

Factors Affecting Intention to Purchase Commercial Health Insurance in Hanoi in the Context of COVID-19 Pandemic

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Abstract

In recent years, along with the economic achievements is the increasing awareness of commercial health insurance needs, especially in the context of the COVID-19 epidemic. Realizing that the demand is growing but being directly affected from the global disease, the research was carried out to identify factors affecting the intention to purchase commercial health insurance in Hanoi, one of the areas heavily suffering from the pandemic. By collecting 251 subjects in Hanoi as well as using both qualitative and quantitative research methods, the result has pointed out five main factors: (1) Attitude towards risk, (2) Subjective norms, (3) Perceived behavioral control, (4) Perception of products and services' quality of the insurance company and (5) Income. The analysis and conclusions are made in order to contribute useful recommendations along with documents to both regulators and insurance companies within Vietnam.

Keywords: Commercial health insurance, COVID-19 pandemic, intention to purchase

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1. Introduction:

Over the past 30 years, the rapid economic development and increase in the population entering the middle class have created many positive factors to the awareness of health protection. Furthermore, the unpredictable spread of the COVID-19 pandemic in Vietnam has further made people feel more deeply about their own health and financial risks. These things have become the driving forces for the State to promote the commercial health insurance purchase, as well as improved the quality of different types of commercial health insurance. From the above reasons, the research topic was conducted to delve into the ingredients affecting customers' intention to purchase commercial health insurance in Hanoi, one of the places heavily affected by the epidemic; then proposing appropriate recommendations and solutions to state management agencies and insurance businesses in order to improve the commercial health insurance purchasing intention in Hanoi during this severe pandemic.

2. Literature review:

2.1. Overview of previous studies:

There are numerous international studies about the factors affecting the intention to purchase insurance, from which many remarkable conclusions have been reached. Approaching the problem in a macro viewpoint, national wealth, inflation, interest rate and economic restructuring are recognized by Ensor (1999) [1], while Pauly (1986) [2] identified that income tax affects the insurance purchase among customers. From a microeconomic perspective, factors such as profile, company description, product variety and insurance complexity are highlighted by Berry (1995) [3] as important factors to the intention to consume insurance; while Ramamoorthy (2014) [4] focuses on the image and trust that insurance companies build to attract customers. In terms of demographic elements, whereas the education level and knowledge are highly appreciated by many researchers, Ramamoorthy (2014) [4] agrees that age, gender, marital status and income have certain influences on insurance purchasing demand. Additionally, social factors such as generational differences, living environment and family/parental impacts significantly contribute to the differences in consumer demand for insurance. Intention to purchase insurance is also determined by consumers' subjective factors, namely Wang et al., (2021) [5] highlighting the customer's risk aversion for health and finance.

In terms of behavioral psychology, Ajzen's Theory of Planned Behavior (TPB) (1991) [6] was developed based on its ancestor, The Theory of Rational Behavior (TRA) (Fishbein and Ajzen, 1975) [7]. This theory suggests that intention can be explained by attitude towards behavior (ATB), subjective norms (SN) and perceived behavioral control (PBC). The model is built as follow:

$$\text{INTENTION} = \alpha_1 + \beta_1 \text{ATB}_i + \beta_2 \text{SN}_i + \beta_3 \text{PBC}_i + \epsilon_i$$

In which, ATB, SN and PBC act as independent variables; intention is the dependent variable and also the central factor of the theory, determining how willing a person is to perform any behavior. Approaching the role of attitude (ATB), Memarista et al. (2018) [8] argue that the more positive the attitude towards purchasing insurance is, the stronger the intention to purchase insurance. Bauer (1960) [9], on the other hand, emphasizes risk acceptance

and risk reduction behavior, highlighting the importance of perceived future risk to consumers' attitudes. Regarding the subjective norms (SN), Ajzen (1991) [6] commented that they are affected by internal influences (including family and relatives) and external influences (such as friends, colleagues, society or word of mouth). About the perceived behavioral control (PBC), Ajzen (1991) [6] refers to the perceived control over the ease or difficulty of performing a behavior, as well as past experiences and predicted obstacles predicted. Moreover, internal control (including the necessary skills, ability to perform the behavior and confidence in one's own abilities) and external control (for example favorable or unfavorable conditions, external resources) was also found to have a profound impact on a customer's perceived behavioral control.

