

CHAPTER 3

METHODOLOGY

The objective of this research is to find out the influence of perceived usefulness, perceived ease of use, trust, government support and social influence on the intention to use IB banking among young adult in Vietnam.

In this chapter we will look detail at the methodology which includes the conceptual framework, research hypotheses, measurement, sampling plan and data analysis methods.

3.1 Research framework

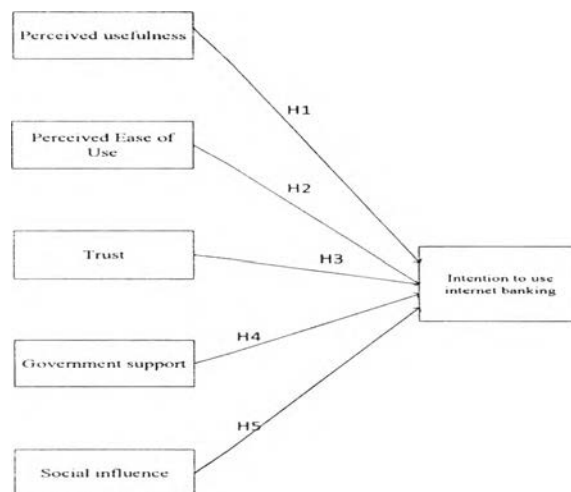


Figure 3.1 Conceptual framework of the study

As shown in the Figure 3.1, the conceptual framework of this research consists of five independent variables: perceived usefulness, perceived ease of use, trust, government support, social influence and one dependent variable: intention to use internet banking. This model contains 5 hypotheses (H1, H2, H3, H4 and H5).

3.2 Research hypothesis

The purpose of the current study is to explore the impact of five independent variables: perceived usefulness, perceived ease of use, trust, government support and social influence on the dependent variable: intention to use internet banking. Hypotheses are proposed as following:

H1: Perceived usefulness has a strong effect on Vietnamese intention to adopt internet banking.

H2: Perceived ease of use has a positive influence on Vietnamese intention to adopt internet banking.

H3. Trust will have a significant impact on Vietnamese's intention to use internet banking.

H4: Government support has a strong influence on the Vietnamese to adopt internet banking.

H5: Social influence has a positive effect on Vietnamese's intention to adopt internet banking.

3.3 Measurement

3.3.1 Likert scale:

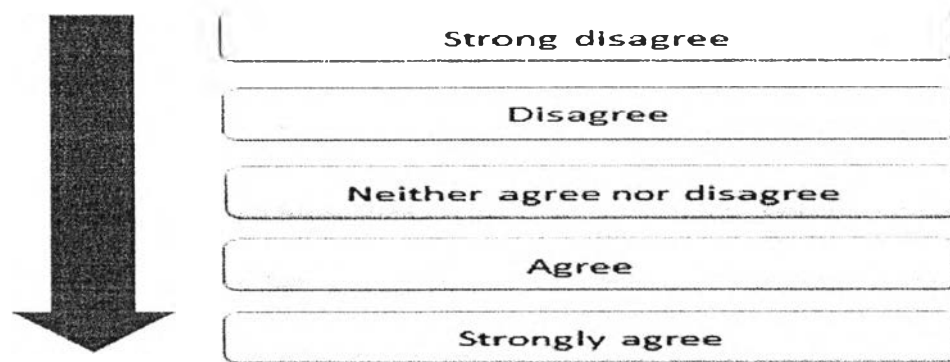
A Likert scale is a psychometric scale commonly used in questionnaires, and is the most widely used scale in survey research, such that the term is often used interchangeably with rating scale even though the two are not synonymous. When responding to a Likert questionnaire item, respondents specify their level of agreement to a statement. The scale is named after its inventor, psychologist Rensis Likert (http://en.wikipedia.org/wiki/Likert_scale).

A Likert item is simply a statement which the respondent is asked to evaluate according to any kind of subjective or objective standard; In general we evaluated the level of agreement or disagreement of respondent. Five ordered response levels are often used, although some psychometricians promote using seven or nine levels; a recent empirical research indicated that a 5- or 7- point scale may increase the



mean scores relative to the highest possible attainable score, compared to those produced from a 9- or 10-point scale, and this difference was statistically significant.

