

Factors Affecting the Expansion of Voluntary Health Insurance Participants in Ninh Binh, Vietnam



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SUMMARY: Health insurance is one of the pillars of social security in Vietnam. Moving towards universal health insurance is the right direction to support the country's sustainable economic development. Ninh Binh is a province with high rate coverage of health insurance compared to other provinces and cities across the country. However, to reach 100% of the people participating in health insurance, there are still many difficulties. With 205 valid questionnaires, the research team used quantitative research method to assess the factors affecting the expansion of voluntary health insurance participants in Ninh Binh province, Vietnam. Through analyzing the reliability of the scale, exploratory factor and linear regression, the research team has pointed out the factors that have a strong impact on the expansion of health insurance participants such as income or communication. From this result, the research team identified difficulties and existences in the expansion of voluntary health insurance participants in the province such as precarious income, certain employer's limited awareness of health insurance policies, health system's ability to respond and inadequate quality care for people

KEYWORDS: Health insurance, Ninh Binh, Vietnam

1. INTRODUCTION

Statistics of Vietnam Social Insurance showed that, in recent years, health insurance coverage has been expanded, health insurance participant proportion has increased rapidly. In 2021, the whole country had 58.97 million participants, by 2019, the health insurance coverage rate nationwide reached more than 89% of population with 85.945 million people, exceeding the set target of 85% by 2020 [6]. According to experts, health insurance coverage has increased rapidly because the Health Insurance Law much focuses on benefits of health insurance participants, such as the poor, near-poor, and ethnic minorities living in areas with difficult and extremely difficult economic and social conditions, relatives of martyrs and people with meritorious services. In 2019, the universal health insurance coverage in Ninh Binh was 85%, exceeding the target of 85% set by the government [7]. In spite of positive result of participants in the province, it is much more difficult to achieve universal health insurance coverage because the group of non-participants in health insurance gathers in the informal sector.

According to the Informal Labor Report (2018), the informal sector labor force in Ninh Binh province accounts for a high proportion of more than 60% of the province's total labor force [9]. People working in the informal sectors face many difficulties such as precarious and unstable jobs, low income, long working hours in small-scale production and business establishments and inattentive working conditions. In particular, labor contracts are unavailable or are only verbally agreed, which means that employees are not allowed to pay social insurance, health insurance or any other allowances or social welfare. From this fact, it is necessary to conduct research on factors affecting the expansion of voluntary health insurance participants in Ninh Binh province. The research will contribute to enriching the theoretical and practical basis for universal health insurance.

2. THEORETICAL FOUNDATIONS, RESEARCH MODELS AND HYPOTHESES

2.1. Theoretical foundations

Health Insurance

In the consolidated document 01/VBHN-VPQH Health Insurance Law No. 25/2008/QH12 dated November 14, 2008 of the National Assembly, effective from July 1, 2009, as amended and supplemented by: Law No. 46/2014/QH13 dated June 13, 2014 of the National Assembly amending and supplementing a number of articles of the Health Insurance Law, effective from

Factors Affecting the Expansion of Voluntary Health Insurance Participants in Ninh Binh, Vietnam

January 1, 2015. Health insurance is a compulsory insurance form that is applied to the subjects specified in this Law for health care, not for profit, organized by the State [4].

Health insurance participants

Employees working under indefinite-term labor contracts or labor contracts with a term of full 3 months or more in accordance with the labor law; employees who are managers of enterprises enjoying salaries and wages according to provisions of the law on wages and salaries; cadres, legally specified civil servants and public employees [4].

2.2. Research model and hypothesis

Based on general theory of consumer behavior, the research team presented and applied Ajzen and Fishbein's Theory of Reasoned Action (TRA) and Planned Behavior (TPB) models to prepare a research model for factors affecting the expansion of health insurance participants [1]. Accordingly, there are 6 factors affecting employees' intention to participate in health insurance in informal sectors in Ninh Binh province, with assumption that 5 factors: Moral Responsibility; Knowledge; Attitude; Behavior; Communication have a positive relationship on people's intention to participate in health insurance. On the contrary, the research team also thinks that Income has a negative effect on people's intention to participate in health insurance.

