CHAPTER 3

Methodology

3.1 Research Process

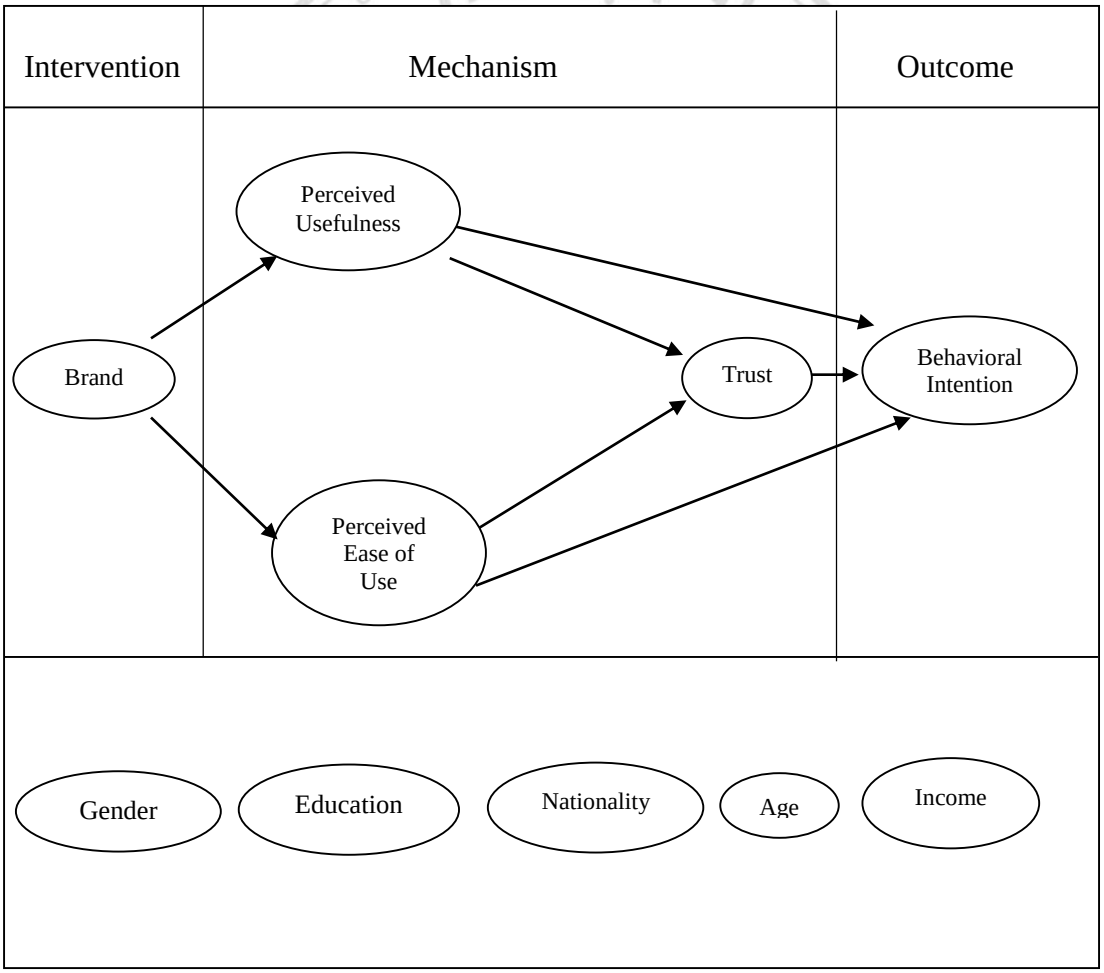
In this paper, survey method will be used to collect up-to-date primary data. The main reason for using this survey method is that the researcher can target what he/she really wants to investigate within a conceptual framework or a particular theory (Piboonrungroj, 2012). The conceptual framework has been developed mainly by following the paper of Shumaila (2005) about Internet Banking in the United Kingdom. Based on the suggested conceptual framework of Shumaila, the research design was created firstly with idea generation and then improved this basic framework with the literature review together with constructing key variables. CFA (Confimatory Factor Analysis) will be used to validate the reliability of the factor on the latent variables. Finally, in order to analyze the interrelationships between independent variables and dependent variables for the behavioral intention to use e-banking by international tourists in Myanmar, structural equation modeling (SEM) approach will be used.