Likert scale measures either positive or negative response to a statement. In the current study, the positive measuring will be applied. I also desire to use five-level of Likert items in order to explore the influence of each independent variable on behavioral intention with the format of Likert scale is:



3.3.2 Intention of using Internet Banking

Respondents are asked to indicate their intention of using IB service whether they agree with each of the statements on a five-point scale, ranging from 1 is equivalent to strongly disagree to 5 refers to strongly agree. The higher of point scale they pick, the higher they accept using IB service. A six items scale was constructed to examine intention of using IB (see Table 3.1). Items used to measure intention of using IB system were developed based upon Davis (F. Davis et al., 1989), Jaruwachirathanakul and Fink (2005) (Jaruwachirathanakul & Fink, 2005), and Chong et al. (2010) (Jaruwachirathanakul & Fink, 2005) studies.



Table 3.1 Intention of using IB scale items

Code	Item	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
IU1	I would use the internet banking for my banking Needs	1	2	3	4	5
IU2	I would see myself using the internet banking for handling my banking transactions	1	2	3	4	5
IU3	Assuming that I have access to internet banking, I intend to use it	1	2	3	4	5
IU4	For future task, I would use internet banking	1	2	3	4	5
IU5	In the future, I plan to use the internet banking often	1	2	3	4	5
IU6	I intend to increase my use of the internet banking in the future	1	2	3	4	5

3.3.3 Perceived Usefulness about IB service:

If a customer believes that a certain application will help him perform his job better, he will be more likely to use it than if he does not recognize the application's usefulness (F. Davis, 1989). This variable, as a component generated from the factor analysis, consists of 5 items regarding the consumer's apprehension of the usefulness of the internet channel as a part of the communication with banks. The 5 items (PU1-PU5) concern how the IB service has contributed to providing customers a better management and overview of their finances, and to offering customers a more convenient and useful method of conducting their related-bank business. The perceived usefulness perception will be assessed by 5-point scale rating from strongly disagree (1) to strongly agree (5). The higher of point scale respondent chose, the higher awareness that they think IB is useful.



Table 3.2 Perceived Usefulness about IB scale items

Code	Item	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PU1	Using Internet Banking would enable me to accomplish transactions more quickly and easier	1	2	3	4	5
PU2	Internet Banking allows me to manage my finances more efficiently	1	2	3	4	5
PU3	Internet banking increases my productivity of utilizing banking service	1	2	3	4	5
PU4	Internet banking made communication with banks much esier and more convenient	1	2	3	4	5
PU5	Overall, I would find using Internet Banking to be advantageous	1	2	3	4	5

3.3.4 Perceived Ease of Use about IB:

The third component which generated from the framework is —ease of use, which has been found to influence customer's usage behavior in previous studies (F. Davis et al., 1989). This variable includes 7 items, based upon researches of David (F. Davis, 1989), Pikkarainen (Pikkarainen et al., 2004), Amin (Amin, 2007) and Chong (A. Y. Chong, Ooi, K.B., Lin, B., Tan, B.I., 2010). The perceived ease of use belief will be caught by five-point scale ranging from strongly disagree (1) to strongly agree (5). The higher of point scale respondent select, the higher awareness that they think IB is ease of use. The seven items (Table 3.3) concern how customers evaluate using IB service and how it gives them convenient way to use.

Table 3.3 Perceived Ease of Use about IB system scale items



Code	Item	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PEU1	Learn to use Internet banking is easy for me	1	2	3	4	5
PEU2	It is easy to do what I want to do using Internet Banking	1	2	3	4	5
PEU3	My interaction with internet banking is clear and understandable	1	2	3	4	5
PEU4	I find internet banking to be flexible to interact with	1	2	3	4	5
PEU5	It would be easy for me to become skillful at using internet banking	1	2	3	4	5
PEU6	It is easy for me to remember how to perform task with Internet Banking	1	2	3	4	5
PEU7	Overall, I think Internet Banking is easy to use	1	2	3	4	5

3.3.5 Trust

Items used to catch trust perception of respondents were developed based upon Tan and Teo (A. Y. Chong, Ooi, K.B., Lin, B., Tan, B.I., 2010), Pikkarainen (Pikkarainen et al., 2004), Jaruwachirathanakul and Fink (Jaruwachirathanakul & Fink, 2005), Chong (A. Y. Chong, Ooi, K.B., Lin, B., Tan, B.I., 2010) studies, which measures the level of which a person believes IB service to be trustworthy. There are total 7 items were developed in this construct to help respondents indicate their degree of trusting in IB service. A five point Likert scale which ranging from strongly disagree (1) to strongly agree (5) was applied. The higher of point scale they pick out, the higher they trust when using IB service.



