FACTORS AFFECTING THE PURCHASE OF VOLUNTARY AUTOMOBILE INSURANCE

by LÊ VĂN HUY* & LÊ THỊ HƯƠNG GIANG**

1. Introduction

In recent years, with the stable economic growth and the living standard being more and more improved, there has arisen an increasing need for automobiles. Many families have a desire to possess autos as the means of transport. However, the development of traffic infrastructures could not keep pace with increases in the quantity of cars. Unsafe means of transportation and drivers who do not abide by the applicable traffic law all have brought in the high risk of unexpected traffic accidents. Thus, it is in the urgent need to work out a useful method to protect traffic participants (hereunder referred to as "drivers") against losses incurred as a result of traffic accidents

In a modern society, insurance may be deemed as the best tool to prevent risks that man may face. In recent years, the Ministry of Finance has granted license to many new non-life insurance companies, increasing the total number of general insurers in Vietnam up to 27. As a result, voluntary automobile insurance models have been launched with many diverse and tempting options. Based on theories relating to car insurance in the context of Vietnam in general and in Nha Trang City in particular, this paper is to present analyses and measures to develop the voluntary automobile insurance market healthily in favor of both insurers and their customers.

2. Theoretical framework and research model

By studying theories by foreign authors and the context of Vietnam, the paper is to propose some concepts for the research model.

a. Awareness of risks occurring as a result of road accidents:

Awareness of risks maybe occurring as a result of road accidents is to subjectively evaluate a negative event related to driving (Lund and Rundmo, 2009). It is considered as a factor in making a sensible decision because people tend not to take daily risks seriously such as distractions, driving smoking or answering the phone (Lennart, Moen and Rundmo, 2004). Age and educational level also affect drivers' awareness of potential risks (Lund and Rundmo, 2009; Vered Rafaely, 2006; Horgn and Chang, 2007). Besides the state of traffic roads and the frequency of occurring risks as a result of road accidents, awareness of risk is a causal variable which plays a great part in forming intention (Lund and Rundmo, 2009; Vered Rafaraely, 2006; Horgn and Chang, 2007).

b. Age of drivers, state of traffic roads, and frequency of having risks:

According to Lund and Rundmo (2009), Vered Rafaely (2006), Horgn and Chang (2007), age affects driver's awareness of risks. Many studies have shown that the older the drivers are, the more aware of risk they are. Moreover, the state of traffic road on which the driver frequently moves to and fro everyday is also an important

* Đà Nẵng University of Economics
** BIDV Insurance Company

factor affecting risk awareness. If the road is in good condition, the number of traffic accidents will be reduced. Accordingly, there will be little awareness of risks. Vice versa, the driver will be more aware of risks. For the frequency of having risks, those who have frequently had traffic accidents would have better awareness of risks than those rarely do.

- Attitude

Attitude represents the positive or negative belief of people and the assessment of one's behavior. It signifies the assessment of the consequences caused by a behavior (Ajzen 1991). In this paper, attitude shows the thoughts and feelings of consumers about voluntary automobile insurance. A positive attitudes towards insurance in general and the benefit of car insurance in particular would affect positively the purchase of voluntary car insurance (Lennart, Moen and Rundmo, 2004). Attitude may be measured via the necessity of buying vehicle insurance, the rationality of purchase of vehicle insurance in the current social context, and the belief in an automobile insurer.

- Social influence

Social influence is the general pressure of society that makes people perform an act or not (Ajzen 1991). Agents who influence the buying intention of the consumer depend on two things, i.e. how strong the positive or negative attitude towards the acquisition of vehicle insurance is, and now the purchase motive is steered by the agents (Fisbein and Ajzen 1975). In a modern society where more and more people are in need of acquiring insurance, individual behaviors towards the purchase of insurance tend to be influenced by surrounding people like kith and kin, colleagues, competent authorities, etc. (Nakata and Essex 2007). Social influences help car owners to have a positive intention of buying voluntary automobile insurance.

- Knowledge of voluntary automobile insurance

As Hayakawa (2000) put it, knowledge of insurance is the understanding about different packages of insurance and the way to use it in case losses occur. In Vietnam, as fueled by the tiger economy, more and more people are aware of the necessity of insurance in order to reduce damages should risks happen. However, the knowledge of voluntary automobile insurance is still limited, affecting the intention of buying insurance. Thus, in order to facilitate the purchase of insurance, it is necessary to enhance the knowledge of voluntary insurance such as the benefits of insurance, the scope of insurance, the procedure of insurance claims, as well as terms and conditions of a voluntary car insurance policy.

