



## **Editorial**

Dear Readers,

Welcome to Volume 8, Number 1 of the ASEAN Journal of Management and Innovation (AJMI). As the pandemic continues to impact communities all over the world in spite of widespread vaccination and relentless efforts to stem its spread, AJMI Editorial Board would like to offer once again its heartfelt good wishes to all those who have been directly affected by Covid-19.

With the Thai capital, and much of the rest of the country, still under partial lockdown, consumers remain very cautious about venturing out of their home and online shopping continues to grow. While e-commerce was already on the rise prior to the pandemic, Covid-19 has been accelerating its adoption as it has made acceptable practices that some consumers were slow or reluctant to endorse. This makes Lokweetpun Suprawan's article on social media influencers especially relevant. As reported in *The Mediator Role of Trustworthiness in Influencer Marketing of Food Products*, influencers have become a major source of e-words of mouth and can help to create a positive attitude towards a brand in ways a store's direct communication with consumers may not. As emphasized in this article, however, trust in influencers plays a key role in the level of influence they can have.

As discussed by I-Ching Tung, Yue Huang, Jia Zhao, Wari Chokelumlerd, and Arewan Cheewaprapanan in *Factors Influencing Chinese Consumers' Continuous Use Intention for Cross-Border E-Commerce*, online shopping knows no border. In China, thanks to the favorable perception of Thai culture, Thai products enjoy a positive image among online Chinese shoppers. Given the vast reservoir of potential Chinese consumers of Thai goods, developing a solid understanding of their online shopping attitude towards Thai products may prove quite helpful in gaining market shares. Clearly, for many businesses, the old playbook is unlikely to be relevant in the future.

With the exponential development of online activities, whether teleconferencing, telemedicine, teleconsulting, or online teaching, to name a few, the demand for advanced computer skills has been soaring. They are critical to reimagining the future and meeting the needs of the industry. They also require literacy in math and science. Yet, as a recent international student assessment test conducted in Thailand indicates, 40-60 percent of Thai students are illiterate in these subjects. Still, as Anita Causaren, Sasima Ratanasut, Augkana Tiyajamorn, and Orasa Pojeakpong argue in *The Determinants of Willingness to Study Mathematics and Actual Performance: An Application of the Theory of Planned Behavior*, illiteracy in math is not ineluctable. As they point out, one critical remedial step is to develop a solid understanding of the factors at the root of students unwillingness to study math.

As Natthanit Srimaserm explains in Strengthening Mahidol University Institute of Molecular Biosciences' Innovation and Research Policy toward a World-Class Research Institute, improving the country's competence in math and science, however, also requires an across-the-board steady and efficient implementation of existing policies designed to bring Thai research institutes on par with international ones. Too often, though, efforts are hamstrung by bureaucracy.

The need for innovation is not just limited to labs and research and development units across the country. It also pertains to management and involves employees at all levels in every industry. Focusing on the aviation sector, Nguyen Le Hoang Long, Nguyen Thi Thu Huong, and Ho Viet-Anh's article, entitled Service innovative behavior in Aviation Industry: An empirical Study of the Contribution of Perceived Organizational Support, confirms the key role an organization plays in promoting innovation among employees, in this case, flight attendants.

The pandemic has had a major impact on the inflow of foreigners entering Thailand, whose entry, either as tourists, migrant workers, or students, has been drastically curtailed with severe adverse economic consequences for all stakeholders, most notably a shortage of labor in some sectors. As noted by Kaniya Nantamontry in "Most Wanted Maid": The Route to the Right Product Strategy of Domestic Worker Service Business in Thailand, a good portion of Thai families employing maids prefer maids originating from neighboring countries, which in once-in-a-life-time crises poses a challenge. The article also discusses the main qualifications sought and possible avenues for domestic workers businesses to meet their clients' requests.

If the few last few before the pandemic broke out are any indication of future trends, once borders reopen, Thailand is likely to witness see a surge in the number of international students coming to Thailand to pursue their university education. As was increasingly the case before the pandemic, a great portion of them will hail from China, now the main country of origin of foreign students in Thailand. This makes I-Wen Chou's article on Chinese students' capacity to adjust to the Thai environment especially relevant. As she reports in Thai-Chinese Cultural Differences: A study of How Cultural Intelligence and Gender Affect Subjective Well-Being among Chinese Students Enrolled at Thai Universities, their capacity to adapt is largely a function of the level of cultural intelligence.

Finally, this volume also includes a contribution on rice brand equity in the context of Yunnan, China's most southwestern province. With many companies competing for market shares in a crowded field, it is especially important to understand what factors most contribute to brand equity, which is precisely what Chanchai Bunchapattanasakda, Yue Huang, Martin Feichtenschlager, Piotr Curtis, and Yun Wu do in an article entitled, Factors Influencing Chinese Rice Brand Equity: Yunnan Consumers' Perceived Value. This article may also be of interest to Thai rice retailers contemplating entering the Chinese market via Yunnan.

Jean-Marc Dautrey, JD  
Editor-in-Chief  
ASEAN Journal of Management and Innovation

## Contents

- 1 Factors Influencing Chinese Rice Brand Equity: Yunnan Consumers' Perceived Value  
*Yue Huang, Chanchai Bunchapattanasakda, Martin Feichtenschlager, Piotr Curtis, Yun Wu*
- 19 Determinants of Willingness to Study Mathematics and Actual Performance: An Application of the Theory of Planned Behavior  
*Anita Causaren, Sasima Ratanasut, Augkana Tiyajamorn, Orasa Pojeakpong*
- 38 Factors Influencing Chinese Consumers' Continuous Use Intention for Cross-Border E-Commerce  
*I-ching Tung, Yue Huang, Jia Zhao, Wari Chokelumlerd, Areewan Cheewaprapanan*
- 62 The Mediating Role of Trustworthiness in Influencer Marketing of Food Products  
*Lokweetpun Suprawan*
- 75 Service Innovative Behavior in the Aviation Industry: An Empirical Study of the Contribution of Perceived Organizational Support  
*Nguyen Le Hoang Long, Nguyen Thi Thu Huong, Ho Viet-Anh*
- 87 Strengthening Mahidol University Institute of Molecular Biosciences' Innovation and Research Policy toward a World-Class Research Institute  
*Natthanit Srimaserm*
- 98 Thai-China cultural Difference- A study of Cultural Intelligence, Gender, and Psychological Well-Being among Chinese University Students through in-depth interviews and online surveys.  
*I-Wen Chou*
- 117 Most Wanted Maid. The Route to the Right Product Strategy of Domestic Worker Service Business in Thailand.  
*Kaniya Nantamontry*
- 127 Guideline for Authors

# Factors Influencing Chinese Rice Brand Equity: Yunnan Consumers' Value

**Chanchai Bunchapattanasakda**

Doctoral Programs, Stamford International University, Thailand

chanchai.bunchapattanasakda@stamford.edu

**Yue Huang**

Stamford International University, Thailand

7079728@qq.com

**Martin Feichtenschlager**

Stamford International University, Thailand

martin.feichtenschlager@stamford.edu

**Piotr Curtis**

Stamford International University, Thailand

piotr.curtis@stamford.edu

**Yun Wu**

Stamford International University, Thailand

yun.wu@stamford.edu

## Abstract

The objective of this research is to study major factors influencing the rice's brand equity from the Yunnan (China) consumer's perspective. The research is a quantitative design using constructed survey questionnaires to collect data from 420 respondents who had bought branded rice within the past one year in Yunnan province, China, through the convenience sampling. Stepwise and Hierarchical Regression are employed to identify the factors affecting rice brand equity with perceived value as a mediator variable. The results find that retailer's image, distribution density, product, and promotion factors have a significant positive impact on rice brand equity. When consider by each factor, the results reveal that the retailer's image has the greatest influence on rice brand awareness and distribution density influences the rice brand image. Product has the greatest impact on rice brand perceived quality and rice brand loyalty. Finally, the results confirm that perceived value has a partial mediating effect between the external influencing factors and the four dimensions of rice brand equity.

**Keywords:** Brand Equity, Chinese Rice, Perceived Value, Rice Brand.

## 1. Introduction

Rice is a posteriori commodity with hidden characteristics (Dong, Mu, & Hou, 2013). In the case of asymmetric market information, brand, could convey product information for consumers to judge product quality through their purchasing behavior. Lately, rice products have changed from a simple product and price competition into a fierce competition between brands. Rice brand development has become one of the essential factors affecting the competitiveness of enterprises in the rice markets. Currently, China's rice enterprises realize

the importance of brand building. China rice enterprises are typically small and medium size creating more than 10,000 brands in 34 provinces and cities in China including thousands in Heilongjiang province, among these, Wuchang rice enterprises have more than 500 registered trademarks (Zhen, 2018). Only less than 30 percent of rice brands in China could enjoy high popularity and good reputation in the market. On the other hand, due to the less publicity and promotion, China's rice brands have not been able to gain a high degree of recognition and popularity in the market. Most Chinese rice enterprises do not focus on highlighting the product differences. Hence, enhancing brand equity is the key for the rice enterprises who desire to brand development, enhance the market competitiveness, and win the recognition of customers (Shang & Li, 2018).

Consumers' cognition and attitude towards rice will influence the choice of brand and the generation and formation of brand equity. The implementation of marketing activities would enable consumers to have a differentiated response to the brand in terms of cognition, emotion, behavioral intention, etc., which is a key source of rice brand equity (Yu & Zhao, 2003). However, there are few studies on rice brand equity, and on the functional relationship between influencing factors and rice brand equity. Therefore, this study aims to study the main factors influence rice brand equity, and analyze the relationship between the influenced factors and rice brand equity to help Chinese rice enterprises to effectively enhance rice brand equity, increase enterprise brand value, and strengthen their market competitive ability.

## 2. Literature Review

### *-Rice Brand Equity*

Brand equity is a value added brought by the brand to products and services (Fan, 2000). More and more scholars tend to analyze brand equity from the perspective of consumers, believing that brand equity is a differentiated response of consumers to marketing activities carried out by enterprises while consumers' recognition of brands is an important to form brand equity (Yu & Zhao, 2003). Brand equity from the perspective of consumers is an attitude and view of consumers towards brands, which needs to be measured through multiple dimensions. Aaker (1991), Keller (1993), Yoo and Donthu (2000) find the measurement dimensions of rice brand equity include brand awareness, perceived quality, enterprise's brand image, and brand loyalty. Miller (1999) states that brand awareness is an ability to know a brand name; it is a prerequisite for consumers to have purchase ideas and behaviors. In the rice market where brand becomes an important signal to convey the information of rice products and enterprises to consumers. When they are not familiar with the purchased brand, most people will think that the "well-known" brand provides better products in the market leading to more likely to gain consumers' favor (Hamza, 2011). Therefore, brand awareness is one of the important dimensions of measuring rice brand equity.

Chakraborty (2019) states that perceived quality and the enterprises positioning differentiation are other reasons for consumers to purchase. Under the theory of Cognitive Psychology, when consumers buy products, they will perceive and evaluate brands according to their associative memory network to make their own purchasing decisions (Chakraborty, 2019). Only when consumers have a good perception of the quality; they repeat the purchase and make positive comments. Thus, perceived quality is one of the necessary dimensions to measure rice brand equity. Biel (1992) presents that brand image is a multi-dimensional

concept including the image of enterprises, users, products, or services. Due to the particularity of rice, consumers will develop a corresponding association based on the industry status of rice enterprises, business scale, consumer groups, products or services and other aspects of the brand. They believe that only the good rice enterprises can produce and sell good products. Therefore, corporate brand image is an important dimension of measuring rice brand equity. Finally, attitudinal loyalty refers to consumers' commitment to the same brand, including purchase intention and recommendation intention (Baldinger, 1996). Behavioral loyalty refers to consumers' repeated consumption and purchase of the same brand. Rice enterprises that can effectively increase the value brought by the brands through a series of differentiated marketing, strengthening consumers' willingness, repurchase behavior, and encouraging consumers to form loyal customers to the brand. Hence, brand loyalty is the main dimension of measuring rice brand equity.

### ***-Relationship Between Retailer Image and Rice Brand Equity***

Retailers, as the bridge links consumers and products, are the closest contact with consumers. Consumers' perception of products is an important factor affecting consumers' decision on brands. (Wang & Zhang, 2015) and Dodds et. al. (1991) confirmed that the image of sellers has a positive impact on consumers' purchase intention and perceived quality. Yoo, Donthu and Lee (2000), Pettijohn and Mellott (2010) found that retailer's image has effects on brand awareness and brand image. When consumers buy branded rice, they will also weigh the selling brands based on the shopping environment, service attitude, and distribution service of the retail stores. Accordingly, the following research hypotheses are proposed:

**H1:** Retailer image has an influence on a) rice brand awareness, b) perceived quality of rice brand, c) brand image of rice enterprises, and d) on rice brand loyalty.

### ***-Relationship Between Distribution Density and Rice Brand Equity***

Distribution density, as a product sales strategy implemented by enterprises, aims to enable consumers to buy the products and enjoy the corresponding services in different places at anytime and anywhere. So that consumers have more time and opportunities to perceive the brand (Yoo et al., 2000). Li (2010) confirmed that distribution density has a significant positive impact on brand awareness, perceived brand quality, loyalty, and satisfaction. Based on this, the following research hypotheses are proposed:

**H2:** Distribution density has an influence on a) rice brand awareness, b) perceived quality of rice brand, c) brand image of rice enterprises, and d) brand loyalty.

### ***-Relationships Between Product Factors and Rice Brand Equity***

Lu, Li and Huang (2015) believe that when consumers buy an unfamiliar brand, they will identify and evaluate the brand according to the inherent attributes of the product. When consumers buy branded rice, consumers will make their own purchase choices based on the inherent internal attributes of rice (such as the quality of rice, etc.) and external attributes such as the reputation of rice, etc., so as to make corresponding judgments on the brand. Accordingly, the following research hypotheses are proposed:

**H3:** Product factor has an influence on a) rice brand awareness, b) perceived quality of rice brand, c) brand image of rice enterprises, and d) rice brand loyalty.

### ***-Relationships Between Promotion Factors and Rice Brand Equity***

Promotions increase consumers' understanding and cognition of the brand. Different forms of promotional activities have different effects on brand equity. Hu and Zhang (2014) found that in different product life cycles, price discount has both positive and negative effects on brand equity. Zhao and Song (2016) found that price reduction can bring higher customer perceived value and brand loyalty than gifts. In practice, the promotion activities carried out by rice enterprises include price promotion (discount) and non-price promotion (coupons). Based on previous studies, the way of promotion favored by consumers would increase their purchase to a certain extent and affecting consumers' evaluation of the brand. Hence, the following research hypotheses are proposed:

**H4:** Promotion factor has an influence on a) rice brand awareness, b) perceived quality of rice brand, c) brand image of rice enterprises, and d) on rice brand loyalty.

### ***-Mediating Effect of Perceived Value***

As a trade-off between perceived gain and perceived loss (Zeithaml, 1988), perceived value occupies an important position in the whole decision-making and consumption process. Zheng, Hu and Feng (2014) have confirmed the mediating role of perceived value between marketing strategy and brand loyalty. Wang, Wang, and Wang (2019) found that perceived value plays a part of mediating role in the relationship between word of mouth of unfamiliar product and purchase intention. When consumers buy a brand of rice, under the stimulus of external factors, the cost of buying rice will be weighed against the utility of rice, which will further affect consumers' buying attitude and behavior towards the brand of rice. Each consumer is different due to different economy, culture, needs and expectations, even if in the face of the same brand of rice, consumers' perceived value will be quite different. Accordingly, the following research hypotheses are proposed:

**H5:** Perceived value has a mediating effect between retailer image and each dimension of rice brand equity.

**H6:** Perceived value has a mediating effect between distribution density and each dimension of rice brand equity.

**H7:** Perceived value has a mediating effect between product factor and each dimension of rice brand equity.

**H8:** Perceived value has a mediating effect between promotion factor and each dimension of rice brand equity.

In conclusion, this research selects retailer image, distribution density, product factor and promotion factor as independent variables, and rice brand equity as dependent variables, including: rice brand awareness, rice brand perceived quality, rice enterprise brand image and rice brand loyalty. Based on the research hypothesis proposed above and taking consumer perceived value as a mediating variable, the conceptual framework is constructed as follows (Figure 1)

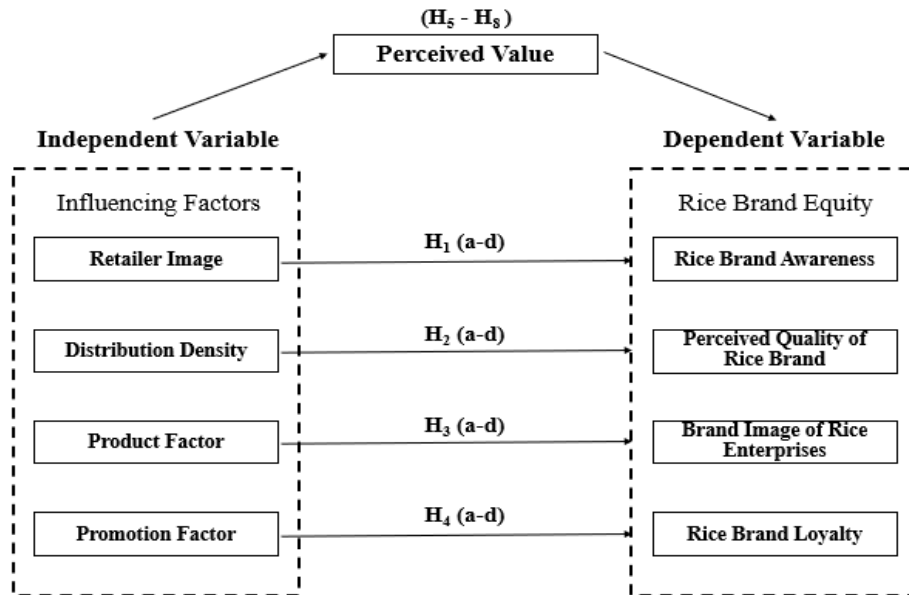


Figure 1: Conceptual Framework

### 3. Methodology

The research used a constructed survey questionnaire based upon a comprehensive review of related literature to collect the data from the samples. Measurement items and sources of questionnaire are shown in Table 1. The questionnaire consisted of two sections. The first section covered demographic information of respondents such as gender, age, income, shopping experience and frequency of shopping activities. The second section included the measurements to measure the influencing factors and rice brand equity factors identified in the conceptual model. The questionnaire was developed using multiple item method and each item was measured based on a five-point Likert scale ranging from “1=strongly disagree” to “5=strongly agree”. In order to measure the constructs, pretested items were adopted from previous literature. The questionnaire was pre-tested using a convenience sample of 30 customers who had bought brand rice in Yunnan province, China. After the pilot test, a self-administered survey was conducted via online in Yunnan. Since this research mainly focuses on consumers who have purchased brand rice within the past one year, a screening item was set in the questionnaire to make sure all respondents have buying experience. Because the size of the target population of this study is difficult to define in actual size, the formula of Cochran (1977) will be chosen for calculating the sample size. With the 95% of confidence level is expected, the actual sample size was 385.