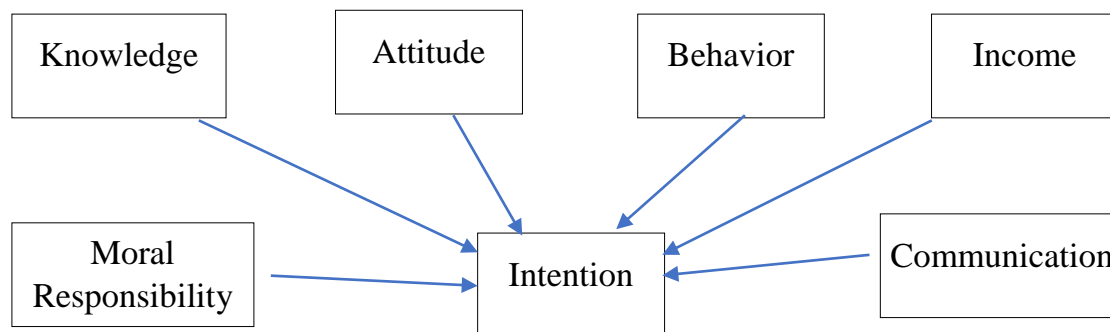


Figure 1: Model of factors employee's intention to participate in health insurance

Source: Application of theory and collected results

Attitude towards health insurance: The intention to participate in health insurance will increase when employees have a positive attitude towards it. Thus, attitude has a positive influence on intention to participate in health insurance.

Knowledge of health insurance: The better people's understanding of health insurance policies is, the higher their intention to participate in health insurance. Knowledge about health insurance has a positive effect on intention to participate in health insurance.

Income: intention to participate in health insurance is inversely proportional to employee's income

Moral responsibility: Moral responsibility has a positive effect on the intention to participate in health insurance.

Controlling behavior: Behavioral control has a positive effect on intention to participate in health insurance.

Health insurance communication: Health insurance communication has a positive influence on the intention to participate in health insurance.

3. RESEARCH METHODS

In the theoretical basis, the research team gave an overview of health insurance such as the concept, characteristics, roles and participants of health insurance. Along with that, the topic has synthesized theories related to consumer behavior such as the theory of rational action TRA and the model of intended behavior TPB. Based on the theoretical basis of the models and the conditions of income, understanding, and moral responsibility, etc., the research team has applied to build a model of Factors affecting the expansion of insurance participants. health care in Ninh Binh province.

The study uses a quantitative method with the goal of testing the proposed research model. The survey sample was taken by the convenience method. The sample size taken depends on the analytical method, this study uses descriptive statistics and some tests, so according to Hoang Trong and Chu Nguyen Mong Ngoc (2008), the sample size is equal to at least 5 times the observed variable [8]. Therefore, with 250 questionnaires distributed during the investigation in Ninh Binh province, the research team collected 225 votes, of which 20 were invalid, the remaining 205 votes were given. Input and data analysis are sufficient to ensure the analytical methods in the study with 30 component variables. Using a questionnaire to survey the opinions of workers in Ninh Binh province who have never or are currently participating in health insurance. The study used descriptive statistical analysis software SPSS 22.0 to process the collected information.

Factors Affecting the Expansion of Voluntary Health Insurance Participants in Ninh Binh, Vietnam

4. RESEARCH RESULTS

Determining that the development of health insurance is one of the important tasks towards the goal of universal health insurance. In the past 5 years, Ninh Binh has had many solutions to develop health insurance participants in the province, contributing to the rate of 92% of the population participating in health insurance, exceeding 7% of the target of Resolution No. Provincial Party Committee XXI, term 2015-2020. In order to gradually increase and move towards universal health insurance coverage, Ninh Binh's health insurance industry has strengthened propaganda on health insurance policies, creating consensus from the Party committees and authorities of different localities. levels, economic organizations to the masses. Along with that, coordinate with related agencies and units to implement synchronously and drastically, such as assigning annual health insurance targets to localities and spending budget to support the purchase of insurance cards. health care for the people.