- Income

Income has a positive influence on the acquisition of voluntary insurance. The higher the income is, the higher the need for acquisition of insurance is (Horgn and Chang 2007). With a high income, basic necessities are met sufficiently, and thus they tend to resort to the need for safety and security. They are willing to participate in a voluntary insurance model with a view to reducing human and material potential risks.

- Car value

The car value is its real value estimated at the

time of joining insurance. When the economy is more and more developed, car ownership is no longer something out of the reach of some people, especially those with high income. However, in Vietnam, in addition to mishaps caused by natural catastrophes and the poor traffic network, the risk of having crashes is very high. Even though how carefully a driver steers the car, he or she may meet an accidents caused by another careless driver. Usually, those owning a luxury car always wish to be granted with a vehicle insurance policy. In reality, once they are willing to spend a fortune to own a luxury car, it does not matter for them to acquire a voluntary automobile insurance. The point is they must be granted with necessary information and directives so as to buy a voluntary insurance.

- Purchasing procedure

The procedure of insurance acquisition also affects the purchase of voluntary automobile insurance. The simpler the procedure is, the quicker the purchase of vehicle insurance is. Vice versa, customers' interest in the voluntary insurance may be plunged.

- Price-sensitivity

Prices play an important role in marketing and customers are often influenced mainly by prices when buying things. They consider price as the indicator of the product/service quality. However, the effect of price is not always the same. Sometimes, price may lessen the value of the product because it does not correspond to the quality (Nguyễn Đình Thọ and Nguyễn Thị Mai Trang, 2008). Usually, insurers shall supply different packages of insurance at service of price-sensitive customers.

- Intention to purchase insurance

Purchasing intention shows the state of buying or not buying a product within a certain period of time and is molded in mind prior to acquisition (Ajzen 1991). Therefore, it is the best forecaster for the acquisition. Thus, examining the intention of purchasing voluntary automobile insurance would help us to know whether the consumer would join the insurance or not.

- Decision to purchase insurance

Before deciding to buy a product, he or she must have the intention of using it. The intention could be formed before or right after they decide to use. These two factors are always affected by the factors of environment and behavior (Giới and Huy, 2006). Therefore, the decision to purchase voluntary automobile insurance shows that the decision-maker has used, is using, and will be using automobile in the next three, six and nine months or a year to come.

- Research methodology and findings

Based on theories from previous researches and interviews with five customers, four insurance tellers and two auto insurance dealers; the author has set up latent variables and observed variables for establishment of questionnaires and a research model.

Table1: Concepts, scales, and signs employed within the research model

Variables	*Scales*	*Signs*
Age	Ratio	TUOI
Traffic environment	Five-point Likert	MTRUONG
Frequency of having risk	Ratio	TSUAT
Risk awareness	Five-point Likert	NTHUC
Attitude	Five-point Likert	THAIDO
Social influence	Five-point Likert	AHUONG
Knowledge of insurance	Five-point Likert	HIEUBIET
Income	Ratio	TNHAP
Automobile value	Ratio	GTRI
Purchasing procedure	Five-point Likert	TTUC
Price-sensitivity	Five-point Likert	GIACN
Intention to purchase insurance	Five-point Likert	YDINH
Decision to purchase insurance	Distance	QDINH

This research was carried out in Nha Trang City. Four hundred questionnaires have been given out and 318 proper ones are collected in return. Most of respondents are male car owners in the 22-69 age group.

Table 2: Demographical features of respondents

Features	Quantity	(%)
Age group		
20 – 30	57	40.7
30 – 40	152	27.7
40 – 50	87	12
50 – 60	17	10.1
60 – 70	5	9.5
Automobile age		
1 - 3	132	42.3
3 – 5	67	21.5
> 5	113	36.2

In term of career, most of the interviewees are office staff and businesspersons. The number of interviewees with university level is 125, accounting for 39.3%; those with vocational and college level accounting for 24.2%, and with high school level being 28.9%. As for monthly income, those with income under VND10-million account for 75.5%, and those over 10 million being 24.5%. Around 132 automobiles are 1-3 years old, making up 41.5%; some 67 cars are 3-5 years old (21.1%); and about 113 cars are over 5 years old (35.5%).