Table 3.4 Trust scale items

Code	Item	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
T1	I am confident that transaction conducted through internet banking is secure and privacy	1	2	3	4	5
T2	I believe my personal information on internet banking will be kept confidential	1	2	3	4	5
T3	I think that my bank uses the best technologies and solutions for security and privacy of customers	1	2	3	4	5
T4	I think my bank has enough expertise's, resources and experience to manage their internet banking well	1	2	3	4	5
T5	I trust my bank will not reveal customer's personal information to unauthorized parties	1	2	3	4	5
T6	I think my bank is famous and prestigious with Internet Banking service	1	2	3	4	5
T7	Overall, I think my bank provides a trusted Internet Banking service	1	2	3	4	5

3.3.6 Government support

The items included in government support were built up rely on Jun Wu (Wu, 2005) , Chong (A. Y. Chong, Ooi, K.B., Lin, B., Tan, B.I., 2010). Those items in Table 3.5 will indicate that how users know and aware of Vietnamese government's support IB. Respondents will express their perception of how the government support IB based on employing five-point scales rating from strongly disagree (1) to strongly agree (5).



The higher of point scale they picked up, the higher of belief they think government support IB.

Table 3.5 Government support scale items

No	Item	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Government encourages and promotes the usage of internet banking and e-commerce	1	2	3	4	5
2	The internet infrastructure and facilities such as bandwidth is sufficient for online banking	1	2	3	4	5
3	The government is active in setting up the facilities to enable Internet banking	1	2	3	4	5
4	The government is driving the development of online banking	1	2	3	4	5
5	The government has good regulation and laws for internet banking	1	2	3	4	5

3.3.7 Social influence impact on IB

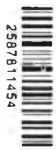
In this study, the last component of the questionnaire is concerned with social influence impacts on the intention to use IB of Vietnamese users which is measured through Likert scale ranging from 1- strongly disagree at all to 5- strongly agree. To measure it, six questionnaire items were adopted and developed from Tan and Teo (Tan, 2000), Yeoh Sok Foon, Benjamin Chan Yin Fah (Foon & Fah, 2011), Thieu Quang Thang (thang, 2010), Sujana Adapa (Adapa, 2011), Paul H.P. Yeow, Yee Yen Yuen, David Yoon Kin Tong (H.P.Yeow, Yuen, Tong, & Lim, 2008). The entire questionnaire items are listed as following:

Table 3.6 Social influence impacts on the adoption of IB

No.	Item	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	My working/study environment support internet banking	1	2	3	4	5
2	Using internet banking indicates me to have a higher status than those who do not	1	2	3	4	5
My adoption of using internet banking is affected by:						
3	My colleague, peer and friends	1	2	3	4	5
4	My family	1	2	3	4	5
5	People who are important to me	1	2	3	4	5
6	Information on media such as radio, television, internet or newspaper	1	2	3	4	5

3.4 Sampling

This research aims to examine the self-reported behaviors of individual customers and their intention to use IB among young adult in Vietnam. The research encompasses user and non-user of IB in Vietnam and most of them have personal bank accounts and knowledge of banking services. The number of desirable respondents needed for a valid analysis was determined to be at least 300. This number has been proven to be valid by previous researcher's experience. Moreover, I also distributed my survey form to my friends who are academic in finance and banking and three executives from the banking industry for their comments and revised my survey questionnaire based on the feedbacks I received from them. The questionnaires were designed in English and then translated into Vietnamese in order



to assure that respondents clearly understand each item of the questionnaire. This study was conducted by both online (with IB users) and directly (with IB non-users).

3.5 Data analysis techniques

In order to achieve the purpose of the current study and test the hypotheses, this research will be examined by the following statistical analysis:

3.5.1 Descriptive analysis:

Descriptive statistical analysis was applied to show a demographic profile of the respondent. This data presents information regarding the respondent's gender, age, education, income, position, occupation, and how are they familiar with IB.