Finally, 492 questionnaires were returned. After removing all the responses with invalid answers and data cleaning, 420 of these were deemed usable. For the purpose of data analysis, Stepwise and Hierarchical Regression are performed to test direct and indirect hypotheses in this study which are the factors affecting rice brand equity with perceived value as a mediator variable. Firstly, we used stepwise to test the direct influence factors of rice brand equity. Stepwise regression is the step-by-step iterative construction of a regression model that involves the selection of independent variables to be used in a final model. It involves adding or removing potential explanatory variables in succession and testing for statistical significance

after each iteration (Vlachopoulou, Ferryman, Zhou & Tong, 2013). After that, we used Hierarchical Regression to test mediating effect of perceived value. The hierarchical regression is a special form of a multiple linear regression analysis in which more variables are added to the model in separate steps. This is often done to statistically “control” for certain variables, to test whether adding variables significantly improves a model’s ability to predict the criterion variable and/or to investigate a moderating effect of a variable (Darlington, 1968).

**Table 1:** Adoption of Questionnaire Measurements

| Construct            | Scale Items   | Source             | Cronbach $\alpha$ |
|----------------------|---|--------------------|-------------------|
| Retailer Image       | The quality of rice sold in this retail store is reliable                                     | Shen (2010)        | 0.850             |
|                      | The service attitude of the staff in this retail store is good                                |                    |                   |
|                      | The environment of the retail store is comfortable and the rice is well arranged              |                    |                   |
|                      | The retail store provides free delivery   |                    |                   |
| Distribution Density | There are more retail stores selling this brand of rice than other competing brands           | (Yoo et al., 2000) | 0.866             |
|                      | This brand of rice is sold in more retail stores than its competitors                         |                    |                   |
|                      | This brand of rice is sold through as many retail stores as possible                          |                    |                   |
| Product Factor       | I value the nutrition and health of rice  | (Yoo et al., 2000) | 0.856             |
|                      | I value the taste and flavor of rice  |                    |                   |
|                      | I value the reputation of rice brand  |                    |                   |
| Promotion Factor     | I value the cost of rice  | (Yoo et al., 2000) | 0.837             |
|                      | I value the price promotion of rice (such as price discount, full reduction activities)       |                    |                   |
|                      | I value non-price promotions for rice (such as coupons and gift-giving)                       |                    |                   |
| Perceived Value      | The rice price of this brand is reasonable  | Zhen (2012)        | 0.916             |
|                      | This brand of rice is economical  |                    |                   |
|                      | The price of this brand matches its quality   |                    | 0.859             |
|                      | The quality of rice of this brand is better than that of similar products at the same price   |                    |                   |
|                      | Buying this brand of rice could help me save time and the cost                                |                    |                   |
|                      | Compared with competing brands, this brand of rice could help me avoid some unnecessary risks |                    |                   |
| Rice Brand Awareness | I could identify this brand among many rice brands  | (Yoo et al., 2000) | 0.874             |
|                      | I could think of some characteristics of this rice brand quickly                              |                    |                   |
|                      | I could quickly recall the name, logo or symbol of the rice brand                             |                    |                   |

|                                 |   |                      |       |
|---------------------------------|---|----------------------|-------|
| Perceived Quality of Rice Brand | This brand of rice is of good quality   | (Yoo et al., 2000)   | 0.874 |
|                                 | The quality of this brand is consistently high  |                      |       |
|                                 | The quality of this rice brand represents the high standard in the rice industry            |                      |       |
| Brand Image of Rice Enterprises | The company that produces and operates this brand of rice has a high technical strength     | Cui and Zhang (2012) | 0.874 |
|                                 | The company that produces and operates this brand of rice has a large scale of operation    |                      |       |
|                                 | The company that produces and operates this brand of rice has a high status in the industry |                      |       |
|                                 | The company that produces and operates this brand of rice has a good social reputation      |                      |       |
| Rice Brand Loyalty              | This rice brand is my first choice when buying  | (Yoo et al., 2000)   | 0.864 |
|                                 | As long as the store has this brand of rice, I will not buy other similar products          |                      |       |
|                                 | I will continue to buy this brand of rice   |                      |       |
|                                 | I will recommend this brand of rice to my relatives and friends                             |                      |       |

#### 4. Results

##### *-Reliability and Validity Analysis*

It can be seen from Table 1 that the coefficient value Alpha of each scale is 0.850, 0.866, 0.856, 0.837 and 0.916 respectively for retailer image, distribution density, product factor, promotion factor and perceived value. The coefficient Alpha of rice brand awareness, rice brand perceived quality, rice enterprise brand image and rice brand loyalty are 0.859, 0.874, 0.874 and 0.864 respectively, and the coefficient of each dimension of the overall scale of influencing factors and rice brand equity was 0.944, which are all greater than 0.7, indicating that the scale has high reliability (Zhang, 2011). Through factor analysis of influencing factors and components of rice brand equity, the KMO of influencing factors and each dimension of rice brand equity were 0.904 and 0.901, respectively, with a significance of 0.000. The explanatory rates of factor variance extracted with eigenvalues greater than 1 were 73.835% and 75.049%, respectively, which were consistent with the dimension division in the original scale. In addition, the factor loading coefficient after rotation of the influencing factors and rice brand equity in each dimension is greater than 0.7, indicating that the scale has a high validity.

##### *-Descriptive Analysis*

The results found that majority of the respondents who bought branded rice were females (55.0%), age group is between 36 and 55 years old, are enterprises' employees with bachelor's degrees. Their monthly family income is between 5,001RMB and 8,000RMB (30.6%). From the results, the brand rice consumers have the high education and high incomes. The results also reveal that 71.2 percent of them made purchase via offline channels. This indicates that due to the particularity of rice, consumers are more willing to buy tangible products with guaranteed quality in offline channels. Wuchang rice series ranked the first place (37.3%),

followed by Golden Arowana (17.2%), Beidahuang (14.0%), and Fook Lam Moon (10.0%) indicating that respondent Yunnan rice consumers tend to buy rice with high brand awareness.

### ***-Hypothesis Tests***

Table 2 presents the results from analysis of variance (ANOVA) of influence factors on rice brand equity that the relationships between rice brand awareness, perceived quality of rice brand, the brand image of rice enterprises, and rice brand loyalty are at significant level 0.000, indicating that each model has significance. The Table 3 shows the stepwise regression analysis of direct influence factors of rice brand equity. The predictors variance inflation factor (VIF) was not more than 5, indicating no multicollinearity. In Table 3, we found that under the significance level of 0.000, the retailer image ( $\beta = 0.254$ ,  $p < 0.001$ ), distribution density ( $\beta = 0.127$ ,  $p < 0.001$ ), product factor ( $\beta = 0.263$ ,  $p < 0.001$ ), promotion factor ( $\beta = 0.189$ ,  $p < 0.001$ ) significantly influence on rice brand awareness, which suggests that retailers image, distribution density, product, promotion these four variables have positive influence on brand awareness for rice, supporting hypothesis H1a, H2a, H3a, H4a. With regard to perceived quality of rice brand, under the significance level of 0.000, the retailer image ( $\beta = 0.198$ ,  $p < 0.001$ ), distribution density ( $\beta = 0.199$ ,  $p < 0.001$ ), product factor ( $\beta = 0.344$ ,  $p < 0.001$ ), promotion factor ( $\beta = 0.148$ ,  $p < 0.001$ ) significantly influence on rice brand awareness, which suggests that retailers image, distribution density, product, promotion all have positive influence on perceived quality of rice brand.

Thus, H1b, H2b, H3b and H4b were supported. Concerning the brand image of rice enterprises, we find that the retailer image ( $\beta = 0.254$ ,  $p < 0.001$ ), distribution density ( $\beta = 0.127$ ,  $p < 0.001$ ), product factor ( $\beta = 0.263$ ,  $p < 0.001$ ) have a positive influence on the brand image of rice enterprises, which means that H1c, H2c, H3c were fully supported. However, the promotion factor had no effect on the brand image of rice enterprises, which means that H4c was rejected. In terms of rice brand loyalty, the results assert that the retailer image ( $\beta = 0.254$ ,  $p < 0.001$ ), product factor ( $\beta = 0.263$ ,  $p < 0.001$ ) and promotion factor ( $\beta = 0.148$ ,  $p < 0.001$ ) had a significant positive effect on rice brand loyalty. Hence, H1d, H3d and H4d were supported. However, when H2d is examined, it is not found that distribution density had any impact on rice brand loyalty. Thus, H2d was rejected.

**Table 2:** Analysis of Variance (ANOVA) of Direct Influence Factors of Rice Brand Equity

| Model                           | Sum of Squares | df | Mean Square | F       | Sig.     |
|---------------------------------|----------------|----|-------------|---------|----------|
| Rice Brand Awareness            | 171.737        | 4  | 42.934      | 86.928  | 0.000*** |
| Perceived Quality of Rice Brand | 177.022        | 4  | 44.255      | 109.598 | 0.000*** |
| Brand Image of Rice Enterprises | 109.252        | 3  | 36.417      | 88.476  | 0.000*** |
| Rice Brand Loyalty              | 98.546         | 3  | 32.849      | 65.938  | 0.000*** |

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

**Table 3:** Stepwise Regression Analysis of Direct Influence Factors of Rice Brand Equity

| Model                           |                      | Unstandardized Coefficients |            | Standardized Coefficients | t-value | Sig.     | VIF   |
|---------------------------------|----------------------|-----------------------------|------------|---------------------------|---------|----------|-------|
|                                 |                      | B                           | Std. Error | Beta                      |         |          |       |
| Rice Brand Awareness            | (Constant)           | 0.498                       | 0.171      |                           | 2.915   | 0.004    | 1.602 |
|                                 | Retailer Image       | 0.265                       | 0.037      | 0.254                     | 7.145   | 0.000*** | 1.407 |
|                                 | Product Factor       | 0.264                       | 0.035      | 0.263                     | 7.617   | 0.000*** | 1.268 |
|                                 | Promotion Factor     | 0.183                       | 0.034      | 0.189                     | 5.455   | 0.141    | 1.277 |
|                                 | Distribution Density | 0.127                       | 0.036      | 0.127                     | 3.569   | 0.000*** | 1.367 |
| Perceived Quality of Rice Brand | (Constant)           | 0.704                       | 0.154      |                           | 4.557   | 0.000    | 1.302 |
|                                 | Product Factor       | 0.327                       | 0.031      | 0.344                     | 10.416  | 0.000*** | 1.263 |
|                                 | Distribution Density | 0.187                       | 0.032      | 0.199                     | 5.837   | 0.000*** | 1.274 |
|                                 | Retailer Image       | 0.195                       | 0.033      | 0.198                     | 5.835   | 0.000*** | 1.359 |
|                                 | Promotion Factor     | 0.136                       | 0.030      | 0.148                     | 4.467   | 0.000*** | 1.097 |
| Brand Image of Rice Enterprises | (Constant)           | 1.716                       | 0.150      |                           | 11.432  | 0.000    | 1.258 |
|                                 | Distribution Density | 0.398                       | 0.032      | 0.455                     | 12.572  | 0.000*** | 1.326 |
|                                 | Retailer Image       | 0.099                       | 0.033      | 0.108                     | 2.949   | 0.003**  | 1.407 |
|                                 | Product Factor       | 0.068                       | 0.031      | 0.077                     | 2.179   | 0.030*   | 1.147 |
| Rice Brand Loyalty              | (Constant)           | 1.641                       | 0.165      |                           | 9.927   | 0.000    | 1.302 |
|                                 | Product Factor       | 0.371                       | 0.035      | 0.397                     | 10.730  | 0.000*** | 1.111 |
|                                 | Retailer Image       | 0.109                       | 0.036      | 0.113                     | 3.059   | 0.002**  | 1.073 |
|                                 | Promotion Factor     | 0.073                       | 0.033      | 0.081                     | 2.209   | 0.028*   | 1.251 |

\*p&lt;0.05, \*\*p&lt;0.01, \*\*\*p&lt;0.001

***-Mediating Effect Testing of Perceived Value***

In Table 4, when retailer image, distribution density, product factor and promotion factor are added into the model, the F value is 106.177 and significant. The regression coefficients of the independent variables were 0.279, 0.116, 0.238 and 0.163 respectively, which were all significant, indicating that the influencing factors had a significant impact on the perceived value. Therefore, the mediating effect test of perceived value can be conducted.

**Table 4:** Regression Analysis Results of Direct Influence Factors and Perceived Value

| Variable                            | Model 1 |       |          |
|-------------------------------------|---------|-------|----------|
| Independent Variable                | Beta    | t     | p        |
| Retailer Image                      | 0.279   | 8.760 | 0.000*** |
| Distribution Density                | 0.116   | 3.799 | 0.000*** |
| Product                             | 0.238   | 7.960 | 0.000*** |
| Promotion                           | 0.163   | 5.638 | 0.000*** |
| R <sup>2</sup>                      | 0.392   |       |          |
| Adjusted R <sup>2</sup>             | 0.388   |       |          |
| $\Delta R^2$                        | 0.392   |       |          |
| F                                   | 106.177 |       |          |
| Dependent Variable: Perceived Value |         |       |          |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

#### ***-Test the Mediating Effect of Perceived Value on Influencing Factors and Rice Brand Awareness***

From Table 5 in Model 1, F value is 37.963 and significant, indicating that the model is statistically significant. Adjusted R<sup>2</sup> was 0.100, indicating that the control variable could explain the 10.0% variation of rice brand awareness except the effect of data volume. In Model 2,  $\Delta R^2$  is 0.261, indicating that after excluding the control variables, retailer image, distribution density, product factor and promotion factor have a total explanatory of 26.1%, reaching the significance (F =67.527, p < 0.01). Their regression coefficients were 0.245, 0.112, 0.244 and 0.171 respectively, which showed significant influence on them, indicating a positive correlation with the dependent variable.

In Model 3, the mediating variable of perceived value is added, and the corresponding F value of the model is significant, which makes the model meaningful.  $\Delta R^2$  was 0.076 (p < 0.01), indicating a 7.6% increase in overall explanatory variation compared to the Model 2. When the perceptive value is added, the coefficients of the four independent variables decrease from 0.245, 0.112, 0.244 and 0.171 to 0.138, 0.070, 0.154 and 0.109, respectively. The influence coefficient of perceptive value on the dependent variable is 0.399, and the coefficients corresponding to the above variables are all significant. It indicates that after the addition of perceptive value, the independent variable's influence on the dependent variable is weakened, that is, the perceptive value plays a partial mediating role between the retailer image, distribution density, product factor, promotion factor and the brand awareness of rice. Hence, H5 is accepted.

**Table 5:** Hierarchical Regression Analysis Results of Perceived Value and Rice Brand Awareness

| Variable                                 | Model 1 |       |         | Model 2 |       |         | Model 3 |       |         |
|--|---------|-------|---------|---------|-------|---------|---------|-------|---------|
|  | Beta    | t     | p       | Beta    | t     | p       | Beta    | t     | p       |
| <b>Control</b>                           |         |       |         |         |       |         |         |       |         |
| age                                      | .222    | 8.258 | .000*** | .095    | 3.957 | .000*** | .069    | 3.055 | .002**  |
| education                                | .089    | 2.600 | .010*   | .057    | 1.975 | .049*   | .053    | 1.963 | .050*   |
| <b>Independent</b>                       |         |       |         |         |       |         |         |       |         |
| Retailer Image                           |         |       |         | .245    | 6.640 | .000*** | .138    | 3.788 | .000*** |
| Distribution Density                     |         |       |         | .112    | 3.167 | .002**  | .070    | 2.098 | .036*   |
| Product                                  |         |       |         | .244    | 7.074 | .000*** | .154    | 4.560 | .000*** |
| Promotion                                |         |       |         | .171    | 5.145 | .000*** | .109    | 3.413 | .001**  |
| <b>Mediator</b>                          |         |       |         |         |       |         |         |       |         |
| Perceived Value                          |         |       |         |         |       |         | .399    | 9.450 | .000*** |
| R <sup>2</sup>                           | .103    |       |         | .364    |       |         | .441    |       |         |
| Adjusted R <sup>2</sup>                  | .100    |       |         | .359    |       |         | .435    |       |         |
| ΔR <sup>2</sup>                          | .103    |       |         | .261    |       |         | .076    |       |         |
| F  | 37.963  |       |         | 62.767  |       |         | 73.791  |       |         |
| ΔF                                       | 37.963  |       |         | 67.527  |       |         | 89.312  |       |         |
| Dependent Variable: Rice Brand Awareness |         |       |         |         |       |         |         |       |         |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

### ***-Mediating Effect of Perceived Value on Influencing Factors and Perceived Quality of Rice Brand***

From Table 6 in Model 1, F value is 158.992 and significant, indicating that the model is statistically significant. Adjusted R<sup>2</sup> was 0.323, indicating that the control variable could explain the 32.3% variation of rice brand awareness except the effect of data volume. In Model 2, ΔR<sup>2</sup> is 0.222, indicating that after excluding the control variables, retailer image, distribution density, product factor and promotion factor have a total explanatory of 22.2%, reaching the significance (F =80.723, p < 0.01). Their regression coefficients were 0.145, 0.136, 0.277, 0.105, respectively, which showed significant influence on them, indicating a positive correlation with the dependent variable.