Vietnamese studies regarding the intention to purchase insurance (especially state health insurance and social insurance) are also carried out in various approaches. Nguyen Van Ngai and Nguyen Thi Cam Hong (2012) [10] indicate that two issues, which are adverse selection and moral hazard, affect consumers' intention to participate in voluntary health insurance. The research conducted by Chu Thi Thanh Loan and Nguyen Hong Ban (2013) [11], on the other hand, points out prices higher than income, families without sick people and poor service as the reasons leading to the decreasing demand of purchasing voluntary state health insurance in Ha Tinh province. Relating to demographic dynamics, while age, economic conditions, knowledge about insurance and attitudes about insurance policies are emphasized by many researchers, Nguyen Thi Phuong and Nguyen Thi Tuyet (2019) [12] focus on gender, education and living environment. On the other hand, Pham Dinh Khoi et al. (2019) [13] conclude that customers with higher age, education level as well as better living environment will tend to purchase state health insurance. In fact, people living in urban areas will be exposed to a variety of information, thus raising awareness of financial and health risk. Using behavioral psychology theories as premises, Nguyen Thanh Huyen et al. (2019) [14] apply the Unified Theory of Acceptance and Use of Technology (UTAUT) to analyze the consumer behavior. As a result, beliefs, expected performance, social influence and risk perception are determinants that strongly influence the state health insurance purchasing intention in Hanoi. Meanwhile, Hoang Thu Thuy and Bui Hoang Minh Thu (2018) [15] apply Ajzen's Theory of Planned Behavior (1991), therefore recognizing attitudes, subjective Norms (or family influences), and behavioral control as the three main variables affecting the need to participate in social insurance of Phu Yen people. Other factors such as propaganda about voluntary social insurance, perception of risks, participating procedures or legal responsibilities are also explored through the above document.

In conclusion, not only analyzing the problem from the macro, micro and demographic viewpoint, but the authors also explain customers' behavior under various theories such as The Unified Theory of Acceptance and Use of (UTAUT) or The Theory of Planned Behavior (TPB), thus reflecting the diversity and high significant level of the above works. However, realizing that not many Vietnamese studies have delved into the analysis of intention to purchase commercial health insurance, as well as not closely following the global pandemic situation, the research will focus on the factors affecting the intention to purchase commercial health insurance in Hanoi, one of the cities negatively affected by the epidemic, in the context of the COVID-19 pandemic.

2.2. Commercial health insurance:

The concept of insurance has been formed for a long time and the insurance industry has had a relatively long history of development, with the primary form of storing food in the winter or medicine for the injured. In the BC, funds for accidents were already established, and when trade began to boom, people started to mitigate risk of losses by transporting packages in multiple shipments. Commercial health insurance, similarly, was created with the primary purpose of ensuring the life and safety of its customers. Since the 1980s, insurance companies in Vietnam have begun to deploy commercial health insurance to meet people's needs, with the main products at that time such as personal life insurance, personal accident insurance and surgical benefit insurance. With the advancement of the Law on Insurance Business, commercial health insurance products started to be sold by many insurance enterprises and became popular in the late 2000s. Moreover, the economic growth and the appearance of new dangerous diseases (for example the COVID-19 virus) have made people more aware of protecting themselves and people around them from health and financial risks; thereby highlighting the need for commercial health insurance.

According to the Law No. 61/2010/QH12 amending and supplementing a number of articles of the Law on Insurance Business dated November 24, 2010 [16], "*Commercial health insurance is a type of commercial insurance in case the insured suffers from an injury, accident, illness, disease or health care, and it is paid by the insurance enterprise as agreed in the insurance contract*". Besides, commercial health insurance can be indicated that customers are both physically and mentally assured as well as supported in terms of medical expenses. In Vietnam, the cost of commercial health insurance is much higher than state health insurance, but when it comes to a number of outstanding benefits including financial support for participants, shortening the time for hospital referrals or helping to flexibly choose a medical facility, commercial health insurance products excel. About the types of commercial health insurance, The Law amending and supplementing a number of articles of the Law on Insurance Business No. 24/2000/QH10 promulgated by the National Assembly on November 24, 2010 [17]

classified commercial health insurance into 3 main categories: personal accident insurance, commercial medical insurance and health care insurance.