3.2 Conceptual Framework

Nowadays, e-banking users are concerned much more about the security even though the technology is advanced in the security system (Suh, 2003). The distrust of users comes from this concern. One of several reasons why the distrust persists is because of some of the headline news about e-mail scams, identity theft, and "phishing" that undeservedly falsifies consumer perceptions (Gerrard, Cunningham, & Devlin, 2006). The proposed conceptual framework will be mainly based on the TAM (Davis, Bagozzi, & Warshaw, 1989). However, in order to get the strength impact on the actual

use of internet banking, the author of this paper will put trust as the mediator in the system similar to the idea of Shumaila (2005).

The intervention of this TAM is the brand, which is also the reputation of th bank. Similar to the creation of interpersonal trust, a bank with a reputation of being trustworthy would have a greater incentive to institute measures to avoid losing such a reputation (Casalo L. C., 2007). The demographic profile will be collected which are gender, education, nationality, age, and income.



Source: own illustration

Figure 0.1: Proposed Conceptual Framework
(for E-Banking in Tourism industry in Myanmar)

3.3 Research Design

3.3.1 Sample Size Requirements

The total number of 245 respondents, which is the medium requirement, will be targeted according to the rule of thumb.

$$N \geq [(x * I) + D] * S$$

So $N \geq [(21* 2) + 7] * 5 = 245$

Where: N: Requisite sample sizes

x: Number of estimations

I: Error type I and Error type II ; I = 2

D: Number of construct domains

S:Number of Scales

3.3.2 Study Population

The interested area for the respondents will be the tourist attraction areas of Yangon. The study was conducted among the international tourists who temporarily stay or visit Myanmar during the study period.

3.3.3 Sampling procedure and data collection

To fulfil the purpose of this research paper, the survey method was used by collection of primary data from the corresponding tourist groups in Myanmar. A snowball sampling method was used to achieve the required sample size among the target population. As the primary target of study population is international tourists, the data collection locations was in famous tourists attraction areas like pagodas, hotels, and restaurants.

The field data collectors introduced the purpose of the study to the tourists, confidentiality, and rights to refuse at the first meeting. If the tourist was proficient enough in the English language and accepted the request, the self-completion

questionnaire was provided. The contact of the researcher was provided at the end of the questionnaire and acknowledged their participation.

In order to maintain the confidentiality, the respondents detailed contact was not asked and ensured the data collector of keeping the questionnaire in a secured and systematic manner.