In Model 3, the mediating variable of perceived value is added, and the corresponding F value of the model is significant, which makes the model meaningful. ΔR<sup>2</sup> was 0.040 (p < 0.01), indicating a 4.0% increase in overall explanatory variation compared to the Model 2. When the perceptive value is added, the coefficients of the four independent variables decrease from 0.145, 0.136, 0.277 and 0.105 to 0.072, 0.107, 0.215 and 0.062, respectively. The influence coefficient of perceptive value on the dependent variable is 0.274, and the coefficients corresponding to the above variables are all significant. It indicates that after the addition of

perceptive value, the independent variable's influence on the dependent variable is weakened, that is, the perceptive value plays a partial mediating role between the retailer image, distribution density, product factor, promotion factor and perceived quality of rice brand. Hence, H6 is accepted.

**Table 6:** Hierarchical Regression Analysis Results of Perceived Value and Perceived Quality of Rice Brand

| Variable  | Model 1 |        |         | Model 2 |        |         | Model 3 |        |         |
|---|---------|--------|---------|---------|--------|---------|---------|--------|---------|
|   | Beta    | t      | p       | Beta    | t      | p       | Beta    | t      | p       |
| <b>Control</b>                                      |         |        |         |         |        |         |         |        |         |
| age   | .389    | 17.707 | .000*** | .279    | 14.610 | .000*** | .262    | 14.230 | .000*** |
| education   | .048    | 1.726  | .085    | .023    | 0.983  | .326    | .020    | 0.910  | .363    |
| <b>Independent</b>                                  |         |        |         |         |        |         |         |        |         |
| Retailer Image                                      |         |        |         | .145    | 4.947  | .000*** | .072    | 2.437  | .015*   |
| Distribution Density                                |         |        |         | .136    | 4.829  | .000*** | .107    | 3.956  | .000*** |
| Product   |         |        |         | .277    | 10.046 | .000*** | .215    | 7.830  | .000*** |
| Promotion   |         |        |         | .105    | 3.966  | .000*** | .062    | 2.411  | .016*   |
| <b>Mediator</b>                                     |         |        |         |         |        |         |         |        |         |
| Perceived Value                                     |         |        |         |         |        |         | .274    | 8.006  | .000*** |
| R <sup>2</sup>                                      | .325    |        |         | .547    |        |         | .588    |        |         |
| Adjusted R <sup>2</sup>                             | .323    |        |         | .543    |        |         | .583    |        |         |
| $\Delta R^2$  | .325    |        |         | .222    |        |         | .040    |        |         |
| F   | 158.992 |        |         | 132.380 |        |         | 133.521 |        |         |
| $\Delta F$  | 158.992 |        |         | 80.723  |        |         | 64.092  |        |         |
| Dependent Variable: Perceived Quality of Rice Brand |         |        |         |         |        |         |         |        |         |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

***-Effect of Perceived Value on Influencing Factors and The Brand Image of Rice Enterprises***

From Table 7 in Model 1, F value is 28.246 and significant, indicating that the model is statistically significant. Adjusted R<sup>2</sup> was 0.076, indicating that the control variable could explain the 7.6% variation of rice brand awareness except the effect of data volume. In Model 2,  $\Delta R^2$  is 0.228, indicating that after excluding the control variables, retailer image, distribution density, product factor and promotion factor have a total explanatory of 22.8%, reaching the significance (F =54.023, p < 0.01). Their regression coefficients were 0.074, 0.370, 0.041, 0.045, respectively, which showed only retailer image and distribution density had significant influence on rice brand image, indicating that retailer image and distribution density were positively correlated with the dependent variable. In Model 3, the mediating variable of perceived value is added, and the corresponding F value of the model is significant, which makes the model meaningful.  $\Delta R^2$  was 0.111 (p < 0.01), indicating a 4.0% increase in overall explanatory variation compared to the Model 2. When the perceptive value is added, the coefficients of the four independent variables decrease from 0.074, 0.370, 0.041 and 0.045 to -

0.039, 0.325, -0.054 and -0.020 respectively. The influence coefficient of perceptive value on the dependent variable is 0.421, and only the coefficient corresponding to distribution density and perceived value is significant. It indicates that after the addition of perceptive value, the influence of distribution density on the dependent variable is weakened, that is, the perceptive value plays a partial mediating role between the distribution density and the brand image of rice enterprises. Hence, H7 is accepted.

**Table 7:** Hierarchical Regression Analysis Results of Perceived Value and Brand Image of Rice Enterprises

| Variable  | Model 1 |       |         | Model 2 |        |         | Model 3 |        |             |
|---|---------|-------|---------|---------|--------|---------|---------|--------|-------------|
|   | Beta    | t     | p       | Beta    | t      | p       | Beta    | t      | p           |
| <b>Control</b>                                      |         |       |         |         |        |         |         |        |             |
| age   | .178    | 7.464 | .000*** | .085    | 3.890  | .000*** | .058    | 2.875  | .004**      |
| education   | .022    | 0.719 | .472    | .017    | 0.659  | .510    | .013    | 0.552  | .581        |
| <b>Independent</b>                                  |         |       |         |         |        |         |         |        |             |
| Retailer Image                                      |         |       |         | .074    | 2.195  | .029*   | -.039   | -1.194 | .233        |
| Distribution Density                                |         |       |         | .370    | 11.430 | .000*** | .325    | 10.879 | .000**<br>* |
| Product   |         |       |         | .041    | 1.306  | .192    | -.054   | -1.787 | .074        |
| Promotion   |         |       |         | .045    | 1.495  | .135    | .020    | -0.709 | .479        |
| <b>Mediator</b>                                     |         |       |         |         |        |         |         |        |             |
| Perceived Value                                     |         |       |         |         |        |         | .421    | 11.169 | .000**<br>* |
| R <sup>2</sup>                                      | .079    |       |         | .307    |        |         | .418    |        |             |
| Adjusted R <sup>2</sup>                             | .076    |       |         | .300    |        |         | .411    |        |             |
| ΔR <sup>2</sup>                                     | .079    |       |         | .228    |        |         | .111    |        |             |
| F   | 28.246  |       |         | 48.452  |        |         | 67.173  |        |             |
| ΔF  | 28.246  |       |         | 54.023  |        |         | 124.744 |        |             |
| Dependent Variable: Brand Image of Rice Enterprises |         |       |         |         |        |         |         |        |             |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

***-Effect of Perceived Value on Influencing Factors and Rice Brand Loyalty***

From Table 8 in Model 1, F value is 39.400 and significant, indicating that the model is statistically significant. Adjusted R<sup>2</sup> was 0.104 indicating that the control variable could explain the 10.4% variation of rice brand awareness except the effect of data volume. In Model 2, ΔR<sup>2</sup> is 0.165, indicating that after excluding the control variables, retailer image, distribution density, product factor and promotion factor have a total explanatory of 16.5%, reaching the significance (F =37.078, p < 0.01). Their regression coefficients were 0.071, 0.024, 0.339, 0.048, respectively, which displayed only product factor has significant influence on brand loyalty, indicating that product factor is positively correlated with dependent variables. In Model 3, the mediating variable of perceived value is added, and the corresponding F value of the model is significant, which makes the model meaningful. ΔR<sup>2</sup> was 0.104 (p < 0.01), indicating a 10.4% increase in overall explanatory variation compared to the Model 2. When the perceptive value is added, the coefficients of the four independent variables decrease

from 0.071, 0.024, 0.339, and 0.048 to -0.045, -0.021, 0.241 and -0.020, respectively. The influence coefficient of perceptive value on the dependent variable is 0.432, and only the coefficient corresponding to product factor and perceived value is significant. It indicates that after the addition of perceptive value, the degree of influence of product factor on the dependent variable is weakened. In other words, perceptive value plays a partial mediating role between product factors and rice brand loyalty. Hence, H8 is accepted.

**Table 8:** Hierarchical Regression Analysis Results of Perceived Value and Rice Brand Loyalty

| Variable                               | Model 1 |       |         | Model 2 |       |         | Model 3 |            |             |
|--|---------|-------|---------|---------|-------|---------|---------|------------|-------------|
|  | Beta    | t     | p       | Beta    | t     | p       | Beta    | t          | p           |
| <b>Control</b>                         |         |       |         |         |       |         |         |            |             |
| age                                    | .202    | 8.133 | .000*** | .123    | 5.157 | .000*** | .095    | 4.277      | .000**<br>* |
| education                              | .107    | 3.381 | .001**  | .083    | 2.878 | .004**  | .078    | 2.950      | .003**      |
| <b>Independent</b>                     |         |       |         |         |       |         |         |            |             |
| Retailer Image                         |         |       |         | .071    | 1.934 | .054    | -.045   | -1.260     | .208        |
| Distribution Density                   |         |       |         | .024*   | 0.685 | .493    | -.021   | -0.644     | .520        |
| Product                                |         |       |         | .339    | 9.871 | .000*** | .241    | 7.270      | .000**<br>* |
| Promotion                              |         |       |         | .048*   | 1.449 | .148    | -.020   | -0.625     | .532        |
| <b>Mediator</b>                        |         |       |         |         |       |         |         |            |             |
| Perceived Value                        |         |       |         |         |       |         | .432    | 10.44<br>7 | .000**<br>* |
| R <sup>2</sup>                         | .107    |       |         | .271    |       |         | .375    |            |             |
| Adjusted R <sup>2</sup>                | .104    |       |         | .264    |       |         | .368    |            |             |
| ΔR <sup>2</sup>                        | .107    |       |         | .165    |       |         | .104    |            |             |
| F                                      | 39.400  |       |         | 40.719  |       |         | 56.240  |            |             |
| ΔF                                     | 39.400  |       |         | 37.078  |       |         | 109.149 |            |             |
| Dependent Variable: Rice Brand Loyalty |         |       |         |         |       |         |         |            |             |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

## 5. Discussion and Conclusions

Through empirical analysis, the research hypothesis and research model of influencing factors of rice brand equity are tested and verified. According to the results of stepwise regression analysis, retailer image, distribution density, product factors and promotion factors have different direct influences on each dimension of rice brand equity. First, retailer's image has significant positive influence on brand awareness, perceived quality, brand image of rice enterprise and rice brand loyalty. That is, the better the retailer image is, the higher the four-dimensional evaluation of rice brand equity is. This shows that retailers, as sales channels of rice, are the closest contact with consumers. Rice enterprises cooperate with the retailers with good image, such as good reputation, good service attitude, etc., this would help to obtain consumers' recognition and perception of the rice brand and the improvement of rice brand equity.

Secondly, distribution density had a significant positive effect on brand awareness, perceived quality of rice brand and brand image of rice enterprises. It indicates that the stronger the distribution density of rice brand, the better the brand awareness, perceived quality of rice brand and brand image of rice enterprises. Distribution density, as a sales strategy implemented by enterprises, is an important way and means to increase consumer choice. Enterprises producing and operating rice brands can strengthen the distribution density of products, so that consumers could choose and buy at any time and any place, so as to enhance the popularity and perception of rice brands, and promote the promotion of rice brand equity.

Thirdly, product factor also has significant positive influence on rice brand awareness, rice brand perceived quality, rice enterprise brand image and rice brand loyalty. That is, the better the products sold by enterprises producing and operating rice brands, the easier it is to improve rice brand awareness and corporate brand image, enhance perceived quality and brand loyalty. Only when consumers have a good understanding of the rice product and related factors, they will make positive judgments and evaluations on the brand leading to the improvement of rice brand equity.

Fourthly, promotion factor had a significant positive influence on the brand awareness, perceived quality, and brand loyalty of rice as well. Production and rice brand enterprises may through the formulation reasonable sales price and specific price promotion strategy to stimulate consumers to purchase high quality products with good price, which is conducive to increase consumers' perception of rice brand quality, promote the increase of brand awareness and loyalty, thus promoting the ascension of rice brand equity. In addition, according to the results of hierarchical regression analysis, perceived value has a partial mediating effect on retailer image, distribution density, product factors, promotion factors and rice brand equity. First, retailer image, distribution density, product and promotion could further affect the brand awareness and perceived quality of rice by influencing the perceived value. This display that, in the process of influencing the perceived value, rice enterprises can promote consumers' cognition of the brand through marketing activities in product, price, channel, promotion and other aspects.

After consumers' inner judgment and weighing, the popularity and perceived quality of rice brand will be virtually improved and increased. Besides, distribution density could further affect the brand image of rice enterprises by affecting the perceived value, which means that in the process of influencing the perceived value, enterprises producing and operating rice brands can expand the customer group area of rice by strengthening the distribution density of products, which is conducive to reducing the cost of consumers' inner perception of time and energy, so as to deepen the good impression of rice enterprises. Finally, product factor also further influences the brand loyalty of rice by affecting the perceived value. In the process of influencing perceived value, enterprises that produce and manage rice brands can ensure product quality and enable consumers to buy healthy rice with high nutrition and quality, which will help increase consumers' satisfaction and thus enhance their loyalty to rice brands.

#### *-Implication*

The results from this study carry several theoretical and practical implications. In terms of theoretical contribution, it is conducive to enriching the theoretical system of rice brand equity. The study also offers valuable practical insights for the rice brand managers and marketers.

First, the results reveal that retailer image, distribution density, product, and promotion have a significant positive influence on rice brand equity at different degrees. The results also show a partial mediating effect between the four influencing factors and the rice brand equity. To achieve the effective enhancement of brand equity, the Chinese rice enterprises need to consider consumers' preferred marketing activities and consumers' inner differentiated that response to it. Therefore, the enterprises should take consumer's demand and preferences as the core by observing the consumers' behavior characteristics when buying branded rice using in development of marketing strategies in line with the consumers' inner cognition. The enterprises also are required to target their consumer groups accurately and provide efficient products and services for the groups to ensure brand satisfaction and loyalty.

Furthermore, the rice enterprises should strengthen their communication with their target consumers through regular visit and market survey, understanding their demands based on preferences to make the differentiation of products and sales plan to satisfy the interests of the consumers and to increase the perceptions of quality of rice brands. Finally, rice enterprises should also strengthen the brand of rice publicity and promotion through sales personnel, price, and non-price promotions such as discounts, coupons, and complimentary add-ons, charity, and other social public welfare activities.

#### *-Limitation and Future Study*

There are some research limitations in this study. First, influencing factors could be increased and changed. The influencing factors of rice brand equity selected in this research mainly include external factors such as retailer image, distribution density, product factor, promotion factor and perceived value. In the future, more factors, such as tangible display, customer participation and service attitude, should be included to influence rice brand equity. In addition, moderator factors such as source of origin can also be considered as the moderator variables of rice brand equity. Finally, the rice brand equity studied in this paper is a macroscopic scope without specifying a specific brand or enterprise. In future studies, the research could focus on the enterprises or local brands comparing to international brands.

#### **Reference**

- Aaker D A. (1991). *Managing brand equity: capitalizing on the value of a brand name*. New York: The Free Press.
- Baldinger, A. L. & Rubinson, J. R. (1996). Brand loyalty: the link between attitude and behavior. *Journal of Advertising Research*. 36(6), 22-34.
- Biel, A. L. (1992). How brand image drives brand equity. *Journal of Advertising Research*. 32(6), 6-12.
- Chakraborty U. (2019). The impact of source credible online reviews on purchase intention. *Journal of Research in Interactive Marketing*. 13(2),142-161.
- Cochran, W.G. (1977). *Sampling Techniques, 3rd Edition*. New Jersey: Wiley.
- Darlington, R. B. (1968). Multiple regression in psychological research and practice. *Psychological Bulletin*, Vol.69, 161-182.
- Dodds, W. B., Kent, B. M., & Dhruv, G. (1991). Effects of price, brand, and store information on buyers' product evaluation. *Journal of Marketing Research*. 28(8), 307-319.
- Dong, Y., Mu, Y.Y., & Hou, L.L. (2013). Research on the formation of rice retail price and its influencing factors -- Based on the investigation and analysis of rice quality

- characteristics and consumption habits in Harbin Market. *Journal of Price Theory and Practice*. 13(11). 57-58.
- Fan, X. C. (2000). Analysis of brand equity and its evaluation system. *Nankai Management Review*. 7(1). 9-15.
- Gong, Y.P. & Chen, F.L. (2014). Theoretical evolution and practical Exploration of brand value evaluation. *Journal of Research*. 14(3). 24-30.
- Hamza, S. K. (2011). The influence of brand loyalty on cosmetics buying behavior of UAE female consumers. *The International Journal of Marketing Studies*. Vol. (2),123-133.
- Hu, H. & Zhang, M.W. (2014). Research on price promotion discount amplitude and brand property department. *Business Research*. 7. 113-120.
- Keller, K.L. (1993). Conceptualizing measuring and managing customer-based brand equity. *Journal of Marketing*, 1, 1-22.
- Li, L. (2010). Channel strategy on the impact of quality brand real evidence research. *Journal of Xi 'an University of Posts and Telecommunications*. 15(2),81-84.
- Lu, H. L., Li, G. H. & Huang, L. (2015). Consumer Knowledge and component brand Spillover effects - Based on brand functional perspective. *Journal of Shanxi University of Finance and Economics*. 37(8), 42-51.
- Miller, S. & Berry, L. (1998). Brand salience versus brand image: two theories of advertising effectiveness. *The Journal of Advertising Research*. 15. 77-82.
- Pettijohn, L. S., Mellott, D. W., & Pettijohn, C. E. (2010). The relationship between retailer image and brand image. *Journal of Psychology & Marketing*. 9(4),311-328.
- Shan, J. & Fan, X.J. (2016). Retailer image, category characteristics and private brand purchase intention. *Journal of Management Review*. 28(5).85-95.
- Shang, P.F. & Li, T.K. (2018). The construction and demonstration of the influencing factors model of customer brand loyalty. *Journal of Statistics and Decision*. 34(11). 181-185.
- Vlachopoulou, M., Ferryman, T., Zhou, N. & Tong, J.Z. (2013). A stepwise regression method for forecasting net interchange schedule. 2013 IEEE Power & Energy Society General Meeting. Retrieved from <https://doi.org/10.1109/pesmg.2013.6672763>
- Wang, X.H. & Zhang, Q.L. (2015). Perceived impact of service quality on brand equity of multi-channel retailers. *Journal of Research of Financial Issues*. 15(4). 97-105.
- Wang<sup>1</sup>, J.J., Wang<sup>2</sup>, L. Y. & Wang<sup>3</sup>, M.M. (2019). Perceived value and Consumers' Purchase Intention: Mediating and regulating effect test. *Journal of Management Engineering*. 33(4).80-87.
- Yoo, B., Donthu, N., & Lee, S. (2000). An examination of selected marketing mix elements and brand equity. *Journal of the Academy of Marketing Science*. 28(2), 195-211.
- Yu, C. L. & Zhao, P. (2003). Concept analysis of brand property and its measurement. *Nankai Management Review*. 10(1). 13-25.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *Journal of Marketing*. 52(3), 2-22.
- Zhang, Y. X. (2011). Research on the model construction and practical certification of consumer products. *Journal of Reform and Strategy*. 27(10). 56-59.
- Zhao, X. Z. & Song, Y.Y. (2016). Full reduction to promote sales and full delivery to promote sales brand loyalty and sincerity. *Journal of Enterprise Economic*. 1. 20-24
- Zhen, H.M. (2018.10.27). *China Rice Industry Report 2018*. Grain and Oil Market Newspaper.