4.1. Some results of sample characterization

From the number of valid questionnaires, the research team coded and entered the data. Based on the results of data cleaning with the data analysis software SPSS22, the results obtained are 205 questionnaires that are valid and have been cleaned. After conducting the survey to collect information and process data, we have general information about the surveyed sample and the following factors:

Table 1. Results of study sample characteristics

Scale		Frequency (Person)	Percentage (%)
Gender	Female	124	60.5
	male	81	39.5
Age	15 to 25	21	10.2
	26 to 35	30	14.6
	36 to 45	49	23.9
	46 tu 55	28	13.7
	From 56	77	37.6
Education level High	School	22	10.7
	Intermediate college	131	63.9
	University	38	18.5
	Other	14	6.8
Occupation	Agriculture, forestry and fishery	46	22.4
	Light industry, garment, construction, housework	110	53.7
	Education, health, culture, society	24	11.7
	Retail trade	8	3.9
	Other	17	8.3

Source: Processing of the research team's investigation results

4.2. Survey data analysis results

Cronbach's alpha reliability

Analyze the reliability of the scale Using the analysis of the scales by the Cronbach's alpha reliability coefficient will help us to eliminate the observed variables that are not suitable for the study of the topic and at the same time it limits the variables that do not contribute usefully to the topic. It is difficult to determine the variability and identify errors in the variables. They are considered garbage variables and will be removed in the next analysis steps. According to Hoang Trong and Chu Nguyen Mong Ngoc. (2005). "The requirement for Cronbach's Alpha coefficient must be greater than 0.6 but preferably greater than 0.7". However, when analyzing, if there are observed variables in the table that violate one of the following two principles, they will also be disqualified. The first principle is that it is mandatory to remove the variable that is the correlation coefficient of the total variable less than 0.3, 0.4 or 0.5 (depending on the purpose or novelty of the research content). In the content of this study, the research team that chooses the total correlation coefficient less than 0.3 will be excluded. The second rule is the Cronbach's alpha coefficient if the variable type is larger than the current Cronbach' Alpha coefficient.

Factors Affecting the Expansion of Voluntary Health Insurance Participants in Ninh Binh, Vietnam

Table 2. Scale reliability coefficient testing results

Scale	Initial observed variable	Cronbach's Alpha	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Remaining observed variable
Moral Responsibility	6	0.801	0.41	0.80	6
Knowledge	5	0.928	0.723	0.927	5
Attitude	3	0.926	0.807	0.925	3
Behavior	3	0.879	0.740	0.789	3
Income	5	0.941	0.825	0.930	5
Communication	5	0.897	0.720	0.881	5
Intention	3	0.877	0.757	0.833	3

Source: Processing of the research team's investigation results

The research team has performed the analysis of the scale in turn using the Cronbach's alpha reliability coefficient for each scale and is summarized in Table 2. It can be seen that the minimum total variable correlation of the scales is guaranteed to be > 0.5 is suitable for research purposes. Calculation results of Cronbach's Alpha coefficient according to each research component according to many opinions, the scale with Cronbach's Alpha coefficient of 0.8 or higher is a good scale, from 0.7 to nearly 0.8 is used. Okay. This can show good scales and ensure reliability for future research and analysis. Data on Cronbach's alpha coefficient if the variable type (the largest) is smaller than the reliability coefficient, and both conditions are satisfied for keeping the observed variable for the following analyses. With the data satisfying the requirements of the above reliability analysis, all variables included in the Cronbach's alpha analysis were kept for the following analyses. Therefore, it can be concluded that: the scale used in the study is appropriate and reliable and can be used to conduct factor analysis and further research steps.