2.3. Intention to purchase:

In terms of definition, human behavioral intention is identified by many researchers, for instance Fishbein and Ajzen (1975, p.288) [7] argued that: “[...] Behavioral intention, therefore, refers to a person's subjective probability that he will perform a certain behavior”. Additionally, according to The Theory of Reasoned Action conducted by the above authors, two motivations including attitude towards behavior and subjective norms (or belief in norms) strongly affect people's behavioral intentions. Meanwhile, The Theory of Planned Behavior (Ajzen, 1991) [6] adds the Perceived behavioral control factor to the model, citing that non-motivational factors (e.g. availability of opportunities) and required resources (e.g. time, money, skills, cooperation of others) also contribute to the prediction of behavior. In Vietnam, many authors have also developed different behavioral intention research models, typically Nguyen Thi Mai Trang (2006) [18] claiming that the service quality affects customer loyalty, therefore making customers' purchasing intention stronger; or Tran Thi Thang (2015) [19] recognizing 4 demographic factors (gender, age, education and income) influencing the intention to buy high-end Barrisol stretch ceilings products. On the other hand, Ha Ngoc Thang (2016) [20] not only appreciates the elements in The Theory of Planned Behavior (including attitudes toward behavior, subjective norms and perceived behavioral control), but also adds perceived risk to the research model. Nguyen Thanh Nam (2017) [21] concludes that customers' intention will be affected by attitude towards risk, past experiences, subjective norms, culture and social concept, brand image, motivation, perceptions of goods and perceptions of the economy.

2.4. Framework and hypotheses:

Based on the previous works, the factors affecting the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic (INT) are 4 demographic factors (gender, age, education, income), along with other factors including attitude towards risk (ATR), subjective norms (SN), perceived behavioral control (PBC), past experience (PE) and perception of products and services' quality of the insurance company (PER). From here, the proposed research model is shown in the figure below:

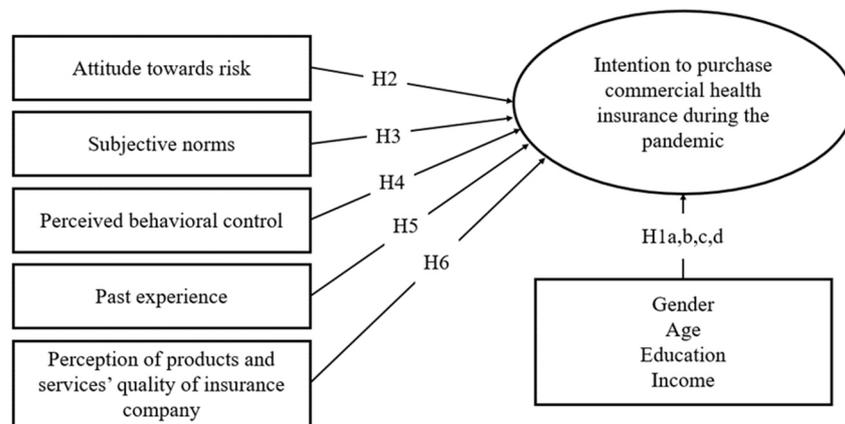


Figure 1: Framework of factors affecting intention to purchase commercial health insurance in Hanoi in the context of COVID-19 pandemic

Source: Proposal of the authors

In which:

(1) Gender, age, education level and income are 4 demographic factors recognized by Tran Thi Thang (2015) [19] as relevant and significant to customers' behavioral intentions. Moreover, since the different levels of the above factors cause the difference in customers' commercial health insurance intention, the hypothesis is put forward as follow:

H1a: There is a difference in the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic among different genders.

H1b: There is a difference in the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic in different age groups.

H1c: There is a difference in the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic at different educational levels.

H1d: There is a difference in the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic in different income groups.