- Zhen, H.M. (2019.10.26). *China Rice Industry Report 2019*. Grain and Oil Market Newspaper.
- Zhen, W. Q. (2012). *Research on the Influence mechanism of marketing Strategy on brand equity*. Dissertation, Nanjing Forestry University.
- Zhen, W. Q., Hu, G.Z. & Feng, Y. Q. (2014). The Influence of Marketing Strategy on Brand Loyalty: the mediating effect of customer perceived value. *Journal of Economic Survey*. 31(6). 90-95.

# Determinants of Willingness to Study Mathematics and Actual Performance: An Application of the Theory of Planned Behavior

**Anita Causaren**

Department of Mathematics, MSME, Assumption University  
acausaren@au.edu

**Sasima Ratanasut**

Department of Mathematics, MSME, Assumption University  
sasimartn@msme.au.edu

**Augkana TiyaJamorn**

Department of Mathematics, MSME, Assumption University  
angkanatyj@msme.au.edu

**Orasa Pojeakpong**

Department of Mathematics, MSME, Assumption University  
orasapjk@msme.au.edu

## Abstract

The purpose of this quantitative study is to examine in light of the theory of planned behavior how students' attitude toward mathematics affects their willingness to study mathematics and their performance. As was the case in previous studies, student willingness to study mathematics is conceptualized as a predictor of actual performance. The conceptual framework outlines the relationship between student confidence, anxiety, ability, and self-control, on the one hand, and student willingness to study mathematics and actual performance on the other. Data was collected from students enrolled at a private university in Bangkok, Thailand, via a questionnaire. A factor analysis was conducted to generate unidimensional constructs with construct validity and reliability. Multiple regression was used to test the research framework. The results show that student confidence, student anxiety, student ability, and student self-control influence student willingness to study mathematics, which in turn affect students' actual performance in mathematics. The results could be utilized to reinforce student performance in mathematics and create an interesting mathematics class experience and be applied to similar courses that generate high student anxiety.

**Keywords:** Theory of Planned Behavior, Actual Performance, Willingness to Study Mathematics, Student Attitude, Perceived Behavioral Control

## 1. Introduction

Studying student performance is crucial. For one thing, understanding the behavior causing students to perform poorly or strongly in a particular course helps to devise remedial measures. For another, it is a key indicator of the efforts by learning institutions to generate high quality graduates who will be tomorrow's talented leaders and competent employees (Chionh & Fraser, 2009). Previous studies on student performance essentially focused on gender difference (Marks, 2008), teacher's education and teaching style (Wentzel, 2002), class

environment (Chionh & Fraser, 2009), socio economic factor and family education background, class schedules, class size (Heinesen, 2010), mathematics text books, homework (Törnroos, 2005), exams systems, extracurricular activities (Bishop, 1998), and technology used in the class (Freeman, et al., 2014). The findings in these studies vary from context to context. Since not all variables are applicable to a particular situation, it is important that formal studies be performed to establish context-specific determinants for sound decision-making.

This study is an attempt to bridge the gap found in previous studies in relation to the theory of planned behavior and actual performance in education. In a nutshell, the theory of planned behavior argues that an individual’s specific behavior is determined by his/her intention to perform (willingness) and that both behavior and intention can be predicted by attitude toward that behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). Specifically, this study takes a theory of planned behavior perspective (Niepel, et al., 2018; Mazana, Montero, & Casmir, 2019) to understand student willingness to study basic mathematics (hereinafter ‘math’ or mathematics) and how student performance can be improved. The course at the root of this study is a course in basic mathematics offered as a non-credit subject.

In order to determine how student performance can be enhanced, this study examines the relationship between the determinants of willingness to study mathematics and actual performance. To achieve this purpose, it develops a conceptual framework that applies the theory of planned behavior and evaluates the framework by using a survey method. More specifically, this study seeks to answer the following research questions:

- (1) What are the factors affecting student willingness to study mathematics and what are their relationship with it?
- (2) How does student willingness to study mathematics affecting student actual performance?

Although it is helpful to study the relationship between student willingness to study mathematics and actual performance, there are not many studies examining the suitability of the application of the theory of planned behavior in the education field, especially in the study of mathematics in the Thai context.

## 2. Literature Review

Figure 1 shows this study’s conceptual framework.

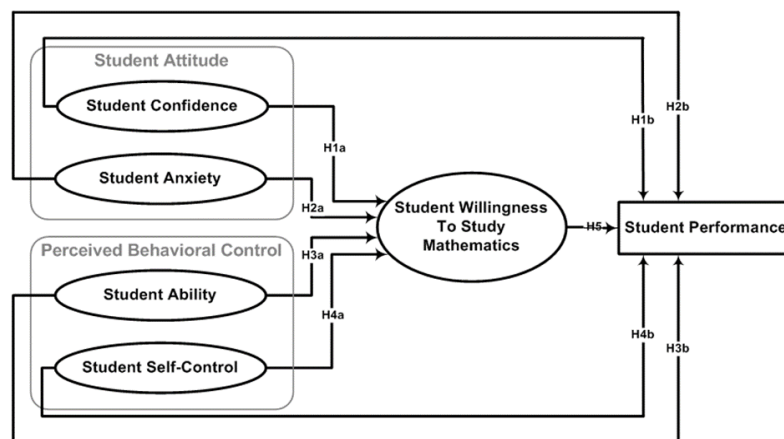


Figure 1: Conceptual Framework (Created by the authors for this study)

Before exploring all the constructs at the core of this study, it is necessary first to briefly discuss the theory of planned behavior and its emphasis on student confidence and student anxiety are indicators of student attitude towards mathematics. As shown in Figure 1, both variables are part of this study's conceptual framework.

### **- *The Theory of Planned Behavior***

The theory of planned behavior is a prominent theory in the field of changing human behavior. As noted above, the theory is based on three independent determinants, which are (i) attitudes toward behavior, (ii) subjective norms, and (iii) perceived behavioral control (Fishbein & Ajzen, 2010). However, because every student in this study is required to study mathematics regardless of his/her personal preferences, the subjective norm determinant will be excluded. This is all the more warranted as there have been precedents for excluding it. Magnusson et al. (2001), for example, excluded subjective norm from their study. Moreover, when included in a model, its explanatory power is surprisingly small as was the case in Sparks and Shepherd's (1992) study. The theory has been widely implemented to the health domain (Liao, Chen, & Yen, 2007; Ranjbarian, Gharibpoor, & Lari, 2012). However, according to Ajzen and Manstead (2007), the theoretical conclusions of the theory can equally be applied to behaviors in other areas such as information systems and education to name a few. Indeed, the theory is well suited to identify factors that could help students increase their willingness to study mathematics. These include student confidence, student anxiety, and perceived behavioral control as well as ability and self-control. As the discussion of these constructs in the next several paragraphs will make it clear, they influence student willingness to study mathematics and actual performance

### **- *Student Attitude Toward Mathematics***

According to Fishbein and Ajzen (2010), attitude is a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object. Aiken (1970) defined attitude toward behaviors as an individual tendency to respond positively or negatively to an attitude object (i.e., a situation, concept, or person). The attitude variable is one of the most potent factors that relates to achievement (Borasi, 1990). A student's attitude and confidence could be difficult to change. This is of no consequence if a student has a good attitude but it could be very problematic when a student's attitude and confidence are negative (Piper, 2008). Once a student becomes anxious, bored, fearful, or simply believe that mathematics is unimportant, he/she will be unwilling to study mathematics (Furner & Berman, 2005). In their studies, Kloosterman, Raymond, and Emenaker (1996) found that 66 percent of student attitude and confidence remained constant from year to year. Students who reported a change in their level of confidence saw only a change from one level to the next and students with low confidence never moved to high confidence and vice versa. The nature of mathematics causes panic and anxiety among students (Zimmerman, 2000). As shown in Figure 2 and in line with the theory of planned behavior, in this study, student attitude toward mathematics is indicated by (i) student confidence and (ii) student anxiety. Both indicators are discussed next.

(i) ***Student Confidence*** – Reyes (1984) defined confidence as an individual perception of self. According to McElmeel (2002), it is a faith or belief in oneself and one's own abilities to succeed. Students' confidence in their ability to solve problems play a significant role in mathematics achievements (Mohd, Mahmood, & Ismail, 2011). Student confidence in mathematics is the ability to succeed in mathematics and the feelings about mathematics (McMullen, 2005). It affects their motivation to learn

mathematics. Mazana et al. (2019) found that students tend to believe that they are not good at mathematics. Students who lack confidence perceive mathematics as difficult, which leads to a poor grades and dislike of mathematics. Simmers, 2011; Burton, 2004). Highly confident students who believe in their mathematical abilities are more likely to overcome the fears of failing (Van der Bergh, 2013). According to Skinner and Belmont (1993), students who are confident and motivated will often select a task at the boundary of their competencies, initiate action when given the chance to do something, become passionate in the application of the work, and perceive positive emotions during the ongoing action such keenness, enjoyment, and hopefulness.

(ii) **Student Anxiety** – Miller and Mitchell (1994) defined mathematics anxiety as a meaningless state of mind that induces fear when focusing on mathematics and affects students' performance negatively and prevent them from learning. It can also be defined as panic, helplessness, paralysis, and mental disorganization that arises among some people when they are required to solve a mathematics problem (Tobias & Weissbrod, 1980). Such anxiety impairs the mathematical cognitive process of students (Cassady & Johnson, 2002), makes learning harder (Sheffield & Hunt, 2007), and reduces students' relationships with mathematics (Tooke & Lindstrom, 1998). Moreover, students who are math anxious always experience increased levels of anxiety in math-related situations (Spielberger, 1985). As Hopko, McNeil, Zvolensky, and Eifert (2001) reported, students with medium or high mathematics anxiety experienced an impairment of their reading processes when the text was related to math. If students experience hardship from mathematics anxiety, their willingness to study and be successful in mathematics courses will diminish (Stubblefield, 2006). Moreover, Akinsola, Tella, and Tella (2007) found that math-anxious students tend to avoid mathematics-related situations and courses and exhibit procrastination behavior. Mathematics anxiety is a widespread problem, especially in tertiary education. According to Ashcraft and Moore (2009), 17 percent of the U.S. population suffer from high level of mathematics anxiety.

#### **- Perceived Behavioral Control**

Perceived behavioral control (Ajzen, 1991) is a key component of the theory of planned behavior discussed earlier. The concept of perceived behavioral control is especially useful for assessing an individual actual control for specific situations (Ajzen, 2002). A high level of perceived behavioral control strengthens an individual's intention to act upon the behavior, whereas a low level means less motivation to act upon the behavior. Since learning involves acquiring knowledge and behavioral skills, the main aspect of student performance and academic achievement is how to capture knowledge (Orrell, 2006). Viewed from this perspective, students have a chance to acquire knowledge with their unique ability (Kutnowski, 2005). When students are passionate about learning, their learning preference and learning skills enable them to acquire and modify their existing knowledge and develop self-control (Boud, Keogh, & Walker, 2013). As shown in Figure 2 and in line with the theory of planned behavior, in this study, student perceived behavior control is indicated by ((i) student ability and (ii) student self-control. Both indicators are discussed next.

(i) **Student Ability** – Student ability to learn mathematics is the capability to understand, handle, and work with numbers effectively. Obviously, the higher the mathematical ability of a student, the higher his/her achievement in math. Conversely,

the lower the mathematical ability of a student, the lower his/her achievement in math (Nizoloman, 2013). Many students perceive that mathematics as the most difficult subject regardless of its importance in their lives (Zakaria & Ngah, 2011; Cai & Hwang, 2002). The difficulty of dealing with mathematical problem depends on the extent to which students believe in their own ability to succeed (Bandura, 1986; Carr & Sequeira, 2007). Student mathematical problem-solving ability is influenced by his/her confidence in one's ability influences (Bandura, 2010).

**(ii) Student Self-Control** – Self-control can be defined as one's ability to restrain oneself or hinder behavior or responses intentionally and consciously (Vohs & Baumeister, 2004). It is particularly helpful in overcoming affective, cognitive, and behavioral tendencies that would otherwise prevent people from achieving their goals (Baumeister, Vohs, & Tice, 2007). According to Tangney, Baumeister, and Boone (2004), self-control is important to take action pursuing one's ambition. Students who possess high self-control tend to get more benefits than those who have low self-control (Ent, Baumeister, & Tice, 2015). They have been found to have higher grades, be able to avoid dealing with alcohol and drugs, have better interpersonal relationships, and exhibit more emotional stability (Tangney et al., 2004). On the other hand, students with low self-control tend to cheat on examinations (Williams & Williams, 2012), gamble (Williams, 2010), drink and abuse drug (Ford & Blumenstein, 2013) and be unhappy (Dalton & Crosby, 2011). This ruins their willingness to study and impairs their performance (Goleman, 2001).

#### **- Student Willingness to Study Mathematics**

Willingness to study is defined as a desire, wish or readiness to acquire new knowledge (Yashima, 2002). As an inner strength influencing a student's performance, it is similar to willingness to learn, which refers to both professional competence and general education (Noplag Blog, 2017). Woolfolk and Margetts (2007) determined that one of the most significant factors in education is the willingness to study, appreciate, and be excited about what students are studying. When student willingness to study is high, they are more likely to find a significant learning challenge. In relation to math learning, willingness to study is likely to have a profound effect on success. Typically, students willing to study mathematics are highly motivated and have a good behavior and positive attitude towards studying mathematics (Tooke & Lindstrom, 1998). They tend to pay more attention to the learning process and math materials, assignments and examinations and tend to become more inquisitive of the content of the subject and be more actively engage in the process of learning math (Azmidar, Darhim, & Dahlan 2017). According to Saleh (2004), high achievers in math have a high level of willingness to solve mathematical problems compared to average and underachiever students.

#### **- Student Performance**

Performance is the result of an effort in the form of either knowledge or skills. Performance is achieved by doing something despite difficulty or delaying in achieving success (Maulida & Kariyam, 2017). Student performance is one of the most notable and significant predictors in the lives of the students. It predicts the extent to which students, teachers, and institutions have attained their educational goals and objectives. Student performance is important because it promotes success in their lives (Areepattamannil & Freeman, 2008). Factors affecting student performance, such as willingness to study, and academic and learning

behavior, are equally important in discovering students' academic performance. The GPA is often used to measure student performance (Darling, Caldwell, & Smith, 2005). Some researchers, however, use test results or previous year result when focusing on performance for a specific subject (Hijazi & Naqvi, 2006; Amirtha & Jebaseelan, 2014).

### 3. Hypotheses Development

Several studies have determined that attitude (which in this study includes confidence and anxiety as we just saw) influences behavioral intention (Chen & Wu, 2020; Lin & Williams, 2016). In the field of education, a number of studies have established that there is a positive relationship between student confidence and their willingness to study (e.g. Nazarova & Umurova, 2016; Sheldrake, Mujtaba, & Reiss, 2015). It can therefore be hypothesized that:

H1a: *There is a relationship between student confidence and student willingness to study mathematics.*

H1b: *There is a relationship between student confidence and student actual performance in mathematics.*

As explained earlier, one type of anxiety is mathematics anxiety. Since as a negative emotional reaction to mathematics, anxiety in mathematics impedes students from solving mathematical problems (Ashcraft, 2002; Burrus & Moore, 2016), the present study can hypothesize that:

H2a: *There is a relationship between student anxiety and student willingness to study mathematics.*

H2b: *There is a relationship between student anxiety and students' actual performance in mathematics.*

Sáez et al. (2018) concluded that students with high levels of willingness to study show positive beliefs about their own ability to self-regulate their willingness to study.

H3a: *There is a relationship between student ability and student willingness to study mathematics.*

H3b: *There is a relationship between student ability and students' actual performance in mathematics.*

Hafilah and Usman (2019) collected data from accounting students at the State University of Jakarta and found that the higher the ability to control or manage their emotions, the better the level of understanding of accounting knowledge. Moreover, Kaiser, Hübner, and Bogner (2005) determined that perceived behavioral control, which consists of student ability and self-control, have an effect on students intention (willingness) to study. The following hypothesis can thus be developed:

H4a: *There is a relationship between student self-control and student willingness to study mathematics.*

H4b: *There is a relationship between student self-control and students' actual performance in mathematics.*

Tooke and Lindstrom (1998) argued that the willingness to solve problems played an important role in the achievement of mathematics. Moreover, Papanastasiou (2000) found that,

compared to average and poor learners, outstanding students have a high degree of willingness to solve mathematics problems. The following hypothesis can therefore be proposed:

H5: *There is a relationship between student willingness to study Mathematics and students' actual performance in mathematics.*

#### 4. Research Methodology

##### - Target Population and Data Collection

The data was collected from a target population consisting of students who took a course in basic mathematics in 1/2019 semester (August-October 2019) at one private Thai university. Basic mathematics is an introductory course for first year students majoring in business administration. This subject has been selected because it is a non-credit subject, which most students may not be willing to study, making it an interesting issue to examine. In addition, since, in a competitive academic environment, it is important for private universities to be able to retain students, this study was conducted at a private university, hoping that its results would contribute to enhancing student performance, which in turn could lead to a high retention rate (Hasan, Ilias, Rahman, & Razak, 2008). The data was collected using online questionnaires distributed to 554 students who took basic mathematics. Since this study used census sample, no sampling method was used. Table 1 presents the profile of the 554 respondents. The majority of respondents in this study were Thai female students below 19 year old with a GPA of 3.00 or above.

