or higher-quality care, a behavior noted in developing contexts (Levy and Janke, 2016). Finally, cultural factors are significant, as traditional medicine and home remedies remain deeply ingrained in the Mekong Delta, often preferred over formal hospital treatments due to accessibility and trust in local practices (Giang et al., 2023). These findings underscore the need for targeted interventions to address both systemic and cultural barriers to health insurance utilization in this region.

4.2. Regression Results

Table 5 presents the estimation results of the binary logit regression model.

Table 5: Estimated Results of the Binary Regression Model

Variable	Coefficient	Standard error	Z	P> z	Marginal impact
SEX	-0.315	0.313	-1.01	0.314	0.022
AGE	0.086*	0.033	2.57	0.010	
EDU					
- EDU1	-0.345	0.405	-0.85	0.394	0.391
- EDU2	-0.405	0.662	-0.61	0.540	
- EDU3	0.744	0.607	1.23	0.220	
JOB					0.391
- JOB1	1.564***	0.420	3.72	0.000	

Table 5: Estimated Results of the Binary Regression Model (cont.)

Variable	Coefficient	Standard error	Z	P> z	Marginal impact
- JOB2	0.946*	0.374	2.53	0.011	0.237
- JOB3	0.207	0.396	0.52	0.601	
INC	0.000000229**	0.0000000573	2.08	0.038	0.0000000573
Constant	-5.647***	1.151	-4.91	0.000	
Number of observations				400	
Prob> χ^2				0.0000	
LR chi2(9)				45.04	
Pseudo R2				0.0901	
Percentage of correct prediction of the model				70.50%	

Notes: The valued in parentheses () are adjusted standard errors.

*, ** and *** indicate statistical significance at the 10%, 5% and 1% level, respectively

Source: Authors' estimation based on survey data.

The results from Table 5 show that the Likelihood Ratio (LR) test has a p-value of 0.0000, which is less than the significance level α (0.01). Based on the LR test results, independent variables simultaneously have a significant effect on the decision to use health insurance when using medical services, with significance at the level of 1%. Moreover, the model's Pseudo-R2 coefficient is 0.0901, indicating that the explanatory level of the variables in the model is relatively good. The correct prediction rate of the whole model is quite high, at 70.50%, specifically

In 273 observed cases without using health insurance, 252 cases without health insurance are predicted; the correct prediction rate is $252/(252+21) = 92.31\%$.

In 127 health insurance usage observations, 30 health insurance use cases are predicted; the correct prediction rate is $30/(30+97) = 23.62\%$.

Thus, the average rate of correct prediction is $(252 + 30)/400 = 70.5\%$.

4.3. Discussion

The results from Table 5 show that age (AGE); working in the field of education, training, or health (JOB1); working in the field of retail trade or vehicle repair (JOB2); and income (INC) have a significant effect on the likelihood of using health insurance. The specific effects of variables on the decision to use health insurance can be explained as follows:

Based on the regression results in Table 5, the age variable is statistically significant at the 5% level and has a positive impact on the decision to use health insurance ($\beta_2 = 0.086$). Thus, in the absence of other factors, if the patient's age increases by 1 year old, the ability to use health insurance for medical care increases by 2.2% (with a marginal impact factor of 0.022). In this study, because the survey subjects were middle-aged (ranging from 20 to 40 years old), there was a positive correlation with the decision to use health insurance cards. This is consistent with initial expectations and the results of previous studies. As people get older, people worry more about illness (Donkers et al., 2001).

Confirming Hypothesis H5, the regression results in Table 3 show that the income factor has a positive correlation with using health insurance with the estimated coefficient $\beta_5 = 0.000000229$ at the significance level of 5%. Provided other factors are constant, an

increase in monthly income by 1 million VND is associated with an increase in the probability of using health insurance by 5.73 percentage points. This finding is consistent with the initial, upward-sloping phase of the non-monotonic theory of insurance demand. The subjects in this study belong to the low- to middle-income group, so an increase in their income primarily functions as an enabling factor. It improves their financial ability to seek formal medical care at a better facility like a private hospital, making the use of an insurance card a practical way to manage costs. Therefore, the tendency to use health insurance increases with income for this demographic, which is different from high-income groups who might have less need for basic insurance as their wealth allows them to pay for premium services directly.

According to the regression model results, there are differences in the decision to use health insurance among patients working in different fields. Accordingly, people working in the fields of education, training, health (JOB1), and retail trade and vehicle repair (JOB2) will tend to decide to use health insurance more than people working in other fields. First, at the significance level of 1%, people working in the education, training, and healthcare sectors will have a higher probability of using health insurance than those operating in other industries (39.1 %). This can be explained by the fact that the workers in the education, training, and health sectors, such as tutors and doctors already have health insurance (compulsory) due to the characteristics of their jobs. Moreover, their work agencies periodically ask them to go for health checks, so their demand for health insurance cards will be higher than that of other subjects. Their average monthly income is higher and more stable than that of other sectors such as agriculture, forestry, and fishery (depending on the season), and retail trade (depending on the tastes and competition of the market). Moreover, most employees in the education, training, and health groups can still continue to work part-time to earn income when they retire. Therefore, it can be concluded that people with stable incomes tend to use health insurance cards more than others because they do not want to lose their jobs and income. This is in contrast to the study of Fitzgerald (1987). Secondly, people who are active in retail trade and vehicle repair will have a higher probability of using health insurance than those operating in other industries, 23.7%, with a significance level of 5%. Due to the nature of their work, they do not work according to fixed hours (office hours), so they can visit medical facilities at any time. Although the waiting time for medical examination and treatment under the health insurance package is quite long, it can save them a lot of costs compared to other services. On the other hand, their income is not stable, so they need support from the state for medical expenses.