3.5.2 Factor analysis and reliability

The purpose of using factor analysis is condensing a large set of variables into a smaller number of basic components, which include some connected variables (Pallant, 2001). Factor analysis is used to identify the number and nature of the latent factors that are responsible for co-variation in the data set (Foster, 1998). Factor analysis assumes that a small number of unobserved (i.e. latent) constructs are responsible for the correlation among a large number of observed variables. The latent constructs cannot be directly observed, but they affect observed variables.

In order to identify significant items, this study follow the main criterion of the rule of thumb was developed by Hair (J. F. Hair & al, 2006) such as: (1) Factor Loading > 0.50 , (2) EV = Eigen value ≥ 1 (represents the total variance explained by each factor. In this approach, only factors with EV greater than 1.0 are retained), (3) Item-to-total correlation ≥ 0.5 and (4) Coefficient alpha (α) ≥ 0.7 .

The Kaiser-Meyer-Olkin (KMO) test was also use to measure sampling adequacy of the factor analysis and a KMO value of 0.6 or higher is considered acceptable (C.Lim, 2013). The Bartlett's Test of Sphericity was used to determine that the original correlation matrix is an identify matrix (a matrix of zero correlations which consists of all zeros except the 1's along the diagonal). If the correlation coefficient value is less than 0.001, then the R-matrix is an identify matrix and the factor analysis is appropriate.



Reliability can be defined as the degree to which measurements are free from errors and, therefore, yield consistent results. Operationally, reliability is described as the internal consistency of a scale, which evaluates the degree to which the items are homogeneous. Cronbach's alpha is a widely used measure of internal consistency (Cronbach, 1951) (Nunnally, 1978). A scale is considered reliable if the alpha coefficient is greater than 0.70 and if is smaller than 0.3, then it implies that there is low reliability.

Cronbach's coefficient alpha is the most widely used estimator of the reliability of tests and scales. However, it has been criticized as being a lower bound and hence underestimating true reliability. A popular alternative to coefficient alpha is composite reliability (CR), which is usually calculated in conjunction with structural equation modeling (Peterson & Kim, 2012). So Measure reliability was assessed using internal consistency scores, calculated by the composite reliability scores (Werts, Linn, & Joreskog, 1974). Molina (Molina, Montes, & Ruiz-Moreno, 2007) stated that the minimum proposed composite reliability value is 0.70. Thus in this study composite reliability for each factor will be calculated. The formula for Composite Reliability is as follows

$$CR = \frac{(\sum L_i)(\sum L_i)}{(\sum L_i)(\sum L_i) + (\sum e_i)}$$

(i = 1... n: observed variables, L = standardized factor loadings, e = error variance)

Table 3.7 Factor analysis and reliability of Perceived ease of use

Latent construct	Indicator	Factor loading	Item-total correlation (ITC)	Eigen value (EV)	Variance Explained (%)	Reliability
Perceived ease of use (PEU)	PEU7	0.857	0.836	9.055	39.370	Cronbach's α =0.923 CR = 0.914
	PEU5	0.838	0.813			
	PEU3	0.828	0.821			
	PEU2	0.811	0.774			
	PEU6	0.784	0.702			

	PEU1	0.754	0.748			
Perceived usefulness (PU)	PU4	0.789	0.623	1.174	5.102	Cronbach's $\alpha=0.882$ CR = 0.763
	PU3	0.666	0.750			
	PU5	0.621	0.781			
	PU1	0.589	0.769			
Trust (T)	T3	0.839	0.785	3.596	15.636	Cronbach's $\alpha=0.909$ CR = 0.878
	T5	0.784	0.631			
	T4	0.773	0.791			
	T2	0.738	0.790			
	T7	0.705	0.753			
Government Support (GS)	GS5	0.872	0.817	1.725	7.502	Cronbach's $\alpha=0.874$ CR = 0.886
	GS1	0.818	0.745			
	GS3	0.780	0.680			
	GS4	0.778	0.684			
Social Influence (SI)	SI4	0.845	0.587	1.075	4.673	Cronbach's $\alpha=0.809$ CR = 0.824
	SI5	0.814	0.657			
	SI3	0.677	0.625			
Intention to use (IU)	IU5	0.861	0.781	3.994	66.567	Cronbach's $\alpha=0.898$ CR = 0.922
	IU6	0.852	0.769			
	IU4	0.830	0.739			
	IU2	0.812	0.723			
	IU3	0.784	0.690			
	IU1	0.751	0.650			
KMO = 0.924 Sig = 0.000						