**Table 1:** Student Profile (n = 554)

|             |                   | Frequency | Percent |
|-------------|-------------------|-----------|---------|
| Gender      | Male              | 193       | 34.8    |
|             | Female            | 361       | 65.2    |
| Nationality | Thai              | 442       | 79.8    |
|             | Non-Thai          | 112       | 20.2    |
| Age         | Below 19 or equal | 374       | 67.5    |
|             | 20-21             | 108       | 19.5    |
|             | 22 or above       | 72        | 13.0    |
| GPA         | Less than 2.00    | 22        | 4.0     |
|             | 2.00-2.49         | 81        | 14.6    |
|             | 2.50-2.99         | 76        | 13.7    |
|             | 3.00 or above     | 153       | 27.6    |
|             | N/A               | 222       | 40.1    |

Note: N/A refers to first-year students who are in their first semester and therefore do not have a GPA yet.

##### - Instruments

All item measures were developed from previous studies using a 6-point Likert scale (e.g. strongly agree to strongly disagree) and revised to focus on mathematics as a subject. Since a 6-point Likert scale will classify respondents into groups that are easy to understand and interpret (Chang, 1994), it is a forced choice. Cronbach alpha was used to test reliable measures. Average variance extracted (AVE) and the composite reliability were employed to assess the convergent and discriminant validity applied (Fornell & Larcker, 1981). Moreover, this study ran an exploratory factor analysis to assess unidimensional constructs and test for

the construct validity, both convergent and discriminant (see Tables 2 and 3). Student confidence was measured through eight items adapted from Mokhtar, Md Yusof, and Misiran (2012) and student anxiety through seven items adapted from Grootenboer and Hemmings (2007). To measure student ability, six items were adapted from Meece, Wigfield, and Eccles (1990). Six items adapted from Tangney et al. (2004) were used to measure student self-control. As to student willingness, it was measured through five items adapted from Pajares and Graham (1999). Finally, student actual performance was measured using a single item; the total 100 scores of quizzes, assignments, midterm, and final exam.

Table 2 shows the reliability and validity results for all measures. For reliability measurement, the Cronbach's alpha was used. Hair, Black, Babin, and Anderson (2010) suggested that the value of Cronbach's alpha for measurement scale should be 0.70 or greater, which indicate acceptable reliability. The results indicate that the Cronbach's alpha ranges from 0.716 to 0.919, which represents a good reliability of the measures. For validity measurement, an exploratory factor analysis was conducted so as to group item measures into a few concepts that closely mapped the literatures and make hypotheses testing possible while preserving most variation with simplicity (Jolliffe, 2010). A principal components analysis with varimax rotation and Kaiser normalization was considered appropriate as the number of samples (554) was more than five times the number of item measures (32) (Tabachnik & Fidell, 1996). The factor analysis reduced the thirty-two item measures to five factors with eigenvalue at more than one and factors loading value at more than 0.500, ranging from .635 to .897 (Stevens, 1992). The Kaiser-Meyer Olkin (KMO) measure of sampling adequacy was 0.900 (Kaiser, 1974), indicating adequate sample size. The Bartlett Test of Sphericity (7037.344,  $p < 0.0005$ ) indicates a significant correlation between item measures, which is valid to run a meaningful EFA, altogether confirming the validity of the measures (Norusis, 2005). Table 2 also shows a clear factor structure in which convergent and discriminant validity is evidenced by the high loadings within factors and no major cross-loadings between factors.

**Table 2:** Measurement Description

| Constructs  | Factor Loadings           | Means     | SD        |
|---|---------------------------|-----------|-----------|
| Student Confidence in Math<br>( $\alpha = .854$ , AVE=.705, CR=.749)        | .635-.747<br>(var=11.5%)  | 3.31-3.43 | 1.51-1.56 |
| Student Anxiety regarding Math<br>( $\alpha = .906$ , AVE=.787, CR=.908)    | .653-.861<br>(var=22.55%) | 3.27-4.14 | 1.49-1.83 |
| Student Ability in Math<br>( $\alpha = .862$ , AVE=.754, CR=.799)           | .692-.807<br>(var=12.0%)  | 3.30-4.07 | 1.41-1.44 |
| Student Self-Control<br>( $\alpha = .716$ , AVE=.789, CR=.832)              | .753-.814<br>(var=10.35%) | 3.49-3.94 | 1.49-1.56 |
| Student willingness to study Math<br>( $\alpha = .919$ , AVE=.865, CR=.922) | .813-.897<br>(var=18.44%) | 4.29-4.61 | 1.16-1.33 |

Note: KMO (0.900); Variance extracted (74.84%); Bartlett's Test of Sphericity are all significant at  $p$  value  $< 0.0005$

In social sciences, where information is often less precise than in pure sciences, it is common to consider a solution that accounts for 60 percent of the total variance as satisfactory and providing practical significance for the derived factors by ensuring that they

explain at least a specified amount of variance (Hair et al., 2010). In this study, these five factors account for 74.84 percent of the variance in the data, ensuring at least a specified amount of variance explained. Moreover, factor loading, composite reliability (CR), and average variance extracted (AVE) were used to establish convergent validity. The value ranges from 0 to 1. AVE should exceed 0.50 to present convergent validity. In this study, all the values mentioned exceed the threshold value, indicating convergent validity (Hair et al., 2010; Bagozzi & Yi, 1988) (see Table 2).

Discriminant validity refers to the extent to which factors are distinct and uncorrelated. The rule is that variables should relate more strongly to their own factor than to another factor. In this study, discriminant validity was analyzed following Fornell and Larcker (1981) by comparing the square root of each AVE in the diagonal (correlation to their own factor) with the correlation coefficients (off-diagonal) for each construct in the relevant rows and columns. Based on the above-mentioned rule, the correlation figure on off-diagonal should be lower than figures on diagonal to reflect the discriminant validity (see Table 3). Overall, discriminant validity can be accepted for these measures and supports the discriminant validity between the constructs.

**Table 3:** Discriminant Analysis

|                     | <b>Confidence</b> | <b>Anxiety</b> | <b>Ability</b> | <b>Self-Control</b> | <b>Willingness</b> |
|---------------------|-------------------|----------------|----------------|---------------------|--------------------|
| <b>Confidence</b>   | <b>.840</b>       |                |                |                     |                    |
| <b>Anxiety</b>      | -.524**           | <b>.890</b>    |                |                     |                    |
| <b>Ability</b>      | .683**            | -.554**        | <b>.868</b>    |                     |                    |
| <b>Self-Control</b> | .002              | .213**         | -.043          | <b>.888</b>         |                    |
| <b>Willingness</b>  | .553**            | -.233**        | .442**         | -.108*              | <b>.930</b>        |

Note: \*\*correlation is significant at the 0.01 level (2-tailed). \*correlation is significant at the 0.05 level (2-tailed). The value on the diagonal is square root AVE.

## 5. Results

A multiple regression analysis was applied using the composite score of each factor. As Table 4 indicates, the regression equation for each independent variable on willingness to study mathematics is valid, where F value = 70.680. Moreover, the Durbin-Watson value is 1.719, which is close to 2.0, indicating that there is no autocorrelation detected in the data set. The variance inflation factor (VIF) value of each independent variable ranges between 1.000-2.057, which are less than 4, indicating that there is no multicollinearity in a set of regression variables (Hair et al., 2010). Therefore, these independent variables are appropriate to include in the regression analysis. For adjusted R square value, 33.5 percent indicates that 33.5 percent of the variances in the dependent variable can be explained by the independent variables. An explanatory power of up to 33.5 percent indicates that they can be used to effectively predict student willingness to study mathematics. In summary, the multiple regression analysis is reliable and valid since all assumptions have been met.

Results of the regression analysis show that student confidence is highly significantly related to student willingness to study math ( $\beta = 0.524$ ); H1a is supported. Student anxiety in math is significantly related to student willingness to study math ( $\beta = 0.160$ ); H2a is supported.

Moreover, student ability in math is significantly related to student willingness to study math ( $\beta = 0.165$ ); H3a is supported. Lastly, student self-control is significantly related to student willingness to study math ( $\beta = 0.136$ ); H4a is supported. In addition, results of the simple regression analysis show that student willingness is a highly significant predictor of student performance in math ( $\beta = 0.243$ ); H5 is supported. In summary, based on the above-mentioned results, willingness is influenced by student confidence in math, followed by student ability in math, student anxiety in math, and student self-control. Therefore, students who have high confidence in math, have high ability in math, experience high levels of anxiety in math, and have a high level of self-control, are more likely to develop a willingness to study mathematics. More specifically, student willingness to study math certainly influences student performance in math.

**Table 4:** Hypotheses Testing Results (Indirect Effect)

| Hypotheses  | Standardized Coefficient | t value | p value | VIF   | Results            |
|---|--------------------------|---------|---------|-------|--------------------|
| <b>H1a:</b> Confidence → Willingness                                | .524                     | 10.639  | .000    | 2.019 | Support hypotheses |
| <b>H2a:</b> Anxiety → Willingness                                   | .160                     | 3.638   | .000    | 1.610 | Support hypotheses |
| <b>H3a:</b> Ability → Willingness                                   | .165                     | 3.316   | .001    | 2.057 | Support hypotheses |
| <b>H4a:</b> Self-Control → Willingness                              | .136                     | 3.800   | .000    | 1.068 | Support hypotheses |
| <b>H5:</b> Willingness → Actual Behaviors (willingness as mediator) | .243                     | 5.852   | .000    | 1.000 | Support hypotheses |

Note: Adjusted R square = 33.50%; F value = 70.680 at p value < .0005 for H1-H4; Durbin-Watson value = 1.719; R square = 5.7%; F value = 34.250 at p value < .0005 for H 5; Durbin-Watson value = 1.443

As can be seen in Table 5, the regression equation for each independent variable on student performance in math is valid (F value = 33.686). Moreover, both the Durbin-Watson value (1.383) and the variance inflation factor value of each independent variable (less than 4) indicate the absence of collinearity and the autocorrelation of residuals among the investigated independent variables. Therefore, these independent variables were appropriate to include in the regression analysis, and have an explanatory power of up to 23.0 percent, indicating that they can be used to effectively predict student performance in mathematics (actual behaviors). Results of the regression analysis show that only student ability and student anxiety are significantly related to student performance in math ( $\beta = 0.232$  and  $\beta = -0.261$ , respectively); H2b and H3b are supported. However, student confidence in math and student self-control are not significantly related to student performance in math ( $\beta = 0.036$  and  $\beta = -0.016$ , respectively); H1b and H4b are not supported. Lastly, student willingness to study math is not significantly related to student performance in math ( $\beta = 0.060$ ); H5 is not supported.

In summary, as indicated by the above-mentioned results, whereas student performance is influenced by their ability in math as well as their anxiety in math, student confidence, self-control and willingness do not influence their performance in math. Therefore, students who have high ability in math are more likely to perform well in math and students who experience a high level of anxiety in math are less likely to perform well in math. However, for students who have high confidence in math and students who have high self-control, these characteristics have no effect on their performance in math. Student willingness to study math

also has no effect on student performance in math. It is also important to note that student willingness to study math is a good predictor as a mediator but not as an independent variable.

**Table 5:** Hypotheses Testing Results (Direct Effect)

| Hypotheses  | Standardized Coefficient | t value | p value | VIF   | Results            |
|---|--------------------------|---------|---------|-------|--------------------|
| <b>H1b:</b> Confidence → Actual Behaviors                     | .039                     | .663    | .508    | 2.424 | NS                 |
| <b>H2b:</b> Anxiety → Actual Behaviors                        | -.261                    | -5.379  | .000    | 1.670 | Support hypotheses |
| <b>H3b:</b> Ability → Actual Behaviors                        | .232                     | 4.269   | .000    | 2.098 | Support hypotheses |
| <b>H4b:</b> Self-Control → Actual Behaviors                   | -.016                    | -.400   | .689    | 2.424 | NS                 |
| <b>H5:</b> Willingness → Actual Behaviors (willingness as IV) | .060                     | 1.309   | .191    | 1.505 | NS                 |

Note: Adjusted R square = 23.0%; F value = 33.686 at p value < .0005 for H1-H4; Durbin-Watson value = 1.383

## 6. Discussion and Conclusion

Prior research and this study prove that the theory of planned behavior is an effective theory in predicting student behavior, including with regard to studying mathematics. Regarding the findings, with student willingness to study math as a dependent variable, the following comments can be made. The first finding (H1a), which indicates a relationship between student confidence and student willingness to study math, is consistent with the study of Parsons, Croft, and Harrison (2009) that focuses on first-year engineer students learning mathematics at university during the period 2005-2007. The second finding (H2a), which shows a relationship between student anxiety and student willingness to study math is in keeping with the conclusions of a study by Meece et al. (1990), in which a 250 sample of 7th-through 9th-grade students enrolled in a math course was examined. The third finding (H3a), which reveals a relationship between student ability and student willingness to study math confirms the findings made by Niepel et al. (2018) in their research study conducted in various US middle schools with the data collected in two waves (June and November 2012).

The fourth finding (H4a), which establishes a relationship between student self-control and student willingness to study math, is consistent with the determination made by Fauzi and Widjajanti (2018) in their desk research browsing the journal on the internet using the Mendeley program. Moreover, the fifth finding (H5) with has willingness to study as the single independent variable, indicates that there is a relationship between student willingness to study math and actual performance. This finding is consistent with the results of a recent study by Aungatichart, Fukushige, and Aryupong (2020) that examines 400 Thai consumers of organic foods and confirms the predictive role of the theory of planned behavior. These findings, all in keeping with all the relevant literature on the theory of planned behavior (e.g. Lipnevich et al., 2011; Niepel et al., 2018; Oh, 2003). come in support of its effectiveness as a toll for predicting behaviors in the academic field and the study of math. The findings with student actual performance as the dependent variable call for the following comments. The conclusion that there is a negative relationship between student anxiety and student actual performance (H2b) is consistent with the findings of a study conducted by Vitasari et al. (2010) at the Universiti Malaysia Pahang (UMP). The study examines 205 second-year

engineering students. The seventh finding that there is a relationship between student ability and actual performance (H3b) is in keeping with previous studies. For example, Caspi et al. (2006) conducted a web-based study to examine the competence of fourth-year medical students in the United States and found a strong correlation between ability and actual performance. Surprisingly, in this study of first year students at a private Thai university, no relationship between student confidence (H1b), student self-control (H4b), and student willingness to study (H5 as one of the five independent variable) with student actual performance has been found.

One interesting result is that student anxiety is positively related to student willingness to study math but negatively related to actual performance. This is consistent with previous studies, in particular one by Cassady (2004), who investigated 124 undergraduate students majoring in educational psychology at a Midwestern United States university and made the same determinations were made. One possible explanation for the positive relationship could be that the more they are afraid of math, the more they are willing to study as it is quite likely that in their opinion more knowledge can help reduce their anxiety. As to the negative relationship, one possible explanation may be that students' anxiety level could be so high, especially during exam periods, that it could have an adverse affect on their performance. Keeley, Zayac, and Correia (2008) studied 83 students enrolled in a single introductory statistics course during the spring of 2005 at a large university in the southeastern U.S. and also found that the relationship between student anxiety and performance was a curvilinear relationship.

Another interesting finding in this research is the relationship between student ability, willingness to study and actual performance. One way of accounting for it may be that student ability is determined by their skills, which means that when students believe in their own skills, it increases their willingness and spur them into their action. As to the fact that in this study student confidence is not related to actual performance, it may be due to students' overconfidence in this non-credit subject. They may simply not produce enough efforts taking the exam. This is also the case with student self-control. Since students are likely not to put much effort in this course, they cannot do well on the exam. In summary, it can be seen that the most important finding in this study is that student willingness to study math fully mediate the relationship between student confidence, student anxiety, student ability, and student self-control with their actual performance in math. It enhances the theory of planned behavior.

#### *- Implications*

This study aims to explore the relationship between the determinants of student willingness to study mathematics and the effect on their actual performance. Although some research have studied the determinants affecting actual performance (e.g. Mazana, et al., 2019; Mohd, et al., 2011), student willingness to study math has been neglected. The importance of student willingness to study mathematics is verified by the theory of planned behavior (Ajzen, 2002). Student willingness to study is a major factor in student academic success. This can be used to introduce programs for university students who want to develop their math learning skills. The findings of this study will help decision makers in higher learning institutions to gain a better understanding of the factors that determine student willingness to study mathematics. The promotion of student willingness to study by teachers will facilitate the development of learning competences (Tuckman & Kennedy, 2011). In addition, if students are more confident and less anxious and develop their ability and self-control, their performance will

improve. This means taking steps to rearrange the curriculum and have proper learning facilities to assist students. This also means ensuring proper guidance and support by parents.

- *Limitations*

This study has limitations. Firstly, this study was conducted at only one private university about one subject and for one semester. Future studies should therefore consider including more universities and more courses for generalizable purposes. Secondly, although R square value is equaled to 38%, which is quite acceptable, some other determinants of academic performance are not discussed. Yet, they could improve the R square value. This includes self-motivation, family income, and parents' level of education. Recall from above that the square of the correlation (R square) measures the proportion of variation in the dependent variable that can be attributed to the independent variable. Thirdly, the research framework tested is a new combination of theoretically related variables in the context of developing countries (Thailand is an upper middle-income developing country). Therefore, the findings of this study would be more generalizable if future studies focused on a number of other developing countries. Finally, since this study is a cross sectional research, it is not feasible to assess causality findings between the variables that were examined. It will thus be interesting in the future to have longitudinal studies that make it possible to examine causality.