However, in this estimation model, two variables—gender and education level—do not exhibit statistical significance. This finding contrasts with prior studies, such as Dohmen et al. (2011) and Outreville (2015), which suggest that gender and education influence risk aversion and, consequently, insurance utilization. Specifically, the lack of a statistically significant effect of gender aligns with Harrison et al. (2007), who found no consistent gender-based differences in risk preferences in certain contexts. In the Vietnamese setting, particularly in the Mekong Delta, several factors may explain these results. The mandatory nature of Vietnam's health insurance policy, as stipulated by the 2014 amended Health Insurance Law, likely diminishes gender-based disparities in utilization, as participation is driven by legal obligation rather than individual risk attitudes. Additionally, cultural norms in Vietnam, where women often manage household healthcare decisions, may lead to similar utilization patterns across genders, especially within the middle-aged sample (20–40 years) surveyed here. The high proportion of female respondents (80.5%) further reduces the variability of the gender variable, potentially weakening its statistical power. Regarding education level, the widespread dissemination of health insurance benefits through government campaigns

may homogenize awareness across educational strata, reducing its influence on utilization decisions. Moreover, in this low- to middle-income sample, economic factors such as income and occupation appear to overshadow education as determinants of health insurance use, particularly in the context of a private hospital where cost-saving motives may dominate. These findings highlight the unique interplay of policy, culture, and socioeconomic conditions in shaping health insurance behavior in Vietnam, distinguishing this study from international evidence.

5. Conclusions

Based on primary data collected from 400 patients at private hospitals in the Mekong Delta, the study uses a binary logistic regression model to analyze the impact of factors affecting the decision to use people's health insurance when medical examination and treatment are conducted at an international general hospital. Research results show positive effects of age and income on the decision to use health insurance. Besides, people working in the fields of education and health tend to use health insurance more than those in other industries. On the contrary, the research results show that gender and education level have no statistically significant impact on the decision to use insurance. Research shows that the rate of using health insurance is still low. One of the main reasons is that the patient does not know about the health insurance policy or the terms specified in the Health Insurance Law (age, premium rate, registration procedure, etc.). Through the survey, the study also statistically identifies some of the current limitations of the health insurance service system, such as (a) cumbersome administrative procedures for medical examination and treatment with health insurance; (b) the increasing cost of medical examination and treatment by health insurance affects the balance of the medical insurance fund; (c) patients have not been fully publicized about their benefits when using health insurance for medical examination and treatment.

This study contributes to the existing literature in several key aspects. Firstly, by focusing on a large private international hospital in the Mekong Delta, this research provides quantitative evidence on the determinants of health insurance utilization within Vietnam's burgeoning private healthcare sector—a context largely overlooked by previous studies that have concentrated on public facilities. Secondly, the study offers empirical results to the theory of insurance demand. Our finding of a positive relationship between income and insurance use among a low-to-middle-income cohort provides empirical support for the initial, upward-sloping segment of the non-monotonic (inverted U-shaped) demand curve, challenging simple assumptions in developing economic contexts. Finally, the non-significant findings for gender and education under Vietnam's mandatory insurance policy highlight the critical role of institutional factors in moderating behavior established by economic theories.

Based on experimental results, some recommendations are proposed to increase the rate of patients using health insurance cards in hospitals. Regarding overcoming limitations on medical examination and treatment by health insurance, the government and state management agencies need to improve the quality of facilities and medical staff at low-level medical facilities. Specifically, focusing on the private healthcare sector, several recommendations are proposed to improve the utilization and patient satisfaction of health insurance. First, private hospitals should proactively develop streamlined procedures specifically for patients with health insurance. This will help reduce waiting times and complicated paperwork, making health insurance a more attractive option than direct payment. At the same time, the government and stakeholders should encourage the adoption of digital solutions, such as integrated claims processing systems between

private healthcare facilities and social insurance agencies, to simplify and speed up the process. Second, people need to improve their understanding of the process and policies of health insurance to take full advantage of their benefits. The awareness should be increased through collaborative initiatives, such as public-private partnerships (PPPs) to create targeted communication campaigns. These campaigns need to clarify benefits, covered categories and co-payment structures of health insurance in a transparent manner, especially for patients intending to use services at private medical facilities.

Although the study provided empirical evidence on the factors influencing the decision to use health insurance cards, the study still has some limitations that may provide further development opportunities for research in Vietnam. The study surveyed patients at private hospitals, but the number of observations was limited, excluding public hospitals and rural areas. In addition, the study omitted subjects according to regional criteria, which may skew the study results due to regional characteristics. In addition, the study only focused on factors affecting the decision to use health insurance according to demographic factors, ignoring the cognitive behavioral factors of patients and other contextual factors. Therefore, further studies can assess the cognitive behavioral factors of patients in using health insurance cards in different areas and different patient groups.

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