The Cronbach's alpha was used to delete the item that make the reliability and degree of consistency among questions decrease. After delete some items, the Cronbach's alpha and composite reliability (CR) indexes of each construct pointed out that the consistency among remained questions in each construct is high. The KMO and significant level are 0.924 and 0.000 respectively indicate that the set of



variables collectively fulfill the necessary threshold of sampling adequacy. Therefore, the variables satisfy the fundamental requirements for factor analysis. Factor analysis was conducted and used in the analysis to identify adoption characteristics. Extraction method used is Varimax rotation. The factor loading of .50 was employed as a cut-off point for each observed variable (J. F. Hair, Anderson, Tatham, & Black, 1998). Factor analysis hints five factors had an eigenvalue greater than 1. Cumulative variance of 72.238 % was explained by the factors. The five factors were perceived ease of use, perceived usefulness, trust, government support, and social influence. Table 3.7 shows the results for all the factors and their loadings, eigenvalues (EV), Variance explained, Cronbach's alphas and composite reliabilities (CR).

For the first factor - Perceived ease of use, the results showed their high loading – higher than 0.6 (ranking from 0.754 to 0.857). The values of corrected item-total correlation (ITC) show that all items in the latent are acceptable with ITC over 0.5. The Eigen Value (EV) and Variance explained value of this factor are 9.05 and 39.370 % respectively, the Cronbach's $\alpha = 0.923$, CR = 0.914. These values are very ideal for further data analysis processes.

In the factor Perceived Usefulness one item (PU2) was deleted. All remained items' results have high loading values, over the traditional value (0.5) and ICT from 0.623 to 0.781, EV = 1.174, Variance is explained is 5.102%, Cronbach's $\alpha = 0.882$, CR = 0.736. All these values are over the satisfactory values and indicate that all items are reliable and can be used for any further analysis.

The third construct – Trust remains 5 items compare with 7 items originally. All leaf items have relatively high loadings (from 0.705 to 0.835) and ICT results over 0.5. This factor also has high EV, Variance Explained and Cronbach's alpha and CR which are 3.596; 15.636; 0.909 and 0.878 respectively. The outcome expresses high reliability of the measurement items.

The fourth construct is Government Support, including four leaf items over 0.7 loading values (one item GS2 was deleted). ICT values are higher than the cutoff, which are from 0.680 to 0.817. This factor also has satisfactory EV, variance explained



(1.725 and 7.502 in order) and high Cronbach's alpha and CR which are 0.874 and 0.886, respectively. These findings indicate adequate reliability of the measurement items.

The Social Influence construct includes 3 items compared with 6 original items has over 0.6 of loading values. ICT values are higher than the cutoff, ranging from 0.587 to 0.657. The EV, variance is explained are 1.075 and 4.673 in order. Cronbach's alpha at the value of 0.809 and CR value is 0.824. Those items of social influence can also be used for further analysis.

3.5.3 Analysis of "t" Student:

The t-Test examines the statistical significance in the difference between genders and environment of working or studying (urban or rural area), position of respondents for a single variable. In the current study, to specify whether customers has different awareness of perceived usefulness, perceived ease of use, trust, government support and social influence toward behavioral intention, this technique will assess the difference in the relationship between one independent variable and single dependent variable in term of one demographic characteristic.

3.5.4 Analysis of Variance (ANOVA):

ANOVA is employed to compare more than 2 means simultaneously and how to keep track of sources of variation to potential explanatory factors. ANOVA simplest form provides a statistical test of whether the means of several groups are all equal, and therefore generalizes t-test to more than two groups. ANOVA are benefit in comparing three or more means. In the current study, ANOVA will be applied for variables (except gender and working environment) which have more than 2 options (age, education degree, occupation, income, and how often respondent is familiar with IB).

3.5.5 Multiple Regression Analysis

Multiple regression analysis was used when we want to examine the relationship between independent factors (adoption factor) for online banking and dependent factor (consumer intention to use online banking). It is a statistical



process for estimating the associations between a set of independent variables and a single dependent variable (J. Hair, Black, Babin, Anderson, & Tatham, 2005).