## References

- Aiken Jr, L. R. (1970). Attitudes toward mathematics. *Review of Educational Research*, 40(4), 551-596.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4), 665-683.
- Ajzen, I., & Manstead, A. S. (2007). *Changing health-related behaviors: An approach based on the theory of planned behavior* (1<sup>st</sup> ed.). New York, USA: Psychology Press, Taylor & Francis.
- Akinsola, M. K., Tella, A., & Tella, A. (2007). Correlates of academic procrastination and mathematics achievement of university undergraduate students. *Eurasia Journal of Mathematics, Science & Technology Education*, 3(4), 363-370.
- Amirtha, M. T., & Jebaseelan, A. U. S. (2014). The learning environment in schools the impetus in a student's life. *Asian Academic Research Journal of Social Science & Humanities*, 1(29), 1-18.
- Areepattamannil, S., & Freeman, J. G. (2008). Academic achievement, academic self-concept, and academic motivation of immigrant adolescents in the greater Toronto area secondary schools. *Journal of Advanced Academics*, 19(4), 700-743.
- Ashcraft, M. H. (2002). Math anxiety: Personal, educational, and cognitive consequences. *Current Directions in Psychological Science*, 11(5), 181-185.
- Ashcraft, M. H., & Moore, A. M. (2009). Mathematics anxiety and the affective drop in performance. *Journal of Psychoeducational Assessment*, 27(3), 197-205.
- Aungatichart, N., Fukushige, A., & Aryupong, M. (2020). Mediating role of consumer identity between factors influencing purchase intention and actual behavior in organic

- food consumption in Thailand. *Pakistan Journal of Commerce and Social Sciences*, 14(2), 424-449.
- Azmidar, A., Darhim, D., & Dahlan, J. A. (2017). Enhancing students' interest through mathematics learning. *Journal of Physics: Conference Series*, 895(1), 012072.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74-94.
- Bandura, A. (1986). *Social functions of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice-Hall.
- Bandura, A. (2010). *Self-efficacy*. *The Corsini Encyclopedia of Psychology*, 1-3. Hoboken, NJ: Wiley & Son.
- Baumeister R., Vohs, K. D., & Tice D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, 16(6), 351-355.
- Bishop, J. H. (1998). The effect of curriculum-based external exit exam systems on student achievement. *The Journal of Economic Education*, 29(2), 171-182.
- Borasi, R. (1990). *The invisible hand operating in mathematics instruction: Students' conceptions and expectations*. In T. J. Cooney's (Ed.) *Teaching and Learning Mathematics in the 1990s: 1990 Yearbook* (p. 174-182). Reston, VA: NCTM.
- Boud, D., Keogh, R., & Walker, D. (2013). *Reflection: Turning experience into learning*. New York and London: Routledge.
- Burrus, J., & Moore, R. (2016). The incremental validity of beliefs and attitudes for predicting mathematics achievement. *Learning and Individual Differences*, 50, 246-251.
- Burton, L. (2004). Confidence is everything: Perspectives of teachers and students on learning mathematics. *Journal of Mathematics Teacher Education*, 7(4), 357-381.
- Cai, J., & Hwang, S. (2002). Generalized and generative thinking in US and Chinese students' mathematical problem solving and problem posing. *The Journal of Mathematical Behavior*, 21(4), 401-421.
- Carr, J. C., & Sequeira, J. M. (2007). Prior family business exposure as intergenerational influence and entrepreneurial intent: A theory of planned behavior approach. *Journal of Business Research*, 60(10), 1090-1098.
- Caspi, O., Mcknight, P., Kruse, L., Cunningham, V., Figueredo, A. J., & Sechrest, L. (2006). Evidence-based medicine: Discrepancy between perceived competence and actual performance among graduating medical students. *Medical Teacher*, 28(4), 318-325.
- Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology*, 27(2), 270-295.
- Cassady, J. C. (2004). The influence of cognitive test anxiety across the learning-testing cycle. *Learning and Instruction*, 14(6), 569-592.
- Chang, L. (1994). A psychometric evaluation of 4-point and 6-point Likert-type scales in relation to reliability and validity. *Applied Psychological Measurement*, 18(3), 205-215.
- Chen, C.L., & Wu, C. C. (2020). Students' behavioral intention to use and achievements in ICT-Integrated mathematics remedial instruction: Case study of a calculus course. *Computers & Education*, 145. 103740.
- Chionh, Y. H., & Fraser, B. J. (2009). Classroom environment, achievement, attitudes and self-esteem in geography and mathematics in Singapore. *International Research in Geographical and Environmental Education*, 18(1), 29-44.

- Dalton, J. C., & Crosby, P. C. (2011). Time on task: The critical role of self-regulating behavior in college student academic success and personal development. *Journal of College and Character, 12*(3).
- Darling, N., Caldwell, L. L., & Smith, R. (2005). Participation in school-based extracurricular activities and adolescent adjustment. *Journal of Leisure Research, 37*(1), 51-76.
- Ent, M. R., Baumeister, R. F., & Tice, D. M. (2015). Trait self-control and the avoidance of temptation. *Personality and Individual Differences, 74*, 12-15.
- Fauzi, A., & Widjajanti, D. B. (2018, September). Self-Regulated Learning: The Effect on Student's Mathematics Achievement. In *Journal of Physics: Conference Series*, IOP Publishing, 1097(1), 012139. [http:// doi :10.1088/1742-6596/1097/1/012139](http://doi:10.1088/1742-6596/1097/1/012139)
- Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. New York, USA: Psychology Press, Taylor & Francis.
- Ford, J. A., & Blumenstein, L. (2013). Self-control and substance use among college students. *Journal of Drug Issues, 43*(1), 56-68.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.
- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences, 111*(23), 8410-8415.
- Furner, J., & Berman, B. (2005). Confidence in their ability to do mathematics: The need to eradicate math anxiety so our future students can successfully compete in a high-tech globally competitive world. *Dimensions in Mathematics, 18*(1), 28-31.
- Goleman, D. (2001). An EI-based theory of performance. The emotionally intelligent workplace: How to select for, measure, and improve emotional intelligence in individuals, groups, and organizations. *Consortium for Research on Emotional Intelligence in Organizations, 1*, 27-44.
- Grootenboer, P., & Hemmings, B. (2007). Mathematics performance and the role played by affective and background factors. *Mathematics Education Research Journal, 19*(3), 3-20.
- Hafilah, E., & Usman, O. (2019, July 4). The Effect of Self-Control, Motivation, Learning and Behavior on the Level of Understanding in Accounting Students, Faculty of Economic State University of Jakarta. Available at SSRN: <https://ssrn.com/abstract=3415078> or <http://dx.doi.org/10.2139/ssrn.3415078>.
- Hair Jr., J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010) *Multivariate data analysis: A global perspective* (7<sup>th</sup> ed.). Upper Saddle River: NJ, Pearson Education.
- Hasan, H. F. A., Ilias, A., Rahman, R. A., & Razak, M. Z. A. (2008). Service quality and student satisfaction: A case study at private higher education institutions. *International Business Research, 1*(3), 163-175.
- Heinesen, E. (2010). Estimating class-size effects using within-school variation in subject-specific classes. *The Economic Journal, 120*(545), 737-760.
- Hijazi, S. T., & Naqvi, S. M. M. (2006). Factors affecting students' performance. *Bangladesh e-Journal of Sociology, 3*(1), 1-10.

- Hopko, D. R., McNeil, D. W., Zvolensky, M. J., & Eifert, G. H. (2001). The relation between anxiety and skill in performance-based anxiety disorders: A behavioral formulation of social phobia. *Behavior Therapy*, 32(1), 185-207.
- Jolliffe, I. T. (2010). *Principal Component analysis: Spring series in statistics* (2<sup>d</sup> ed.). New York, USA: Springer-Verlag.
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31-36.
- Kaiser, F. G., Hübner, G., & Bogner, F. X. (2005). Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behavior. *Journal of Applied Social Psychology*, 35(10), 2150-2170.
- Keeley, J., Zayac, R., & Correia, C. (2008). Curvilinear relationships between statistics anxiety and performance among undergraduate students: Evidence for optimal anxiety. *Statistics Education Research Journal*, 7(1), 4-15.
- Kloosterman, P., Raymond, A. M., & Emenaker, C. (1996). Students' beliefs about mathematics: A three-year study. *The Elementary School Journal*, 97(1), 39-56.
- Kutnowski, M. (2005). This is why we teach: Igniting a passion for learning in linked courses. *About Campus*, 10(1), 23-26.
- Liao, C., Chen, J. L., & Yen, D. C. (2007). Theory of planning behavior (TPB) and customer satisfaction in the continued use of e-service: An integrated model. *Computers in Human Behavior*, 23(6), 2804-2822.
- Lin, K. Y., & Williams, P. J. (2016). Taiwanese preservice teachers' science, technology, engineering, and mathematics teaching intention. *International Journal of Science and Mathematics Education*, 14(6), 1021-1036.
- Lipnevich, A. A., MacCann, C., Krumm, S., Burrus, J., & Roberts, R. D. (2011). Mathematics attitudes and mathematics outcomes of US and Belarusian middle school students. *Journal of Educational Psychology*, 103(1), 105-118.
- Magnusson, M. K., Arvola, A., Koivisto Hursti, U-K., Aberg, L., & Sjoden, P-O. (2001). Attitudes towards organic foods among Swedish consumers. *British Food Journal*, 103(3), 209-226.
- Marks, G. N. (2008). Accounting for the gender gaps in student performance in reading and mathematics: Evidence from 31 countries. *Oxford Review of Education*, 34(1), 89-109.
- Maulida, J. D., & Kariyam. (2017, December). Students Academic Performance Based on Behavior. In AIP Conference Proceedings (Vol. 1911, No. 1, p. 020010). AIP Publishing LLC.
- Mazana, Y. M., Montero, S. C., & Casmir, O. R., (2019). Investigating students' attitude towards learning mathematics. *International Electronic Journal of Mathematics Education*, 14(1), 207-231.
- McElmeel, S. L. (2002). *Character education: A book guide for teachers, librarians, and parents*. Colorado, USA: Libraries Unlimited Teacher Ideas Press.
- McMullen, K. (2005). Student achievement in mathematics: The roles of attitudes, perceptions and family background. *Education Matters: Insights on Education, Learning and Training in Canada*, 2(1).
- Meece, J. L., Wigfield, A., & Eccles, J. S. (1990). Predictors of math anxiety and its influence on young adolescents' course enrollment intentions and performance in mathematics. *Journal of Educational Psychology*, 82(1), 60-70.

- Miller, L. D., & Mitchell, C. E. (1994). Mathematics anxiety and alternative methods of evaluation. *Journal of Instructional Psychology*, 21(4), 353-358.
- Mohd, N., Mahmood, T. F. P. T., & Ismail, M. N. (2011). Factors that influence students in mathematics achievement. *International Journal of Academic Research*, 3(3), 49-54.
- Mokhtar, S. F., Md Yusof, Z., & Misiran, M. (2012). Factors affecting students' performance in mathematics. *Journal of Applied Sciences Research*, 8(8), 4133-4137.
- Nazarova, G. P., & Umurova, K. H. (2016). Self-confidence and its importance in learning languages. *International Scientific Journal*, 4(2), 47-49.
- Niepel, C., Burrus, J., Greiff, S., Lipnevich, A. A., Brenneman, M. W., & Roberts, R. D. (2018). Students' beliefs and attitudes toward mathematics across time: A longitudinal examination of the theory of planned behavior. *Learning and Individual Differences*, 63, 24-33.
- Nizoloman, O. N. (2013). Relationship between mathematical ability and achievement in mathematics among female secondary school students in Bayelsa State Nigeria. *Procedia-Social and Behavioral Sciences*, 106, 2230-2240.
- Noplag Blog (2017, October 18). The Willingness to Learn. Retrieved September 21, 2020, from <https://blog.noplag.com/the-willingness-to-learn/>
- Norusis, M. (2005). *Advanced statistical procedures companion*. Upper Saddle: NJ, Prentice Hall.
- Oh, Y. (2003). Applying theory of planned behavior model on studying teachers' change in mathematics instruction. *International Group for the Psychology of Mathematics Education*, 3, 405-412.
- Orrell, J. (2006). Feedback on learning achievement: Rhetoric and reality. *Teaching in Higher Education*, 11(4), 441-456.
- Pajares, F., & Graham, L. (1999). Self-efficacy, motivation constructs, and mathematics performance of entering middle school students. *Contemporary Educational Psychology*, 24(2), 124-139.
- Papanastasiou, C. (2000). Effects of attitude and beliefs on mathematics achievement. *Studies in Educational Evaluation*. 26(1), 27-42.
- Parsons, S., Croft, T., & Harrison, M. (2009). Does students' confidence in their ability in mathematics matter? *Teaching Mathematics and Its Applications: An International Journal of the IMA*, 28(2), 53-68.
- Piper, B. D. (2008). Attitudes, Confidence, and Achievement of High-Ability Fifth Grade Math Students. Summative Projects for MA Degree. University of Nebraska - Lincoln. Retrieved September 10, 2020, from: <https://digitalcommons.unl.edu/mathmidsummative/29>
- Ranjbarian, B., Gharibpoor, M., & Lari, A. (2012). Attitude toward SMS advertising and derived behavioral intention: An empirical study using TPB (SEM method). *Journal of American Science*, 8(7), 297-307.
- Reyes, L. H. (1984). Affective variables and mathematics education. *The Elementary School Journal*, 84(5), 558-581.
- Sáez, F. M., Bustos, C. E., Pérez, M. V., Mella, J. A., Lobos, K. A., & Díaz, A. E. (2018). Willingness to study, self-efficacy, and causal attributions in Chilean university students. *Journal of Educational Psychology-Propósitos y Representaciones*, 6(1), 223-245.

- Saleh, F. (2004). The Ability to Solve Non-Routine Problems among High Achievers. Unpublished Master's Project. Universiti Kebangsaan Malaysia.
- Sheffield, D., & Hunt, T. E. (2007). How does anxiety influence performance and what can we do about it? *MSOR Connections*, 6, 1-5.
- Sheldrake, R., Mujtaba, T., & Reiss, M. J. (2015). Students' intentions to study non-compulsory mathematics: The importance of how good you think you are. *British Educational Research Journal*, 41(3), 462-488.
- Simmers, M. J. (June 13-15, 2011). It's Not the Math They Hate. Hawaii University International Conference on Mathematics and Engineering (p. 1-48). Honolulu Hawaii, USA.
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571-581.
- Sparks, P., & Shepherd, R. (1992). Self-identity and the theory of planned behavior: Assessing the role of identification with green consumerism. *Social Psychology Quarterly*, 55(4), 388-399.
- Spielberger, C. D. (1985). Assessment of state and trait anxiety: Conceptual and methodological issues. *Southern Psychologist*, 2(4), 6-16.
- Stevens, J. P. (1992). *Applied multivariate statistics for the social sciences* (2<sup>d</sup> ed.). New Jersey, USA: Lawrence Erlbaum, Hillsdale.
- Stubblefield, L. (2006). Mathematics anxiety among GED recipients in four-year institutions. *Journal of Mathematics Science & Mathematics Education*, 19-22. Retrieved, July 14, 2020, from <http://www.msme.us/2006-2-4.pdf>
- Tabachnik, B. G., & Fidell, L. S. (1996). *Using multivariate analysis* (3<sup>rd</sup> ed.). New York, USA: Harper Row.
- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72(2), 271-324.
- Tobias, S., & Weissbrod, C. (1980). *Anxiety and mathematics: An update*. Harvard Educational Review, 50(1), 63-70.
- Tooke, D. J., & Lindstrom, L. C. (1998). Effectiveness of a mathematics methods course in reducing math anxiety of preservice elementary teachers. *School Science and Mathematics*, 98(3), 136-139.
- Törnroos, J. (2005). Mathematics textbooks, opportunity to learn and student achievement. *Studies in Educational Evaluation*, 31(4), 315-327.
- Tuckman, B., & Kennedy, G. (2011). Teaching learning strategies to increase success of first-term college students. *The Journal of Experimental Education*, 79(4), 478-504.
- Van der Bergh, E. (2013). The Influence of Academic Self-Confidence on Mathematics Achievement. (Doctoral dissertation, North-West University). Retrieved December 9, 2020, from <http://hdl.handle.net/10394/10180>

- Vitasari, P., Wahab, M. N. A., Othman, A., Herawan, T., & Sinnadurai, S. K. (2010). The relationship between study anxiety and academic performance among engineering students. *Procedia-Social and Behavioral Sciences*, 8, 490-497.
- Vohs, K. D., & Baumeister, R. F. (2004). Self-control. In C. Spielberger (Ed.). *Encyclopedia of Applied Psychology*, 3, 369-373.
- Wentzel, K. R. (2002). Are effective teachers like good parents? Teaching styles and student adjustment in early adolescence. *Child Development*, 73(1), 287-301.
- Williams, D. M. (2010). Outcome expectancy and self-efficacy: Theoretical implications of an unresolved contradiction. *Personality and Social Psychology Review*, 14(4), 417-425.
- Williams, M. W. M., & Williams, M. N. (2012). Academic dishonesty, self-control, and general criminality: A prospective and retrospective study of academic dishonesty in a New Zealand University. *Ethics & Behavior*, 22(2), 89-112.
- Woolfolk, A., & Margetts, K. (2007). *Educational psychology: Australian adaptation* (5<sup>th</sup> ed.). Sydney, Australia: Pearson Education.
- Yashima, T. (2002). Willingness to communicate in a second language: The Japanese EFL context. *The Modern Language Journal*, 86(1), 54-66.
- Zakaria, E., & Ngah, N. (2011). A preliminary analysis of students' problem-posing ability and its relationship to attitudes towards problem solving. *Research Journal of Applied Sciences, Engineering and Technology*, 3(9), 866-870.
- Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology*, 25(1), 82-91.

# Factors Influencing Chinese Consumers' Continuous Use Intention for Cross-Border E-Commerce

**I-Ching Tung**

Stamford International University, Thailand

i-ching.tung@stamford.edu

**Yue Huang**

Stamford International University, Thailand

316346676@qq.com

**Jia Zhao**

Kunming University of Science and Technology, China

705895863@qq.com

**Wari Chokelumlerd**

Stamford International University, Thailand

wari.chokelumlerd@stamford.edu

**Areewan Cheewaprapanan**

Stamford International University, Thailand

areewan.cheewaprapanan@stamford.edu

## Abstract

This quantitative study investigates the factors influencing the continuous use intention of mobile terminal buyers to use cross-border e-commerce platforms for purchases. Data was collected during the period December 2020-January 2021 through online questionnaires and convenience sampling. 559 Chinese consumers who have had experience in cross-border online shopping in the past 6 months on cross-border mobile e-commerce platforms such as AliExpress, Amazon, eBay, and Wish in Yunnan province, China, were surveyed. Based on the psychological distance theory and the commitment trust theory, a theoretical model of influencing factors of user's continuous use intention was developed and a Structural Equation Model (SEM) analysis conducted. The results show that psychological distance (spatial, temporal, and social), communication quality, and customer satisfaction have a significantly positive impact on consumers' trust towards cross-border e-commerce platform and that opportunistic behavior is negatively related to consumers' trust. In the meantime, customer satisfaction, inputs cost, and relationship benefits have a positive impact on relationship commitment. In addition, both trust and relationship commitment turn out to have a significant effect on continuous use intention. These findings could provide cross-border e-commerce platforms marketers and merchants with valuable insights for developing effective marketing strategies and trust mechanisms between users and platform to improve platform service and enhance user stickiness.