Exploratory factor analysis

The analysis of Cronbach's Alpha reliability coefficient in the previous section helped confirm that the reliability of these scales is completely consistent with the research topic. However, the analysis of Cronbach's Alpha reliability coefficient is only performed according to each scale. This result does not mean that the scales are not related to each other. For example, the observed variable of one scale has a relationship with the observed variable of another scale, leading to the scale not reaching the convergent value and discriminant value due to error because the variables are correlated with each other. together. The Cronbach Alpha method is used to evaluate the reliability of the scale. The Exploratory Factor Analysis (EFA) method, for short, helps us to evaluate two important types of values of the scale: convergent value and discriminant value. According to Hoang Trong and Chu Nguyen Mong Ngoc, (2005). The condition for exploratory factor analysis is to satisfy the following requirements: Factor loading > 0.5 , $0.5 \leq KMO \leq 1$: KMO coefficient (Kaiser-Meyer-Olkin) is the index used to consider the appropriateness of factor analysis. A large KMO value is appropriate for factor analysis. Also according to Hoang Trong and Chu Nguyen Mong Ngoc, (2005), Bartlett's test has statistical significance (Sig. < 0.05): This is a statistical quantity used to consider the hypothesis that the variables have no correlation in the total. body. If this test is statistically significant (Sig. < 0.05), the observed variables are correlated with each other in the population. Percentage of variance $> 50\%$: Shows the percentage variation of the observed variables. That is, considering the variation is 100%, this value tells how much the factor analysis explains. Table 3, the combined results of EFA exploratory factor analysis for each scale showed that the KMO coefficient (Kaiser-Meyer-Olkin) > 0.5 for all scales. This satisfies the first condition for this analysis. Next, we see that the value Sig < 0.05 is the standard guarantee for all the scales of the independent variable components, the total variance extracted is greater than 50% as prescribed and all converge to only 1. common factor, with all factor weights being 0.5.

Table 3. Synthesized results of exploratory factor analysis (EFA) for each scale

Scale	KMO coefficient	Sig	Total variance explained	Number of factors eliminated	Number of converging factors
Moral Responsibility	0.733	.000	68.230	3	2
Knowledge	0.859	.000	77.830	0	1
Attitude	0.750	.000	87.202	0	1

Factors Affecting the Expansion of Voluntary Health Insurance Participants in Ninh Binh, Vietnam

Behavior	0.731	.000	80.620	0	1
Income	.904	.000	80.879	0	1
Communication	.849	.000	71.058	0	1
Intention	.743	.000	80.338	0	1

Source: Processing of the research team's investigation results

With the results of exploratory factor analysis for each scale, all the conditions mentioned above are guaranteed. After removing the three non-converging variables, namely Moral Responsibility 4,5,6 the 24 observed variables of this independent scale are kept for the next step of analysis.

After performing exploratory factor analysis, we have 24 observed variables that are eligible to be included in exploratory factor analysis for all independent variable scales. From the table of exploratory factor analysis results for all components of the scale of independent variables, we see that the total variance extracted is 77.237% > 50%. KMO index of 0.839 ensures the requirement, in addition, sig also gives a result of 0.000 < 0.05, ensuring our analysis. The final step is to check the results of the factor rotation matrix to see how many factors the observed variables will converge on and which factors are made up of. Performing the factor rotation matrix shows us that 24 observed variables still converge on the 6 initial construction factors including the group of factors of income, knowledge, communication, attitude, behavior, moral responsibility with all factor weights as large as 0.5.