(2) Attitude towards risk has been shown to have a positive effect on behavioral intention by authors such as

Brahmana et al. (2018b) [22] or Nguyen Thanh Nam (2017) [21]. Especially in the context of the COVID-19 epidemic, the attitude to avoid health and financial risks related to the epidemic will further boost consumers' demand for commercial health insurance (Chan et al., 2020 [23], Wang et al., 2020 [5]). Hence, the hypothesis put forward is:

H2: Attitude towards risks positively affects the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

(3) Subjective norms is determined to significantly impact consumers' intention to purchase commercial health insurance, according to the Theory of Reasoned Action and Theory of Planned Behavior. In addition, according to Nguyen Thuong Thai (2006) [24], if the opinion of the referential group (e.g. family, friends, colleagues, etc.) is positive, the behavioral intention will be stronger. As a result, the hypothesis is come up with as follow:

H3: Subjective norms positively affect the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

(4) Perceived behavioral control is believed to be heavily influential to customers' commercial health insurance purchasing intention, based on Ajzen's Theory of Planned Behavior (1991) [6]. Moreover, Vietnamese studies such as Tran Thi Thang, 2015 [19], Ha Ngoc Thang, 2016 [20] have all stated that the more positive this factor is, the more powerful the intention will be. Consequently, the hypothesis is as follow:

H4: Perceived behavioral control positively affects the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

(5) Past experience has a major impact on the general behavioral intention of customers, according to Høie et al. (2010) [25] and Nguyen Thanh Nam (2017) [21]. Moreover, some opinions of the participants in the research's in-depth interview also agreed that this element has a positive influence on their purchasing intention of commercial health insurance; Therefore, the hypothesis is realized as follow:

H5: Past experience positively affects the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

(6) Perception of products and services' quality of the insurance company is a newly discovered factor in recent years, but many documents from researchers (e.g. Nguyen Thi Mai Trang (2006) [18]) has confirmed the importance of this variable to the general purchasing intention. In terms of commercial health insurance, when customers have positive perceptions of the insurance companies' quality, their intention to purchase commercial health insurance may become stronger. So the hypothesis is presented as follow:

H6: Perception of products and services' quality of the insurance company positively affects the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

3. Methodology:

The study uses both qualitative approach (in-depth interview) and quantitative approaches (questionnaire) to gather information and data. The research process is displayed briefly as follow:

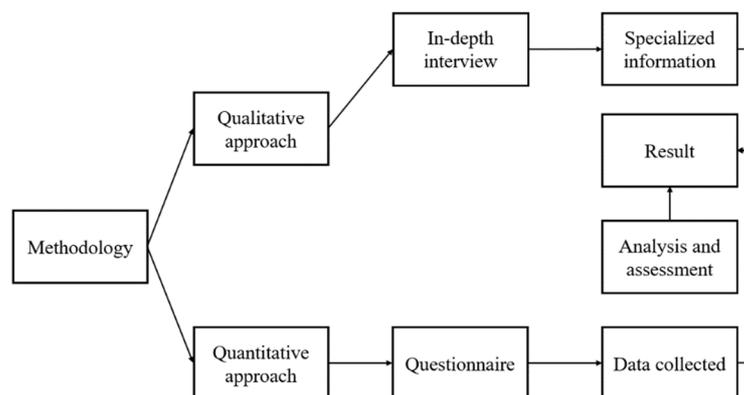


Figure 2: Research framework

Source: Proposal of the authors

3.1. Quantitative approach:

Regarding the quantitative approach, online questionnaire was designed based on Likert scale from “1 – Absolutely disagree” to “5 – Absolutely agree”, which aim at evaluating the levels of respondents' agreement. 264 people living in Hanoi are chosen to answers the questions in the questionnaire, including those currently using, have been using and have never been using commercial health insurance products; then collect 251 valid answers,

reflecting more than 95% of the respondents.

3.2. Qualitative approach:

Alongside with the quantitative approach, face-to-face surveys had also been executed in different phases with the purpose of carrying out insights about commercial health insurance purchasing intention during the pandemic. In phase 1, 15 people living in Hanoi were interviewed regardless of their insurance purchasing status, thus giving opinions about factors affecting the intention to buy commercial health insurance. After phase 1 was completed, to assure that there is no bias, in-depth interviews (phase 2) with experts in the insurance field was also carried out. The answers given by experts would provide specific views and details about the commercial health insurance market in Vietnam, as well as insights about customers' purchasing intention during the pandemic. The questions in the in-depth interviews were designed with similar construction as the questionnaire but more specific in order to assemble various answers.