3.3.4 Survey Design

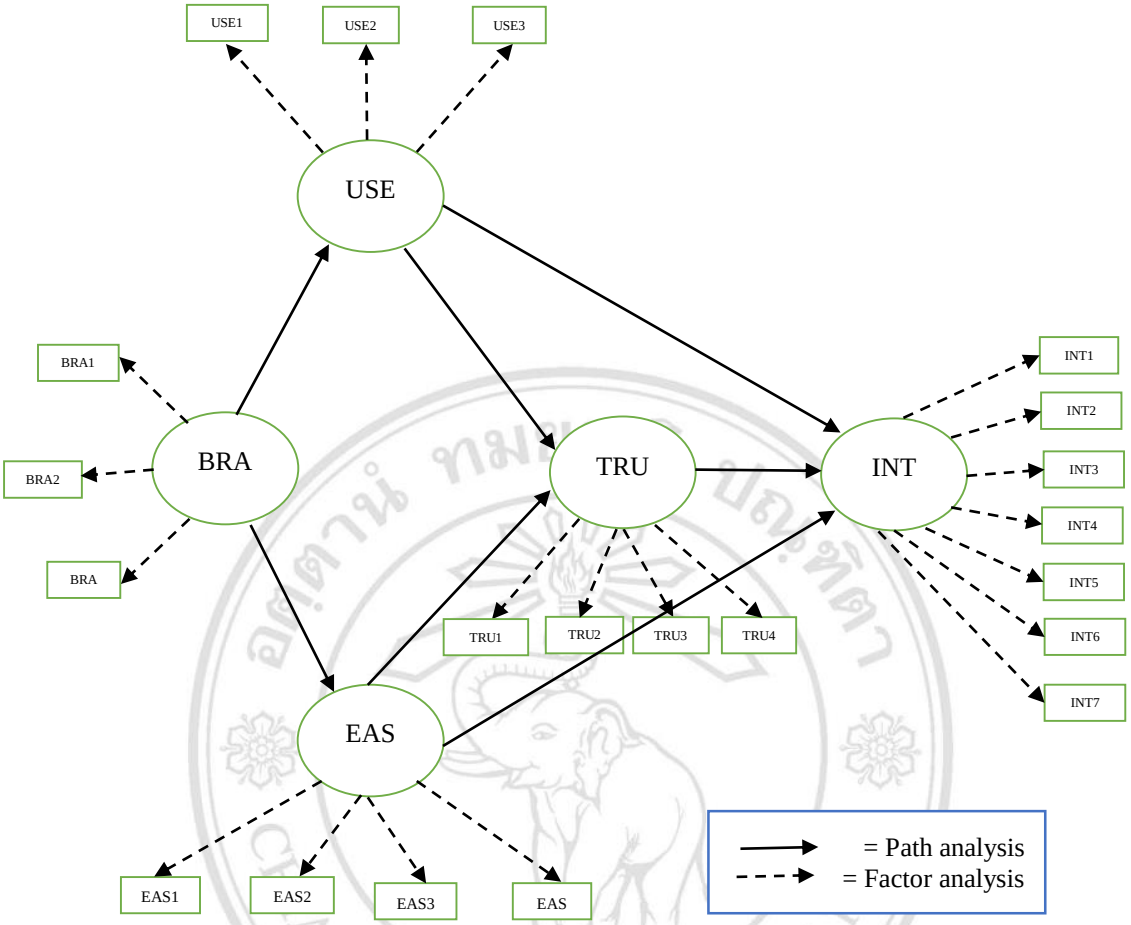
The survey was developed by the constructs adopted from the (Kenneth B. Yap, 2010) and (Davis, Bagozzi, & Warshaw, 1989) literature review. There are 3 variables to contribute construct "brand", 3 variables to contribute construct "perceived usefulness", 4 variables to contribute construct "perceived ease of use", 4 variables to contribute construct "trust", and 7 variables to contribute construct "e-banking usage". Altogether, there are 5 constructs. All the sub-constructs variables were asked in 5 points scaled (Likert) – "1 = strongly disagree"; "2 = somewhat disagree"; "3 = neither agree nor disagree"; "4 = somewhat agree"; and "5 = strongly agree".

The questionnaire composes two main sections. The first section is about the respondent's demographic profiles asking about their sex, age, nationality, education and annual income. The second section is about their perceptions and usage experience toward e-banking in Myanmar.

3.4 Assessment of the Measurement Model

3.4.1 CFA Model Diagram

Figure 3.2 illustrates the proposed model for the behavioural intention of the user upon e-banking services in Myanmar



Source: Own illustration

Figure 0.2: Proposed Model for E-Banking in Myanmar

3.4.2 CFA Model Equations

The Confirmatory Factor Analysis equations can be expressed as the items explained by their factor denoted by Y. The coefficient of each factor is denoted by λ. The constant term is denoted by μ. The error term is denoted by e. CFA model equations can be described in a matrix form with their appropriate dimensions. The measurement model can be predicted as below

$X_i = \mu_{i1} + \lambda_{i1} Y_1 + e_{i1}$, i = 1,2,3

$X_j = \mu_{j2} + \lambda_{j2}Y_2 + e_{j2}$, j = 1,2,3,4

$X_k = \mu_{k3} + \lambda_{k3}Y_3 + e_{k3}$, k = 1, 2, 3, 4

$X_l = \mu_{l4} + \lambda_{l4}Y_4 + e_{l4}$, l = 1,2,3,4

$X_m = \mu_{m5} + \lambda_{m5}Y_5 + e_{m5}$, m = 1,2,3,4,5,6,7

Where:

Y_1 = Brand

Y_2= Perceived usefulness

Y_3 = Perceived ease of use

Y_4 = Trust

Y_5 = Behavioural Intention to use e-banking

3.4.3 First-order constructs

A confirmatory factor analysis (CFA) was performed to validate the robustness of the dimensional constructed model. The goodness-of-fit indices, reliability, and validity of the constructs were assessed to ensure the sufficiency of the measured model.

3.4.3.1 Goodness-of-fit (GFI) of the constructs

To make sure the overall fit of the constructs, the analysis will ensure evaluation of the following statistical analysis:

1. Ratio of Chi-square test and degree of freedom;
2. Comparative Fit Index (CFI);
3. Tucker-Lewis Index (TLI);
4. Root mean square error of approximation (RMSEA); and
5. Standardized root mean square residual (SRMR).

The summarized descriptions of the goodness-of-fit indices is illustrated in the table below.