In EFA analysis by means of principal component analysis and varimax rotation for variables of perception, attitude, social influence and knowledge, the analytical results show that the item HIEUBIET1 has the factor loading coefficient smaller than 0.5 and thus is left out (Hair et al. 2009). Then, the re-run of factor analysis has produced the KMO of 0.835 with the significance of 0.000, smaller than 0.05. In the Table 3, there exist four components. The rotation matrix shows the relation between items and main components as follows:

Table 3: Component matrix after varimax rotation

Items	Components			
	1	2	3	4
NTHUC1		0.849		
NTHUC2		0.846		
NTHUC3			0.507	
NTHUC4			0.843	
NTHUC5			0.834	
THAIDO1	0.788			
THAIDO2	0.809			
THAIDO3	0.639			
AHUONG1	0.826			
AHUONG2	0.85			
AHUONG3	0.688			
HBIET2				0.65
HBIET3				0.767
HBIET4				0.778
Eigenvalues	5.472	1.877	1.332	1.054

Via the EFA analysis, the concepts "attitude" and "influence" may be combined into "attitude and influence" and signed as THAIDO&ANHHUONG; the concept "awareness" is divided into two parts, i.e. "awareness of the infrastructure" (NHANTHUCCSHT) and "awareness of the consciousness of traffic participants" (NHANTHUCYT). The concept "knowledge" consists of four observed variables and the variable "HIEUBIET1" with the value smaller than 0.5 is omitted, either. The Cronbach Alpha values of new-formed variables are all bigger than 0.7. For the variables of the concepts "intention" with the Cronbach Alpha of 0.78, the reliability of content may be assured. Results of the CFA for each concept also confirm the convergent validity ($\lambda_i \geq 0.5$), discrim-