4. Results and discussion:

4.1. Demographic information:

Table 1: Demographic information of respondents

| | | Frequency | Percent |
|---------------|------------------------------|-----------|---------|
| Gender | Male | 114 | 45.4 |
| | Female | 137 | 54.6 |
| | Total | 251 | 100 |
| Age | Under 25 | 79 | 31.5 |
| | Above 55 | 14 | 5.6 |
| | 26 – 30 | 40 | 15.9 |
| | 31 – 40 | 53 | 21.1 |
| | 41 – 55 | 65 | 25.9 |
| | Total | 251 | 100 |
| | Education | Graduate | 140 |
| Postgraduate | | 76 | 30.3 |
| High school | | 24 | 9.6 |
| Intermediate | | 11 | 4.4 |
| Total | | 251 | 100 |
| Income | Under 10 million dong | 64 | 25.5 |
| | Above 50 million dong | 21 | 8.4 |
| | 10 million – 20 million dong | 77 | 30.7 |
| | 20 million – 30 million dong | 47 | 18.7 |
| | 30 million – 40 million dong | 23 | 9.2 |
| | 40 million – 50 million dong | 19 | 7.6 |
| | Total | 251 | 100 |

Source: compiled from analysis result of authors

Firstly, the demographic characteristics of the research sample determine that the percentage of women is 54.6%, higher than that of men (45.4%). Respondents who are under the age of 25 account for 31.5%, corresponding the most significant rate of age; while those with an educational level of college/university occupy more than half of the answers (55.8%). Lastly, respondents with an income between 10 and 20 million dong reflect 30.7%.

4.2. Reliability statistics and exploratory factor analysis:

The scale of factors affecting the intention to purchase commercial health insurance of Hanoi in the context of the COVID-19 is considered based on the Cronbach's Alpha reliability test to eliminate junk variables, avoiding the case of junk variables creating false results. According to Table 2, the reliability statistics of the observable variables are all over 0.7, and the reliability numbers when deleting observable variables are all smaller than those not deleted. This shows that the scale is suitable and there are no junk variables in the model.

Table 2: Reliability statistics

| Reliability statistics for independent variables | | |
|---|---|-------------------|
| | Cronbach's Alpha | N of items |
| ATR | 0.870 | 5 |
| SN | 0.871 | 6 |
| PBC | 0.789 | 5 |
| PE | 0.919 | 4 |
| PER | 0.939 | 5 |
| INT | 0.907 | 5 |
| Reliability statistics for observable variables | | |
| | Cronbach's Alpha if Item deleted | |
| ATR1 | 0.857 | |
| ATR2 | 0.832 | |
| ATR3 | 0.851 | |
| ATR4 | 0.837 | |
| ATR5 | 0.832 | |
| SN1 | 0.863 | |
| SN2 | 0.852 | |
| SN3 | 0.868 | |
| SN4 | 0.842 | |
| SN5 | 0.833 | |
| SN6 | 0.837 | |
| PBC1 | 0.736 | |
| PBC2 | 0.763 | |
| PBC3 | 0.743 | |
| PBC4 | 0.753 | |
| PBC5 | 0.752 | |
| PE1 | 0.888 | |
| PE2 | 0.911 | |
| PE3 | 0.883 | |
| PE4 | 0.898 | |
| PER1 | 0.923 | |
| PER2 | 0.925 | |
| PER3 | 0.926 | |
| PER4 | 0.926 | |
| PER5 | 0.923 | |
| INT1 | 0.877 | |
| INT2 | 0.878 | |
| INT3 | 0.903 | |
| INT4 | 0.885 | |
| INT5 | 0.879 | |

Source: compiled from analysis result of authors

The EFA (Exploratory factor analysis) method is performed by considering the KMO and Bartlett test's results, the total variance explained and the rotation matrix which groups the factors. With a KMO's coefficient of 0.907 as well as Sig. level less than 5%, it can be concluded that the observable variables are correlated with each other, and the data used for factor analysis is completely appropriate. Additionally, the total Eigenvalues are greater than 1 and the cumulative percentage is over 50%, which means that the observable variables can explain the variability of the data relatively well (Nguyen Dinh Tho, 2011 [26]). Considering the rotation matrix results, the rotation matrix table is shown as follows:

Table 3: Rotation matrix

| Observable variables | Component | | | | | |
|----------------------|-----------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| PE3 | 0.854 | | | | | |
| PER3 | 0.854 | | | | | |
| PER1 | 0.849 | | | | | |
| PER2 | 0.830 | | | | | |
| PER4 | 0.825 | | | | | |
| PER5 | 0.824 | | | | | |
| PE4 | 0.811 | | | | | |
| PE1 | 0.789 | | | | | |
| PE2 | 0.756 | | | | | |
| SN6 | | 0.801 | | | | |
| SN5 | | 0.789 | | | | |
| SN4 | | 0.668 | | | | |
| SN2 | | 0.592 | | | | |
| SN1 | | 0.550 | | | | |
| SN3 | | 0.543 | | | | |
| ATR2 | | | 0.848 | | | |
| ATR5 | | | 0.805 | | | |
| ATR4 | | | 0.787 | | | |
| ATR1 | | | 0.707 | | | |
| ATR3 | | | 0.685 | | | |
| PBC3 | | | | 0.753 | | |
| PBC2 | | | | 0.751 | | |
| PBC1 | | | | 0.637 | | |
| PBC4 | | | | | 0.870 | |
| PBC5 | | | | | 0.866 | |
| INT1 | | | | | | 0.888 |
| INT5 | | | | | | 0.883 |
| INT2 | | | | | | 0.870 |
| INT4 | | | | | | 0.869 |
| INT3 | | | | | | 0.772 |

Source: compiled from analysis result of authors

Based on the grouping results from Table 3, the independent variables are rearranged as follows: Independent variable X1 (PE1 to PE4, PER1 to PER5) representing the perception of products and services' quality of insurance company, due to the fact that customers' perception are usually based on their experiences in the past. X2 (SN1 to SN6) represent subjective norms and X3 (ATR1 to ATR5) reflect attitude towards risk. X4 (PBC1 to PBC3) accounting for perceived behavioral control and X5 (PBC4, PBC5) representing perceived behavioral control when the pandemic occurs, because perceived control may change before and after the epidemic. Therefore, the new hypothesis is come up with as follow:

H2a: Perception of products and services' quality of insurance company positively affects the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

H3a: Subjective norms positively affect the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

H4a: Attitude towards risk positively affects the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

H5a: Perceived behavioral control positively affects the intention to purchase commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

H6a: Perceived behavioral control when the pandemic occurs positively affects the intention to purchase

commercial health insurance in Hanoi in the context of the COVID-19 pandemic.

Table 4: Pearson correlation among variables:

| | INT | X1 | X2 | X3 | X4 | X5 |
|-----|---------|---------|---------|---------|---------|----|
| INT | 1 | | | | | |
| X1 | 0.616** | 1 | | | | |
| X2 | 0.666** | 0.557** | 1 | | | |
| X3 | 0.437** | 0.316** | 0.417** | 1 | | |
| X4 | 0.658** | 0.482** | 0.536** | 0.411** | 1 | |
| X5 | 0.411** | 0.338** | 0.412** | 0.250** | 0.405** | 1 |

Sig. = 0.000, N = 251

Source: compiled from analysis result of authors

Regarding the correlations among variables, with the Sig. level are all less than 5% as well as the Pearson's correlation coefficient are relatively high, it can be concluded that all variables have strong positive correlations with each other.

4.3. The linear regression result:

The linear regression analysis between the factors and the intention to purchase commercial health insurance in Hanoi in the context of the epidemic was performed twice. In the first time, the variable perceived behavioral control when the pandemic occurs is excluded from the model due to the Sig. level exceeded 5% (0.24), leading to the rejection of hypothesis H6a. In the second time, outstanding results are obtained including: the adjusted R-squared coefficient is 0.615; Durbin-Watson coefficient of 1.846 (in the range of 1-3, which is acceptable), indicating that the 4 independent variables in the model explained 61.5% for the variability of the dependent variable, as well as there is no autocorrelation in the model. Moreover, the ANOVA results explained that F is 100,784 with the significance level is 0.000, which proves that all independent variables are significant, even after removing the variable perceived behavioral control when the pandemic occurs. Additionally, the results of the linear regression model are shown in Table 5 as follows:

Table 5: Summary of the linear regression results

| Model | Unstandardized coefficients | | Standardized coefficients | t | Sig. | Collinearity Statistics | |
|--------------|-----------------------------|------------|---------------------------|-------|-------|-------------------------|-------|
| | Beta | Std. Error | Beta | | | Tolerance | VIF |
| 1 (Constant) | 0.056 | 0.183 | | 0.304 | 0.761 | | |
| X1 | 0.256 | 0.049 | 0.256 | 5.223 | 0.000 | 0.641 | 1.559 |
| X2 | 0.293 | 0.049 | 0.308 | 5.914 | 0.000 | 0.568 | 1.759 |
| X3 | 0.094 | 0.046 | 0.091 | 2.047 | 0.042 | 0.774 | 1.291 |
| X4 | 0.311 | 0.046 | 0.332 | 6.712 | 0.000 | 0.631 | 1.586 |

Adjusted R² = 0.615 F = 100.784 Sig. = 0.000

Source: compiled from analysis result of authors

It can be seen that the tolerance is low and the VIF value is less than 2, which proves that there is no multicollinearity phenomenon and there is no extreme correlation among the independent variables (Hair et al., 2006). In addition, the significance level of all variables is less than 5%, showing that all factors are suitable and can be retained in the model. Based on the standardized coefficients, the positive effect on the dependent variable from high to low is: Perceived behavioral control ($\beta = 0.332$), subjective norms ($\beta = 0.308$), perception of products and services' quality of insurance company ($\beta = 0.256$), and attitude towards risk ($\beta = 0.091$). As a result, the hypotheses H2a, H3a, H4a and H5a are accepted.

4.4. Analysis on the coefficients and ANOVA of demographic factors:

In order to determine which demographic elements result in the difference in the commercial health insurance purchasing intention during the epidemic, the independent sample T-test is considered. The results related to the Sig. level and the Levene Test are shown as follows:

Table 6: Results of coefficients and one-way ANOVA for demographic variables

| | | Levene Statistics | df1 | df2 | Sig. |
|------------------|--|-------------------|-----|-----|-------|
| Gender | | 1.297 | 4 | 246 | 0.272 |
| Age | | 1.297 | 4 | 246 | 0.272 |
| Education | | 0.454 | 3 | 247 | 0.714 |
| Income | | 0.994 | 5 | 245 | 0.422 |

| | | Sum of square | df | Mean Square | F | Sig. |
|------------------|----------------|---------------|-----|-------------|-------|-------|
| Gender | Between groups | 0.007 | 1 | 0.007 | 0.012 | 0.914 |
| | Within groups | 144.922 | 249 | 0.582 | | |
| | Total | 144.928 | 250 | | | |
| Age | Between groups | 1.946 | 4 | 0.487 | 0.837 | 0.503 |
| | Within groups | 142.982 | 246 | 0.581 | | |
| | Total | 144.928 | 250 | | | |
| Education | Between groups | 0.429 | 3 | 0.143 | 0.244 | 0.865 |
| | Within groups | 144.5 | 247 | 0.585 | | |
| | Total | 144.928 | 250 | | | |
| Income | Between groups | 8.938 | 5 | 1.788 | 3.221 | 0.008 |
| | Within groups | 135.99 | 245 | 0.555 | | |
| | Total | 144.928 | 250 | | | |

Source: compiled from analysis result of authors

With the Sig. levels of all demographic factors' coefficients exceed 5%, the variances of the variables are identical. Considering the one-way ANOVA result, despite most factors' significant levels being greater than 5%, the Sig. level of income is less than 5% (0.008), proving that there is a difference in the commercial health insurance purchasing intention in Hanoi in the context of COVID-19 epidemic at different income groups. Thus, hypothesis H1a, H1b, H1c are rejected; H1d is accepted.

4.5. Summary:

Based on the discussion above, the research summarizes main factors positively influencing the intention to purchase commercial health insurance in Hanoi during the COVID-19 pandemic are Attitude towards risk, Subjective norms, Perceived behavioral control, Perception of products and services' quality of insurance company and Income. As a result, the final research framework is come up with as follow:

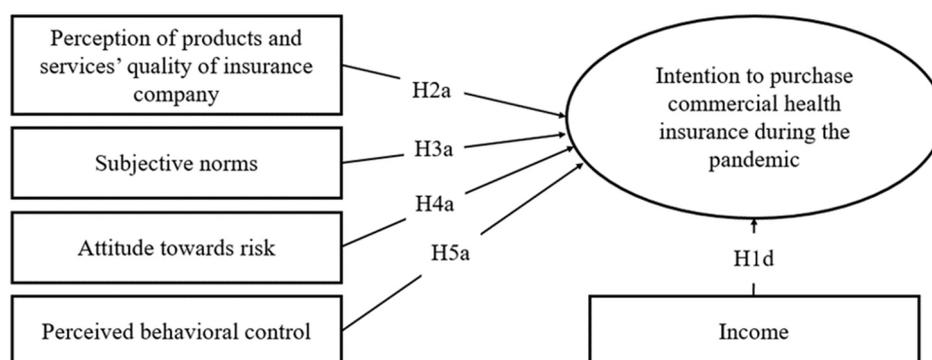


Figure 3: Final framework of factors affecting intention to purchase commercial health insurance in Hanoi in the context of COVID-19 pandemic

Source: compiled from analysis result of authors

5. Recommendations and solutions:

Realizing the factors having positive impacts on the intention to purchase commercial health insurance in Hanoi during the epidemic, a number of recommendations for regulatory agencies and solutions for insurance businesses are provided specifically as follows:

Firstly, for The Ministry of Finance and The Insurance Supervision and Administration Department, it is necessary to coordinate with relevant ministries and departments to come up with guiding documents relating the inspecting and examining procedure to help increase transparency, completeness of information about commercial health insurance; severely sanction individuals and organizations if there are any signs of unethical business behaviors such as providing poor quality products or services to the market; improve the quality of human resources for insurance, apply the concept of family medicine in commercial health insurance products based on the Resolution No. 20-NQ/TW dated October 25, 2017, the Sixth Conference of the 12th Central Committee of the Communist Party of Vietnam on strengthening protection of people's health in the new normal era [18]. Additionally, coordinate with local authorities, socio-political organizations such as Women's Union, Farmers' Union, War Veterans' Association, Youth Union, etc. in order to implement projects and programs on raising awareness of households and communities in Hanoi about health care during the pandemic.

Secondly, about The Vietnam Insurance Association, closely coordinate with state management agencies in completing the Law on Insurance Business, especially in terms of ensuring information's transparency as well as guaranteeing insurance products and services' quality. Improve the propaganda on commercial health insurance through diverse channels (e.g. social network, television, newspapers and radio); support insurance businesses to work on the risk management and customers' compensating process by upgrading the IT infrastructure, building a database for the insurance market in order to minimize risks. Effectively connect the regulators and insurance enterprises in the market; help enterprises access advanced new sales methods and technologies to meet customers' needs and adapt the epidemic situation. Moreover, encourage insurance companies to improve the quality of human resources regarding expertise, management along with business ethics in the form of professional programs or seminars, thus raising consumers' awareness of commercial health insurance products and services.

Thirdly, for insurance businesses, it is vital to improve the data management, increase the transparency of insurance terms in order to ensure customers' benefits and the ease of finding information about commercial health insurance; offer diverse products and services with tempting prices, suitable to the needs and financial capabilities of different classes of customers, especially when the epidemic has negatively affected individuals' income. Furthermore, provide new commercial health insurance products (e.g. post-COVID-19 healthcare packages for patients) as well as continue to promote effective distribution channels (e.g., insurance agents and insurance sales employees); creating network with hospitals and insurance providers, apply advanced technology in various ways such as using chip-based electronic health insurance book to better control customers' information or using Chatbot technology to interact with customers, etc.). Concentrate on reaching customers' social networks by encouraging them to introduce commercial health insurance to those around them and applying preferential policies (e.g. giving gifts, organizing seminars, events or promotions, etc.) for individuals and organizations purchasing or continuing to purchase insurance products; diversify and upgrade products and services towards health protection for groups of customers (such as family, group of friends, companies, etc.); utilize the influence of influencers, celebrities and especially word of mouth to cut down the marketing costs and dramatically improve consumers' subjective norms for commercial health insurance. In terms of improving the quality of human resources, insurance companies should apply international standardized training programs, ensure that not only are insurance employees are proficient in expertise and knowledge, but they are also ethical. In order to minimize risks, firstly enterprises need to strictly manage retail agency channels, avoid letting these channels perform unethical behaviors that reduce service quality of businesses; develop new commercial health insurance products and services to help customers manage risks arising from the epidemic (e.g. products and services for post-COVID-19 medical treatment); strengthen the customer supporting process (e.g. promoting online consulting service and 24/7 medical support), leading to a more positive attitude about commercial health insurance.

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