**Keywords:** Commitment Trust Theory, Continuous Use Intention, Cross-Border E-Commerce, Psychological Distance Theory, Yunnan Province

## 1. Introduction

Cross-border e-commerce is commonly defined as consumer online shopping from merchants located in different areas or countries (Accenture, 2012). Transactions are made through internet and delivery/reception of the goods occurs via cross-border logistics. Another definition by Wang (2014) describes cross-border e-commerce as international e-commerce among different countries where “deals and transactions are made through an e-commerce platform, and goods are delivered through cross-border planning and management agreements” (p.141). When on November 11, 2014, Alibaba Group launched the Singles' Day Shopping Carnival for the first time, it focused on cross-border e-commerce, covered 217 countries and regions, generated 278 million logistics orders throughout the day and achieved a total turnover of 57.1 billion yuan, of which mobile phone accounted for 42.6 percent (Jing & Liang, 2011).

Cross-border e-commerce can help small and medium-sized foreign trade enterprises to expand overseas distribution channels, enhance international brand awareness, increase the transaction volume of goods, achieve sales growth, and promote China's import and export trade. Over the last decade, cross-border e-commerce has gradually become an important part of China's foreign trade as it has been boosted by the popularization of mobile phone terminals, the maturity of mobile communication technology and what it offers to people, most notably mobile banking, mobile payment and mobile shopping. Yet, research on mobile commerce combined with cross-border e-commerce, i.e., cross-border mobile e-commerce, is still in its infancy. In China, there is little research on cross-border mobile e-commerce. Most of the existing research on domestic local e-commerce buyers take PC-end e-commerce as a research perspective. This leads to a mismatch between supply and demand from a research perspective as, in spite of the fact that more mobile-end e-commerce findings are needed, most results pertain to PC-end e-commerce. Compared with PC-end e-commerce, what characterizes mobile e-commerce is portability, mobility, immediacy, identity identification, etc. (Zhang & Liu, 2011).

This study adopts the perspective of mobile terminal to study the influencing factors of individual buyers' willingness to continue using cross-border e-commerce platform. Mobile terminals are currently widely popular and will dominate e-commerce in the future. Much of the existing literature on mobile e-commerce focuses on local mobile e-commerce. Few studies examine cross-border mobile e-commerce even though global trade and cross-border mobile e-commerce business represent the future and are at the core of the development strategy of multinational corporations. It is therefore of great significance to study the continuing willingness of cross-border mobile e-commerce buyers with regard to both e-commerce platforms and businesses.

## 2. Literature Review and Hypotheses Development

### - *The Psychological Distance Theory*

Psychological distance refers to the cognitive distinction between the self and other instances such as people, events, or timeframe (Baltatescu, 2014; Huang, Burtch, Hong, & Polman, 2016). According to Trope, Liberman, and Wakslak (2007), psychological distance includes four dimensions, temporal distance (e.g. early or late), spatial distance (e.g. far or near), social distance (e.g. familiar or unfamiliar to oneself) and hypothetical distance (e.g. the certainty and ambiguity of something).

### ***- Relationship between Psychological Distance and Trust***

In general, an individual can perceive psychological distance through his direct experience (Liberman & Trope, 2008). While the increase of psychological distance will challenge trust and a sustained relationship, the decrease of psychological distance will increase trust and promote the establishment of a relationship (Harwood & Lin, 2010). Psychological distance plays a crucial role in influencing consumer behavior. A number of studies on psychological distance have confirmed its influence on consumer behavior. For example, Jin, Hu, and He (2014) determined that comments by buyers on recently purchased goods will more strongly influence other consumers' short-term purchase decisions. It has been shown that when two individuals are dissimilar, their psychological distance will increase (Mussweiler, Riiter, & Epstude, 2004). Therefore, when a consumer makes a comment or a recommendation, consumers with similar habits are more likely to be influenced than consumers without similar habits (Duhan, Johnson, Wilcox, & Harrel, 1997).

Several studies also indicate that geographical distance will affect consumers' judgment and final decision on goods (Fujita et al., 2006; Henderson, Fujita, Trope, & Liberman, 2006; Liviatan, Trope, & Liberman, 2008). In addition, Darke, Brady, Benedicktus, and Wilson (2016) found that for e-commerce companies, photos showing physical stores will help to reduce the psychological distance of consumers. Naturally, cross-border e-commerce is more geographically distant than local e-commerce. Psychological distance is therefore more important for building trust – by far the most essential factor in e-commerce – and establishing a relationship between consumers and merchants across borders. Reducing psychological distance has become the key to the success of cross-border e-commerce.

As we just saw, psychological distance has four dimensions: temporal, spatial, social, and hypothetical (Trope et al., 2007). However, only four dimensions of psychological distance are applicable to mobile e-commerce, namely, temporal, spatial, and social distance. Thus, only these three dimensions will be selected for this study. They are three of a number of factors affecting m-commerce trust, which, as we will see in subsequent sub-sections, include several other constructs influencing cross-border m-commerce. Each of these three distances will now be discussed.

#### *(i) Spatial Distance*

In mobile e-commerce, spatial distance indicates that mobile e-commerce connectivity is possible everywhere, i.e., it can be used conveniently almost anywhere and is not bound by the location of people. As Morgan and Hunt (1994) noted, regular communication enhances long-term relationships and narrows the distance between people. With the exponential growth of cross-border online shopping, it has become very convenient to use mobile phones. It makes people feel the need of products even if they are far away and make them feel that they are close on hand. Therefore, reducing the sense of spatial distance can significantly increase people's trust in cross-border mobile e-commerce. In this study, spatial distance is therefore defined as mobility, which means that a mobile end-client could make a transaction from any place (Schierz, Schilke, & Wirtz, 2010).

#### *(ii) Temporal Distance*

Temporal distance originally referred to the time at which something happens. In mobile e-commerce, it refers to the instantaneous connectivity of mobile e-commerce, that is, whenever

people wish to go shopping online, including across borders, they can do so through their mobile phones. Transient connectivity is considered to be one of the main reasons why mobile e-commerce exceeds traditional e-commerce (Lee & Park, 2006). As a non-economic benefit, instantaneous connectivity help reduce time costs and provide convenience. Both advantages relate to its perceived value (Kim, Chan, & Gupta, 2007). Mobile phone users can access internet service anytime and anywhere, and through Internet mobile phone users can communicate with retailers more quickly. Moorman, Deshpande, and Zaltman (1993) and Morgan and Hunt (1994) found that timely communication fosters trust. Besides, the faster communication, the greater the perception of interactivity. Thus, the reduction of temporal distance significantly increases people's trust in cross-border mobile e-commerce. When an individual makes a purchase decision, it is possible that he/she is not in a position to make that purchase due, for example, to a lack of internet connection, so he/she may end up postponing the decision to the near future. M-commerce overcomes the temporal distance. In this study, temporal distance refers to the fact that mobile phone users can conduct transactions more conveniently at any time through mobile terminals. In the context of m-commerce, temporal distance is reduced (Clarke, 2011). Therefore, this study uses immediacy to measure temporal distance.

### *(iii) Social Distance*

Social distance refers to the perception of familiarity or strangeness. People are willing to trust those around them, such as relatives, friends and colleagues, but remain suspicious of strangers. Social distance in mobile commerce relates to social influence and subjective norms. Venkatesh, Morris, Davis, and Davis (2003) defined social distance as an individual's perception of what important people around him/her think he/she should or should not do. For example, a person may be inclined to shop at a store but his/her friends and relatives all think it is very convenient to use online shopping and believe that it is quite outdated not to shop online. This person may end up shopping online instead under the influence of his/her friends and their social impact. In studies on mobile commerce, social influence has also been shown to affect user acceptance level (Chong & Chan, 2013), perceived usefulness, and intention behavior (Kalinic & Marinkovic, 2016). When users are encouraged by their colleagues, family, or friends, they tend to perceive that m-commerce is useful to them. Information from people close to them or important to them is more trustworthy and more influential. This is because people who share the information with them are likely to be similar to them one way or another. Since they are socially close, they are likely to share some preferences (Hernandez-Ortega, 2017). The language and behavior of these people who are relatively important will deeply influence our own language and behavior. This is known as social influence (Venkatesh, et al., 2003). In the context of m-commerce, this means that when an individual's relatives or friends shop with mobile phones, it is likely that that individual will think that if he/she cannot shop with a mobile phone, his/her friends will think he/she is outdated. Therefore, in this paper social distance will be measured in terms of social influence.

Since, as emphasized in the above discussion, from the perspective of cross-border buyers on mobile terminals, these three components of psychological distance may significantly affect trust and the building of a consumer-merchant relationship, the following hypothesis can thus be developed:

**H<sub>1</sub>.** *The reduction of the perceived spatial distance of mobile e-commerce positively*

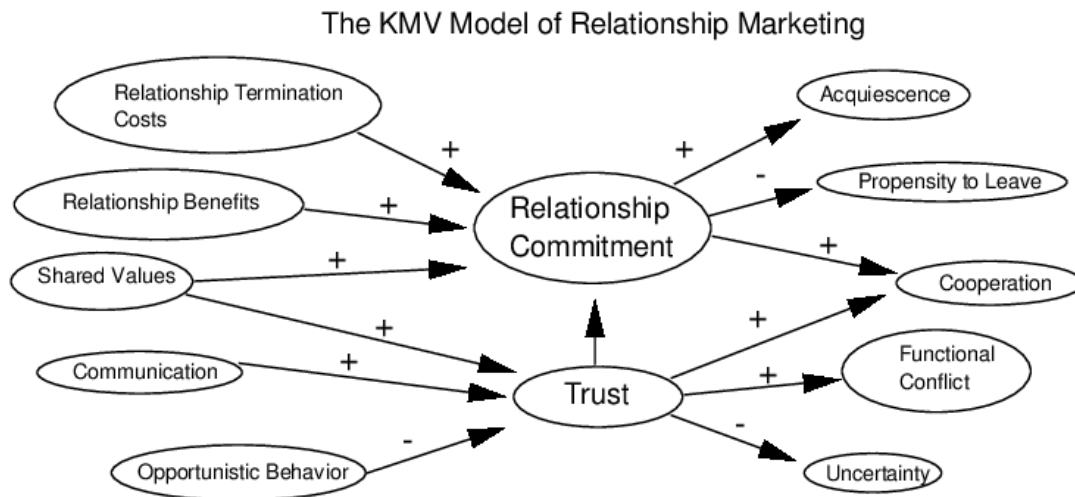
*affects users' trust in cross-border mobile e-commerce.*

**H<sub>2</sub>.** *The narrowing of the perceived temporal distance of mobile e-commerce positively affects users' trust in cross-border mobile e-commerce.*

**H<sub>3</sub>.** *The reduction of the perceived social distance of mobile e-commerce positively affects users' trust in cross-border mobile e-commerce.*

**- The Commitment-Trust Theory (CTT)**

The Commitment-Trust Theory (CTT) was first articulated by Morgan and Hunt in 1994 to describe a long-term business partnership (Li, Browne, & Wetherbe, 2006). It is based on the assumption that only when trust and commitment co-exist, can individuals and organizations become more efficient and productive (Mukherjee & Nath, 2007). In general, CTT is used to explore the reasons for the success and failure of strategic alliances (Mayer, Davis, & Schoorman, 1995). To show the basic factors and behaviors affecting trust and commitment, Morgan and Hunt (1994) developed the Key Mediating Variable model (KMV) of relationship marketing as shown in Figure 1.



**Figure 1:** The KMV Model of Relationship Marketing.

Source: Morgan and Hunt (1994)

The five antecedent variables of commitment and trust, which include relationship termination costs, relationship benefits, shared values, communication, and opportunistic behavior, will be discussed at length in the next several paragraphs since they either will be taken as constructs for this study or will serve as the basis for closely related constructs. In a nutshell, relationship termination costs refer to all the costs of switching from one relationship to another due to a lack of reliable alternative. They include a whole range of losses resulting from the termination of the relationship. Relationship benefits refer to the additional value that both parties derive from a business relationship. Shared values means that online distributors and consumers share the same values to enhance the relationship. Communication refers to the timely exchange of information between two parties in a relationship through formal or

informal means. As to opportunistic behavior, it refers to the act of cheating or violating the common interest to damage the relationship due to self-interest Morgan and Hunt (1994). Relationship commitment suggests that in long-term relationships, individuals will have a sense of commitment and feel dependent on their partner. They will be willing to establish a long-term relationship for mutual benefits and will develop a sense of trust and make decisions and take action accordingly, thereby reducing the perception of uncertainty (Mayer et al, 1995). As noted earlier, both commitment and trust are instrumental in building and maintaining strong relationships.

A number of researchers in the field of information systems have applied CTT to the study of online consumer behavior. Wang, Wang, and Liu (2016), for example, combined the Information System Success model with CTT to study consumer stickiness to group buying websites from the dual perspectives of technology and relationship. They found that satisfaction, relationship commitment and trust were the main components of stickiness. Mukherjee and Nath (2007) focused on the digital business environment and found that in addition to the five antecedent variables mentioned in CTT, privacy and security issues also affect consumer behaviors in terms of word of mouth, purchase intention and sticking relationship. Li et al. (2006) applied CTT to B2C trading companies and determined that that two other factors, investment scale and satisfaction, also positively affected commitment relationship and trust. Given the presence of CTT in the Internet business environment, this study applies the model to cross-border mobile e-commerce. For one, mobile e-commerce is more convenient and faster than traditional e-commerce (Ko, Eun, & Lee, 2009). The use of CTT will help to determine how successful cross-border mobile e-commerce is in terms of commitment relationship.

#### - *Communication Quality*

Anderson and Narus (1990) defined communication as sharing timely and meaningful information in a formal or informal manner. Communication quality is crucial to the development of trust and a better conveyance of information (McAllister & Daniel, 1995). People not only use communication as the main way of exchanging information, but also as a way of deepening the understanding of one another, increasing feelings, and cultivating mutual trust.

Communication quality is an essential component of trust in the e-commerce field (Li et al., 2006). It is easy to imagine that if we desire to buy goods through e-commerce or mobile e-commerce, both the uncertainty of goods and the precautionary psychology of merchants will reduce our trust in this platform, thus reducing our purchase intention. Therefore, communication between the platform's customer service staff and buyers as well as between merchants and buyers play a pivotal role. Customers' perception of costs can be reduced and the perception of benefits increased through the platform's services and merchants' detailed explanations. As a result, customers may have a more "adventurous spirit" in purchasing behavior (Li et al., 2006).

Compared with traditional e-commerce, communication in mobile commerce is more convenient since it can be carried out anytime and anywhere, as we just saw. Buyers can ask questions to platforms and merchants anytime and anywhere. Due to the time difference

between buyers and sellers in cross-border e-commerce, the immediacy of communication becomes more vital. With mobile e-commerce, buyers do not have to wait until they get home to log on to the website and merchants do not have to wait until they go to the office to answer questions (Kim et al., 2007). Through timely and effective communication, trust between buyers and sellers can be established more quickly (Wang, 2014). In this study, communication quality thus refers to whether the mobile commerce application could remind customers of its new functions, provide customers with timely information and activity opportunities and take into account the suggestions and advice of customers to carry out marketing. Therefore, we propose the following hypotheses:

**H4.** *Communication quality positively influences users' trust in cross-border mobile e-commerce.*

#### **- Opportunistic Behavior**

Lewicki and Bunker (1995) defined opportunistic behavior as the deliberate violation of rules or deliberate distortion of information by both parties to an agreement that is extremely damaging to trust. Any unanticipated tampering of information and failure to perform obligations that should be performed are considered opportunistic (John, 1984). For e-commerce, the honesty of merchants is closely related to the probability of opportunistic behavior, which is also a prerequisite for consumer trust (Lee & Turban, 2001). In the context of cross-border m-commerce, opportunistic behavior affect both buyers and sellers (Guo et al., 2017). Although opportunistic behaviors often occur in e-commerce due to information asymmetry and lack of experience, more and more platforms and merchants are paying attention to their monitoring and elimination. This is because the consequences of speculation are so serious that, even if only once, the platform will lose customers' trust, merchants will hurt consumers, and even the brands and related stores will be affected.