Table 4. Extracted from Table of Exploratory Factor Analysis EFA common to all scales of independent variables

KMO		.839							
Sig		.000							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.924	25.643	25.643	6.924	25.643	25.643	4.111	15.226	15.226
2	4.311	15.967	41.611	4.311	15.967	41.611	3.980	14.741	29.968
3	2.912	10.784	52.395	2.912	10.784	52.395	3.605	13.352	43.319
4	2.240	8.296	60.691	2.240	8.296	60.691	2.632	9.748	53.067
5	1.851	6.857	67.548	1.851	6.857	67.548	2.390	8.851	61.918
6	1.534	5.680	73.228	1.534	5.680	73.228	2.273	8.417	70.335
7	1.083	4.009	77.237	1.083	4.009	77.237	1.864	6.902	77.237
8	.883	3.269	80.506						

Source: Processing of the research team's investigation results

Regression analysis After performing EFA analysis to test the convergent validity and discriminant validity of the scales, we will test the hypotheses proposed in the research model. To do this we will use multivariate regression. Multivariate regression analysis, we need to note the preconditions for this method, including: The sum of the remainders = 0 and the residuals are normally distributed. There is no collinearity (independent variables are not highly correlated with each other). No autocorrelation occurs. There is no unequal variance. To evaluate the relationship and impact direction of the group of income, knowledge, communication, attitude, behavior, and ethical responsibility in the analysis above, this study used the analytical method. Regression analysis with the help of SPSS software 22. In the regression equation to be performed, it is a multivariate regression equation, in order to determine the important role of each component in evaluating the relationship. between intentions for the components of the scale mentioned above. The multivariable regression equation showing the relationship between intention for the components of the built scale has the following form:

$$Y = a_0 + a_1 X_1 + a_2 X_2 + a_3 X_3 + a_4 X_4 + a_5 X_5 + a_6 X_6$$

In there:

Y: The dependent variable represents the predictive value of the intention to participate in health insurance of informal sector workers.

a₀, a₁, a₂, a₃, a₄, a₅, a₆: are regression coefficients

X₁, X₂, X₃, X₄, X₅, X₆: Are the independent variables in order of income, knowledge, communication, attitude, behavior, and moral responsibility.

Factors Affecting the Expansion of Voluntary Health Insurance Participants in Ninh Binh, Vietnam

The results of the linear regression analysis are as follows:

Table 5. Linear regression results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822a	.676	.666	.51547

Source: Processing of the research team's investigation results

We see that Adjusted R square = .666(>0.5) shows 6 components that affect the intention to participate in health insurance of workers in Ninh Binh province. Thus, the fit of the model is relatively high. Looking at the results of the regression analysis, we see that the preconditions for the regression analysis are satisfied. Thus, we can consider the results of the regression analysis to be reliable. However, this fit is only true for the sample data. To test whether the model can be inferred for the real population, we must test the model's fit:

Hypothesize H₀: The factors Moral Responsibility, Knowledge, Attitude, Behavior, Income, Communication and Intention have no relationship with each other.

H₁: The factors Moral Responsibility, Knowledge, Attitude, Behavior, Income, Communication and Intention have a relationship with each other.

Choose significance level = 0.05, corresponding to 95% level

Table 6. ANOVA testing

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	109.565	6	18.261	68.725	.000 ^b
	Residual	52.610	198	.266		
	Total	162.176	204			

Source: Processing of the research team's investigation results

The results of the ANOVA test show that the F-test value reaches the value of 68,725 at the significance level sig = 0.000 < α = 0.1. Thus, we reject hypothesis H₀, accept hypothesis H₁, that is, 6 independent variable components Moral Responsibility, Knowledge, Attitude, Behavior, Income, Communication and Intention have each relationship. Therefore, the model fits the data set and can be generalized to the population.