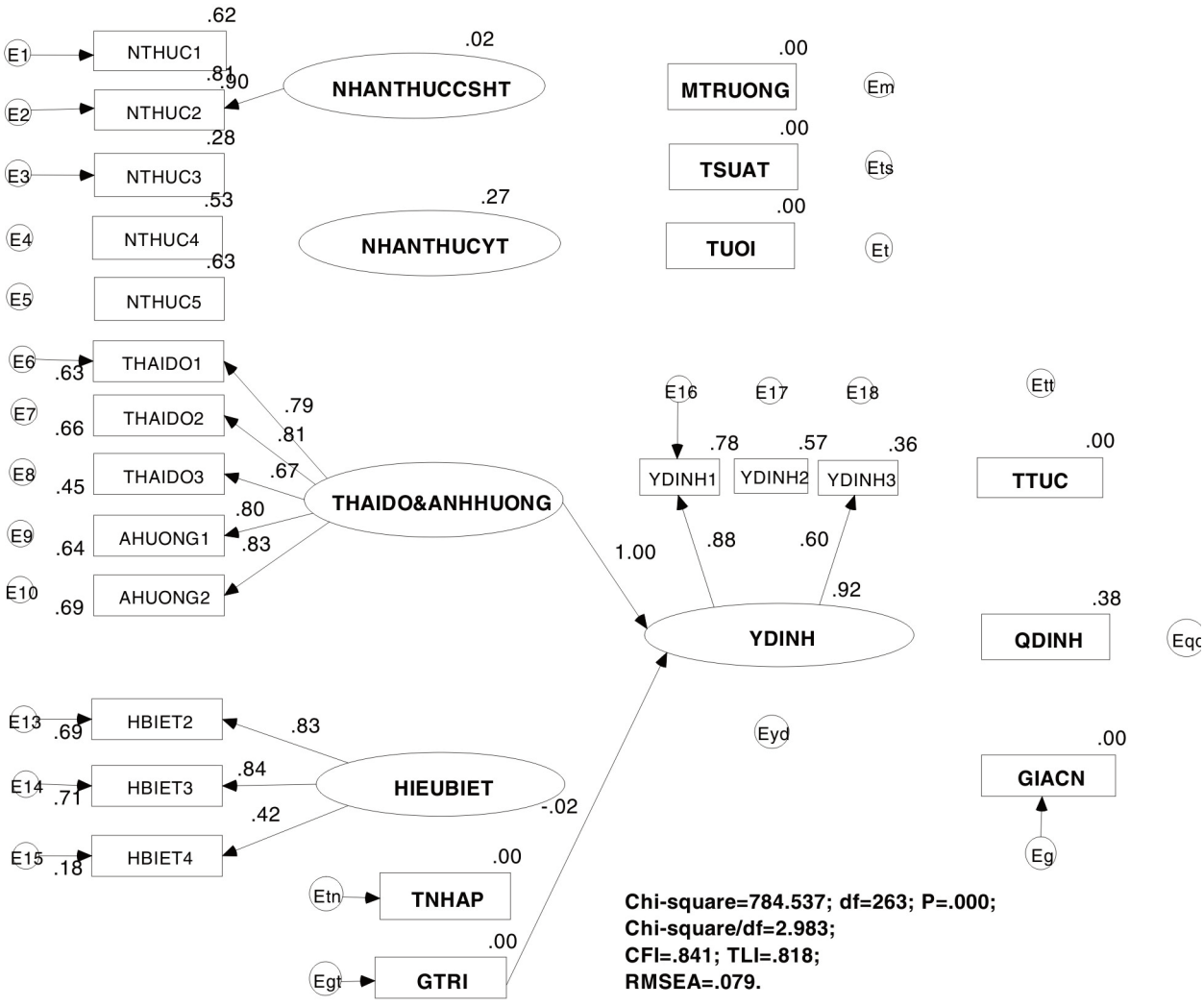

Figure 1: Structural equation modeling (SEM)

inant validity and unidimensionality of the scale.

SEM is used to analyze the relation between concepts in the model (Figure 1). Factors such as awareness of infrastructures, awareness of consciousness of traffic participants, attitude and influence, knowledge, income and price have impacts on the intention and decision of purchasing insurance. These factors would be affected by intention, procedure, and price-sensitivity. The SEM analysis also shows that the model comprises 263 degrees of freedom, the Chi-square of 784.537, p-value equaling 0.000, Chi-square per degree of freedom equaling 2.983 smaller than 3. Hence, we can confirm that the model tallies with market data, i.e. GFI=0.885, TLI=0.855 and CFI=0.876 are acceptable (RMSEA=0.079). The relation between variables in the model is as follows:

Because the number of samples (318 samples) is not enough for SEM analysis, the bootstrapping method with N equaling 1000 will be employed instead so as to estimate the hypothesis tests. The estimated results of bootstrapping set forth in Table 5 show that almost deviations are not significant statistically. Therefore, we can conclude that estimates in the model are acceptable.

The factors "attitude and social influence", "awareness of the consciousness of traffic partici-

Table 4: Relation between variables in the model

Connection between variables			Estimate	S.E.	C.R.	P
YDINH	<---	THAIDO&ANHHUONG	1.101	0.074	14.778	0.000
YDINH	<---	HIEUBIET	-0.127	0.059	-2.152	0.031
YDINH	<---	NHANTHUCYT	0.285	0.088	3.241	0.001
QDINH	<---	GIACN	-0.394	0.06	-6.524	0.000
QDINH	<---	YDINH	0.410	0.052	7.93	0.000
QDINH	<---	TTUC	0.314	0.036	8.71	0.000

Table 5: Results of bootstrapping with N = 1000

Relation of variables			MLE		Bootstrap				
			Est.	S.E.	SE	SE-SE	Mean	Bias	SE-Bias
NHANTHUCC-SHT	<---	MTRUONG	0.094	0.053	0.066	0.001	0.103	-0.006	0.002
NHANTHUCC-SHT	<---	TUOI	-0.005	0.006	0.061	0.001	-0.041	0.002	0.002
NHANTHUCC-SHT	<---	TSUAT	0.074	0.044	0.075	0.002	0.103	0.000	0.002
NHANTHUCYT	<---	TSUAT	-0.018	0.027	0.067	0.001	-0.041	-0.002	0.002
NHANTHUCYT	<---	MTRUONG	0.01	0.032	0.075	0.002	0.023	0.005	0.002
NHANTHUCYT	<---	TUOI	0.006	0.004	0.065	0.001	0.082	-0.001	0.002
NHANTHUCYT	<---	NHANTHUCCSHT	0.327	0.055	0.097	0.002	0.504	-0.013	0.003
YDINH	<---	THAIDO&AN-HHUONG	1.101	0.074	0.057	0.001	1.000	-0.003	0.002
YDINH	<---	GTRI	0.23	0.025	0.031	0.001	-0.023	-0.003	0.001
YDINH	<---	NHANTHUCCSHT	-0.046	0.05	0.069	0.002	-0.039	0.005	0.002
YDINH	<---	HIEUBIET	-0.127	0.059	0.074	0.002	-0.105	0.003	0.002
YDINH	<---	TNHAP	0.005	0.007	0.034	0.001	0.026	0.002	0.001
YDINH	<---	NHANTHUCYT	0.285	0.088	0.067	0.002	0.166	-0.003	0.002
QDINH	<---	GIACN	-0.394	0.060	0.046	0.001	-0.293	-0.002	0.001
QDINH	<---	YDINH	0.41	0.052	0.047	0.001	0.383	0	0.001
QDINH	<---	TTUC	0.314	0.036	0.047	0.001	0.387	-0.001	0.001