Table 0.1: Goodness of Fit (GFI) Indices for Confirmatory Factor Analysis model

INDEXES	DESCRIPTION	ACCEPTED RANGE
ABSOULTE FIT MEASURES		
Chi-sq to the degrees of freedom ratio (χ^2/df)	Test the null hypothesis of the covariance matrix of the conceptual model is not different from the covariance matrix of actual collected data	≤ 3
Root mean square error of approximation (RMSEA)	The evaluation of square residuals for the degree of freedom	< 0.05
Standardized Root Mean Sq Residual (SRMR)	The square root of difference between the covariance of the conceptual model and the actual collected data	< 0.05
INCREMENTAL FIT MEASURES		
Comparative Fit Index (CFI)	The comparison of the index between the proposed model and the null model adjusted for the degree of freedom	> 0.95
Tucker-Lewis Index (TLI)	To solve the negative bias index in the model	> 0.95

Source: Adapted from (Piboonrungroj, 2012)

3.4.3.2 Reliability and Validity of the construct

The construct can be trusted to be reliable when the measurement process results the same answer over repeated test (Carmines & Zeller, 1979). The composite reliability (CR) is used to evaluate the internal reliability of latent constructs. The value of CR should be greater than 0.6 or if possible preferably greater than 0.7.

The overall validity of the construct contingent can be decided upon

- Normality test (Shapiro-Wilk Normality) is used in this paper
- Convergent validity (i.e., the degree of association between measures of a construct)

- Discriminant validity (i.e., the degree to which two measures are designed to measure similarly, but conceptually different constructs, are related) (Netemeyer, Bearden, & Sharma, 2003)
- Composite reliability test

The discriminant validity or divergent validity is measured for all possible pairs of measurement constructs by first constraining the estimated correlation parameter between both model and then performing a Chi-square difference estimation on the values obtained for the constrained and unconstrained model. The discriminant validity is assumed to be satisfied if the different valve of two models are greater than zero.

3.4.4 Structural Equation Modelling (SEM)

SEM is a multivariate technique that analyses the covariance structure of variables (Randall E. Schumacker, 2010). SEM allows the sophisticated theorectical models to be analysed, modified, and tested statiscally. It is also known as covariance structures, covariance structure analysis, causal modeling, path analysis (with latent variables), and covariance structure modeling, which are also basically switchable (Asparouhov & Muthén, 2010).

Other scientific literature (Hui & Zheng, 2010) indicate that structural equation model (SEM) was developed by two researchers, named Joereskog and Goldberger (1975). Joereskog handled the variable errors (1981). There are five building blocks in the SEM, which are model specification, model identification, model estimation, model testing, and model modification. SEM can also be used to test the hypotheses for the relationship between variables, and it is very flexible and comprehensive that subsumes other various techniques such as confirmatory factor analysis, multiple regression, path analysis, and ANOVA (Barrett, 2007).

3.4.4.1 Model Specification

In this step, all the relevant theory, research, and information, needed to be used in order to develop a theoretical model before collecting and analyzing the data. Then, the variables of the interested model have to be determined in every relationship. The goal of this process is to find the most closely fit model to the covariance structure.

3.4.4.2 Model Identification

This step is to solve the problem of not enough constraints on the model. To improve the constraints in the model, three levels of identification need to be considered. They are

- Under-identified, one or more parameters may not be uniquely defined
- Just-identified, all parameters are uniquely determined
- Over-identified, one or more parameters are estimated in more than one way

If the constraints in the model are either just-identified or over-identified, the model can be trusted to utilize. Otherwise, the degree of freedom will be negative in the model for under-identified.

3.4.4.3 Model Estimation

This step needs to estimate the variables specified in the interest model. A particular fitting function has been used in order to minimize the difference between the estimated implied matrix and sample covariance matrix.

3.4.4.4 Model Testing

In order to test how well the collected data fit the model, firstly consider the global tests in SEM known as model-fit criteria. The measures are based on a comparison of the implied covariance matrix to the sample covariance matrix. Then, the individual parameters of the model need to be considered whether a free parameter is significantly different from zero. Another one is whether the sign of the parameter agrees with what is expected and makes sense.

3.4.4.5 Model Modification

If the fit of the implied theoretical model is not as strong as expected and does not match the criteria of the Goodness of Fit index, then the model needs to be modified in this step.

After satisfying these five steps, the reliable model would be estimated by SEM, structural equation modelling.