Table 7: Results of multivariate regression model

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.	Collinearity Statistics	
		B	Std. Error	Beta	t		Tolerance	B
1	(Constant)	1.351	.363		3.727	.000		
	Knowledge	.080	.037	.095	2.164	.032	.858	1.165
	Attitude	.140	.037	.169	3.823	.000	.838	1.193
	Behavior	.197	.041	.225	4.844	.000	.757	1.321
	Communication	.285	.052	.266	5.514	.000	.704	1.420
	Income	-.319	.036	-.412	-8.927	.000	.770	1.299
	Moral Responsibility	.195	.047	.178	4.140	.000	.891	1.123

Source: Processing of the research team's investigation results

The table of regression results shows that, in addition to the regression coefficients of Income bearing negative signs, the regression coefficients of the factors Knowledge, Attitude, Behavior, Communication, Moral Responsibility all have positive signs and R = .822a > 0 (Table 5) shows that these components have a positive and negative impact on the intention to participate in health insurance. Thus, the hypothesis of the research model is accepted that the components of knowledge, communication, attitude, behavior, and moral responsibility have a positive relationship with the intention to participate in health insurance on Ninh Binh province. Particularly, the income component has a negative impact on the intention to participate in health insurance.

Factors Affecting the Expansion of Voluntary Health Insurance Participants in Ninh Binh, Vietnam

The table of regression results also shows that the variance exaggeration factor $VIF < 2$, proves that we do not suffer from multicollinearity problem in this study.

V. DISCUSSING THE RESULTS

Assess the importance of factors affecting the intention to participate in health insurance in Ninh Binh province. From the results of the regression table (Table 8) allows us to test the regression coefficients in the model. Components with statistical significance less than 5% are kept, and components with statistical significance greater than 5% are discarded. The larger the beta coefficient of a component, the more important it is, showing the degree of influence on the dependent variable from the above table of regression analysis results, we can see that the constant is not statistically significant, so the constant does not affect the regression equation we mentioned above. The remaining 6 factors are suitable, of which 5 factors have a positive influence on intention and 1 factor has a negative effect. Specifically, the income component has the strongest influence first with a Beta coefficient of (-0.412) ($t = -8.927$ and $Sig < 0.05$), followed by the communication component with a Beta coefficient of 0.266. ($t = 5.514$ and $Sig < 0.05$) the second largest influence. Third is the behavioral component with a Beta coefficient of 0.225 ($t = 4.844$ and $Sig < 0.05$). The fourth component is moral responsibility with a Beta coefficient of 0.178 ($t = 4.140$ and $Sig < 0.05$). The fifth is the attitude component with a Beta coefficient of 0.169 ($t = 3.823$ and $Sig < 0.05$). Finally, the knowledge component with a Beta coefficient of 0.095 ($t = 2.164$ and $Sig < 0.05$) is also the component that has the lowest influence on the intention to participate in health insurance in Ninh Binh province.

So the regression equation for the standardized Beta coefficients is as follows:

Intention = - 0.412 Income + 0.266 Communication + 0.225 Attitude + 0.178 Moral Responsibility + 0.169 Behavior + 0.095 Knowledge

Although up to now, Ninh Binh province has achieved over 92% of the coverage target, but this result cannot be confirmed as sustainable, due to many objective and subjective reasons. In which, the expansion of participants in health insurance, especially voluntary health insurance, still faces many difficulties; awareness of health insurance policies of some employers is still limited, the situation of evasion of health insurance premiums has not been thoroughly resolved; The health system's ability to respond to and quality of health care for people is still inadequate, there is still overcrowding in hospitals, administrative procedures and prices for medical services are still high. convenience... affects service quality and patient benefits. In addition, the propaganda and dissemination of policies and laws on health insurance are not synchronized, a part of people and workers do not understand their rights and obligations when participating in insurance. medical. For Ninh Binh, the percentage of population living and working in agriculture and rural areas is quite high, especially in mountainous communes, coastal communes and self-employed workers, whose income is still low, not stability. The network of collection agents is still thin, has not yet reached villages and neighborhoods, most of them are part-timers who are not really effective, and are still passive in advocacy and object development. Many Party committees and authorities have not really intended to lead and direct the implementation of health insurance policies....

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