NB:

Est.: Maximum Likelihood Estimation

se – se: standard error of standard error

bias: deviation

SE-Bias: Standard error of deviation.

pants", and "knowledge of insurance" have impacts on the "intention of purchasing insurance". Of these factors, the first two factors affects positively the "intention" whereas the latter is unfavorable to it.

The factors including "intention of purchasing

voluntary automobile insurance", "insurance acquisition procedure" and "price-sensitivity" affect "the decision of purchasing voluntary automobile insurance". Of these factors, the first two factors influence favorably while the latter does unfavorably.

3. Suggested solutions

After having set up and analyzed the model of factors affecting the purchase of vehicle insurance, the author would like to make some proposals to State organizations managing officials and insurers as follows.

- It is necessary to persuade the community to have an appropriate attitude and behave properly when traveling on road; convince people to purchase voluntary vehicle insurance and make them aware of the benefits of buying voluntary automobile insurance. At the present, some insurers present and sell voluntary automobile insurance to those who have to purchase obligatory insurance. This makes car owners confused between the two kinds of insurance, leading to their improper attitude about and incorrect knowledge of insurance.

- To educate people on traffic regulations, especially those who currently own cars, is also important. In reality, many car owners purchase insurance, but they are much more interested in obligatory insurance. Behaviorally, people always wish to pay less for acquisition of a thing. So, in order to encourage them to purchase voluntary insurance, it is necessary to provide them with more knowledge about the features and benefits of insurance so that they could be willing to join the insurance.

- Today, the people are aware of the necessity of insurance to reduce losses occurring as a result of traffic risks. However, the knowledge of voluntary automobile insurance is still limited, causing customers to hesitate in purchase of insurance. For example, there are too many types of insurance with many different price package; the terms and conditions of insurance policies are not clear enough, causing customers a great deal of difficulties in distinguishing which is which; information about insurance claim is wordy and vague; the time to deal with a claim is quite long, and etc. In short, knowledge on voluntary automobile insurance should be broadened with a view to expanding the scope of voluntary insurance sector.

- The procedure of providing related information and dealing with claims must be as simple and convenient as possible because cars owners usually do not have much free time. In fact, several of insurers have made it. However, when there is a problem to be disposed, these insures forces customers to execute a deluge of dossiers or put these claims on the shelves for later processing.

- The "mouth-to-mouth" propagation in insurance sector in general and in car insurance in particular is also a good channel of advertising. Social contacts and acquaintances of customers have strong influence on his or her intention of purchasing insurance.

- It is necessary to explain and propagate the benefits of voluntary insurance and the pricing of insurance services so that customers can form a price-sensitivity and have a good impression on an insurer.

However, due to the fact that the study is conducted limitedly in the municipal area and with the humble number of samples, it is not much representative. Another drawback of the research is that there is no comparison with previous studies in the context of Vietnam.

4. Conclusion

The research model of the purchase of voluntary automobile insurance is developed from the two models namely TRA by Ajzen and Fishbein (1975) and TPB by Ajzen (1991) with the references to previous studies of Lund and Rundmo (2009), Hayakawa (2000), Goto (2003), Rafaely (2006), Horgn and Chang (2007), Giới and Huy (2006), and Thọ and Trang (2008). The analysis results confirm that the factors: (1) insurance-purchasing procedure, (2) insurance-purchasing intention of car owners, and (3) price-sensitivity all affect the decision to buy insurance. Moreover, insurance-purchasing intention is influenced by the factors: (1) attitude of car owners and social influence (major impact), (2) awareness of latent risk when traveling on road, and (3) knowledge of voluntary insurance. Finally, the research has also

given some proposals to develop the voluntary automobile insurance sector■

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