Opportunistic behavior has a great negative impact on the integrity of online shopping, where high standards and professional ethics are the opposite of opportunistic behavior. Whether merchants have high or low moral standards will greatly reduce opportunistic behaviors (Cho & Lee, 2017). In e-commerce, whether merchants have high standards of ethics is particularly important for online transactions and the establishment of trust (Mukherjee & Nath, 2007). In this study, opportunistic behavior thus has to do with: whether the mobile commerce platform slightly changes the fact; whether it promises to do something but does not actually do it; whether it provides consumers with the support they are supposed to provide; and whether there is no formal or informal agreement for the benefits of the platform. As a result, the following hypotheses can be developed:

**H5.** *Opportunistic behavior negatively affects users' trust in cross-border mobile e-commerce.*

#### **- Consumer Satisfaction**

In this study, unlike in the KMV model, shared values will not be used as a variable in the framework model. The concept of customer satisfaction will be used instead. For one, satisfaction represents in part shared values since as long as consumers and businesses share the same values, consumers will tend to be satisfied with those that share the same values. For another, satisfaction is often used as a major variable in studies in the field of e-commerce and

its influence on other variables can also be significant. Shared values refer to people's shared beliefs about behaviors, ideas, goals, and norms, and the cognitive patterns of these perceptions. In short, it is the belief that certain actions, ideas, goals, or norms are important, correct, and appropriate (Morgan & Hunt, 1994). As a comprehensive evaluation, satisfaction is more influential than opportunistic behavior. Rusbult (1983) empirical study shows that satisfaction has a positive impact on relationship commitment. Focusing on mobile commerce, Lin et al. (2014) also treated satisfaction as one of the main factors associated with trust. In this research, consumer satisfaction mainly reflects consumers' comprehensive satisfaction with the platform, pleasure of the platform experience, and estimation of the platform's ability to meet their own needs. Therefore, the following hypothesis can be formed:

**H<sub>6</sub>.** *Customer satisfaction positively influences users' trust in cross-border mobile e-commerce.*

**H<sub>7</sub>.** *Customer satisfaction positively influences users' relationship commitment to cross-border mobile e-commerce.*

### **- Input Costs**

Relationship termination costs may be defined as all anticipated losses arising from the termination of the relationship, including lack of potential partners, termination costs, and switching costs (Morgan & Hunt, 1994). Relationship termination costs can be incurred as well in the e-commerce industry between consumers and the e-commerce platform and are mostly related to consumers' input in the platform and the store. These inputs include both time and economic inputs and are known as consumer input costs (Li et al, 2006). Input costs are ubiquitous for both local and cross-border e-commerce companies. However, input costs are more influential in the relationship commitment of users in the context of cross-border e-commerce, because cross-border e-commerce is not yet as prevalent or pervasive as local e-commerce, and there is less selectivity than in local e-commerce. Once the buying and selling relationship is established, and once input costs are incurred, it is very difficult to change the platforms or merchants. In light of the above, in this study, relationship termination costs will therefore mainly refer to the time users spend on mobile e-commerce websites, the weight of mobile e-commerce in consumers' lives, the perceived cost of learning to use mobile e-commerce, and comparisons with the usage of similar platforms. Therefore, the following hypotheses can be developed:

**H<sub>8</sub>.** *Input costs positively influence users' relationship commitment to cross-border mobile e-commerce.*

### **- Relationship Benefits**

Relationship benefits refer to the customer value, which partners give to each other in the process of cooperation (Gusarova, Fraser, & Alderson, 2012). The value arises from the connection and a sense of belonging between them. It is reflected in the personalization of the service and the reward of loyalty (Mukherjee & Nath, 2007). For example, if a website provides consumers with more personalized information or a higher amount of information, which they are interested in, then consumers will perceive this information as a relationship benefit. Consumers also benefit from sites that offer special promotions or provides offers tailored to their individual needs. Over time, consumers will subconsciously form a sense of belonging to

the site, something known as relationship commitment. In this study, relationship benefits will thus be measured in terms of whether merchants will give special discounts and rebates to common customers, whether cross-border mobile e-commerce platforms will provide users with the information they need, whether merchants will acknowledge users' complaints, and whether advertising and preferential activities provided by cross-border mobile e-commerce platforms are based on personal preferences. Hence the following hypotheses:

**H<sub>9</sub>.** *Relationship benefits positively influence users' relationship commitment to cross-border mobile e-commerce.*

### **- Trust, Relationship Commitment, and Continuous Use Intention**

Trust is crucial for the establishment and maintenance of a relationship between partners. The existence of trust greatly reduce perceived uncertainty (Mayer et al, 1995). The more trust there is, the more interdependent cooperation there will be and the more satisfied and adventurous partners will be with each other. Another major factor in promoting win-win cooperation is relationship commitment, which can give both parties a sense of belonging (Moorman, Zaltman, & Deshpande, 1992) In a long-term cooperative relationship, distrust or suspicion reduce the commitment to each other as well as mutual dependence and a sense of belonging, whereas trust increases commitment and belongingness (Mukherjee & Nath, 2007). Trust and relationship commitment play complementary roles in maintaining the stable development of cooperative relationships and future cooperation (Morgan & Hunt, 1994). Some studies have shown that trust and relationship commitment are positively correlated in investment model and commitment trust theory (Mukherjee & Nath, 2007; Wieselquist, et al., 1999). With regard to e-commerce, trust and relationship commitment have also been proved to significantly influence intentional behaviors in terms of positive words of mouth, purchase intention, and continuous use intention (Li et al, 2006; Mukherjee & Nath, 2007).

It is not difficult to imagine that if a consumer is accustomed to buying a certain product from a certain merchant, then this consumer will become dependent on that merchant. This kind of dependence not only comes from the trust generated by the daily transaction behavior but also from the consumer's sense of belonging to the business. He/she will feel that if he/she wants to buy this item, there is no reason or lingering doubt to search for another long-term cooperative merchant to buy from because this merchant can be trusted and this consumer has developed a sense of belonging to this merchant. This phenomenon is also applicable to mobile e-commerce. Wang, Shen, and Sun's (2013) study on consumer behavior toward mobile e-commerce shows that trust is an important prerequisite factor affecting consumers' purchase intention.

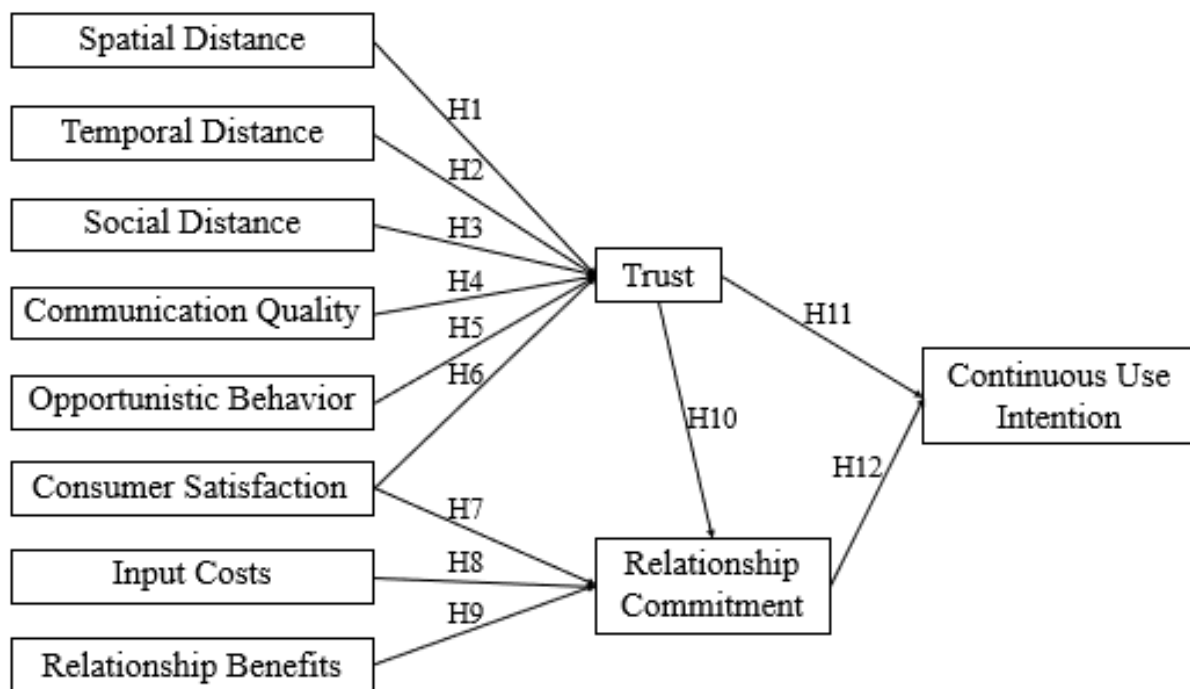
Based on the above, in this study, trust in the context of cross-border mobile e-commerce therefore refers to users' comprehensive evaluation of the most commonly used cross-border mobile e-commerce applications and involve considerations such as whether they can be trusted and meet consumers' needs as promised by merchants and whether consumers' interests are put first. As to relationship commitment, it is essentially about whether users' hope that the cross-border mobile e-commerce application will continue developing is met and whether it is therefore worth the effort maintaining relations with the cross-border mobile e-commerce application. It is also about whether users will miss the application when the cross-border mobile e-commerce application disappears and whether they have a sense of belonging with

these platforms. Finally, continuous use intention has to do with whether consumers will use the cross-border mobile e-commerce application in the near future, whether they feel they are becoming more and more interested in the cross-border mobile e-commerce application, and whether they will recommend its use to their friends and relatives. Therefore, the following hypothesis can be proposed:

**H<sub>10</sub>.** *Users' trust in cross-border mobile e-commerce positively influences their relationship commitment to cross-border mobile e-commerce.*

**H<sub>11</sub>.** *Users' trust in cross-border mobile e-commerce positively influences their continuous use intention.*

**H<sub>12</sub>.** *Users' relationship commitment to cross-border mobile e-commerce positively influences their continuous use intention.*



**Figure 2:** Conceptual Framework (Developed by the Authors for this Study)

### 3. Research Methodology

#### - Sampling and Data Collection

The population of this quantitative study comprises Chinese consumers in Yunnan province who have had experience in cross-border online shopping in the past 6 month with cross-border mobile e-commerce platforms such as AliExpress, Amazon, eBay, or Wish to name a few. A self-administered survey questionnaire was used as the main research instrument and distributed electronically during the period December 2020-January 2021. Data was collected using the convenience sampling approach and the sample size calculated using Cochran's formula at a confidence level and error term of 95% and 5%, respectively (Cochran, 1977). The sample size was 385. A total of 760 questionnaires were received. After eliminating

insincere or incomplete responses through data filtering, a sample of 559 usable responses was ultimately used for analysis.

#### - Measurement Development

The questionnaire is divided into 2 sections: The first section pertains to demographic information and includes such questions as gender, age, education, occupation, etc. The second section contains 44 items designed to measure constructs as recommended in the conceptual framework developed for this study. Each construct was rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The items in the questionnaire were developed by adjusting measures validated by other researchers or by converting the definition of the constructs into a questionnaire format. The constructs in this model were adapted from previous studies and multi-item scales were used for these constructs. The detailed measurement items of the constructs are presented in Table 1.

**Table 1:** Sources of Measurement Item in the Questionnaire

| Construct                         | Measurement Item  | Source                      |
|-----------------------------------|---|-----------------------------|
| <b>Spatial Distance (SD)</b>      | I can use mobile e-commerce anywhere.   | Kalinic & Marinkovic (2016) |
|                                   | I can use mobile e-commerce while traveling.  |                             |
|                                   | It is very convenient to use mobile e-commerce because I always have my mobile phone with me.             |                             |
| <b>Temporal Distance (TD)</b>     | I can use mobile e-commerce any time.   | Ko, Eun, & Lee (2009)       |
|                                   | I can confirm orders any time through my mobile phone.  |                             |
|                                   | Mobile e-commerce provides me with timely services and updates information I am interested in.            |                             |
|                                   | Mobile e-commerce can answer my questions at any time.  |                             |
| <b>Social Distance (SoD)</b>      | The people who influenced my use of mobile e-commerce want me to keep using it.                           | Lu (2014)                   |
|                                   | The people who matter to me think I should keep using mobile e-commerce.                                  |                             |
|                                   | My friends think I need to continue using mobile e-commerce.  |                             |
| <b>Communication Quality (CQ)</b> | This mobile cross-border e-commerce platform will remind me of its new features.                          | Li. et al. (2006)           |
|                                   | This mobile cross-border e-commerce platform gives me first-hand information.                             |                             |
|                                   | The mobile cross-border e-commerce platform is reluctant to give me a lot of useful information.          |                             |
|                                   | This mobile cross-border e-commerce platform is eager to provide me with frequent activity opportunities. |                             |

|                                    |  |                         |
|------------------------------------|--|-------------------------|
|                                    | This mobile cross-border e-commerce platform will heed my advice for marketing.  |                         |
| <b>Opportunistic Behavior (OB)</b> | This mobile cross-border e-commerce platform will distort reality slightly.  |                         |
|                                    | This mobile cross-border e-commerce platform promises things it won't actually do.                                       |                         |
|                                    | This mobile cross-border e-commerce platform failed to provide the support that should have been provided.               |                         |
|                                    | This cross-border mobile ecommerce platform will ignore any formal and informal agreements to protect its own interests. |                         |
| <b>Consumer Satisfaction (CS)</b>  | I am very satisfied with this cross-border mobile e-commerce application.  |                         |
|                                    | My shopping experience on this cross-border mobile e-commerce application was very enjoyable                             |                         |
|                                    | This cross-border mobile e-commerce application makes me happy.  |                         |
|                                    | This cross-border mobile e-commerce application can meet my needs.   |                         |
| <b>Input Costs (IC)</b>            | I have invested a lot of time in this cross-border mobile e-commerce application.  |                         |
|                                    | Many aspects of my life relate to this cross-border mobile e-commerce application.                                       |                         |
|                                    | I spent a lot of time learning how to use this cross-border mobile e-commerce application.                               |                         |
|                                    | I spend a lot of time on this cross-border mobile e-commerce application.  |                         |
|                                    | I spent more on this cross-border mobile e-commerce application than any other application.                              |                         |
| <b>Relationship Benefits (RB)</b>  | Platform merchants will offer special offers to frequent users.  | Mukherjee & Nath (2007) |
|                                    | Platform merchants will give regular users some rebates.   |                         |
|                                    | This cross-border mobile e-commerce application will provide users with the information they need.                       |                         |
|                                    | Platform vendors pay attention to user complaints.   |                         |
|                                    | This cross-border mobile e-commerce application offers ads and promotions based on                                       |                         |

|                                       |  |                             |
|---------------------------------------|--|-----------------------------|
|                                       | personal preference.   |                             |
| <b>Trust (TR)</b>                     | Cross-border mobile e-commerce applications are trustworthy.   | Kim, Ferrin, & Rao (2009)   |
|                                       | Merchants on this cross-border mobile e-commerce application gave me the impression that they kept their promises. |                             |
|                                       | I believe that this cross-border mobile e-commerce application catered to my best interests.                       |                             |
| <b>Relationship Commitment (RC)</b>   | I hope this cross-border mobile e-commerce platform will continue to develop.                                      | Wang. et al. (2016)         |
|                                       | My relationship with this mobile cross-border e-commerce platform is worth the effort.                             |                             |
|                                       | I would be sorry if this mobile cross-border mobile ecommerce platform disappeared.                                |                             |
|                                       | I have a sense of belonging to this mobile cross-border mobile e-commerce platform.                                |                             |
| <b>Continuous Use Intention (CUI)</b> | I would like to continue to use this mobile cross-border mobile e-commerce platform for shopping.                  | Kalinic & Marinkovic (2016) |
|                                       | I will look at this mobile cross-border mobile e-commerce platform as a common way of shopping.                    |                             |
|                                       | I will recommend this cross-border mobile e-commerce platform to my friends, relatives, and others.                |                             |
|                                       | I will increase the frequency shopping on this platform.   |                             |

*- Data Analysis*

Structural equation modeling (SEM) was used to analyze the data and test hypothesis. SEM is a combination of confirmatory factor analysis and path analysis. Since, as a multivariate technique it can estimate a series of interrelated dependent relationships simultaneously, it is considered the most appropriate method of data analysis to test multi-level conceptual frameworks such as the one developed for this study and shown in Figure 2. It applies the multivariate analysis to the model in a holistic manner (Hair et al., 2013).

**4. Results**

*- Descriptive Analysis*

Out of the 559 respondents, 391 were female users and 168 male users. The higher number of female respondents is most likely due to the fact that generally women prefer shopping more than men. The population surveyed was young (between 18 and 30 years old) and well educated; most of the respondents were middle-or low-income students and office workers with a

bachelor degree or above. A majority of them had 6-9 years of experience shopping online. In addition, in terms of amount spent on purchases on cross-border e-commerce platforms, most respondents spent between RMB500 and RMB1,500 per month. Table 2 provides detailed demographic information.

**Table 2:** Demographic Profile of the Respondents

| Demographics Characteristics   |                     | Frequency | % (n=559) |
|--|---------------------|-----------|-----------|
| <b>Gender</b>  | Male                | 168       | 30.05%    |
|  | Female              | 391       | 69.95%    |
| <b>Age</b>   | Under 18            | 35        | 6.26%     |
|  | 19-30               | 257       | 45.97%    |
|  | 31-40               | 190       | 33.99%    |
|  | 41-50               | 52        | 9.30%     |
| <b>Education Level</b>   | Above 51            | 25        | 4.47%     |
|  | High school or less | 62        | 11.09%    |
|  | Diploma             | 79        | 14.13%    |
|  | Bachelor's Degree   | 263       | 47.05%    |
| <b>Years of Internet Use</b>   | Master's Degree     | 139       | 24.87%    |
|  | Doctoral Degree     | 16        | 2.86%     |
|  | < 2 Years           | 47        | 8.41%     |
|  | 3-5 Years           | 126       | 22.54%    |
| <b>Occupation</b>  | 6-9 Years           | 315       | 56.35%    |
|  | > 10 Years          | 71        | 12.70%    |
|  | Student             | 267       | 47.76%    |
|  | Office worker       | 256       | 45.80%    |
| <b>Amount of Monthly Purchase on Cross-border E-commerce Platforms</b> | Self-employed       | 29        | 5.19%     |
|  | Others              | 7         | 1.25%     |
|  | <500RMB             | 36        | 6.44%     |
|  | 501–1,500 RMB       | 243       | 43.47%    |
| 1,501–2,500 RMB  | 127                 | 22.72%    |           |
| 2,501–3,500 RMB  | 92                  | 16.46%    |           |
| >3,501 RMB   | 61                  | 10.91%    |           |

*- Reliability and Validity Assessment*

Reliability is “an assessment of the degree of consistency between multiple measurements of a variable” (Hair et al., 2013, p.123). Cronbach’s alpha was used to measure the reliability of the measures. Based on Hair et al. (2013), the value of Cronbach’s alpha coefficient of 0.7 was taken as the threshold level in order to ensure the stability and consistency of the instruments. As shown in Table 3, the Cronbach’s alpha value of all constructs were above 0.7. The reliability of the construct was established.

Validity focuses on identifying the extent to which the research concept is correctly represented by the measures (Hair et al., 2013). In this study, construct validity was measured by utilizing convergent and discriminant validity. Convergent validity was assessed using Composite Reliability (CR), Factor Loadings, and Average Variance Extracted (AVE). If the value of CR reached 0.7 or above and if the value of Factor Loadings and AVE both reached 0.5 or above, this meant that the measurement model had good convergence validity (Hair et al., 2013). As can be seen in Table 3, all indicators met the standards, indicating that the measurement model in this study had good convergent validity. In order to determine discriminant validity, the square root of AVE of each construct was compared to the squared correlations of other constructs. As shown in Table 4, the square root of the AVE value of each construct was greater than the squared correlations of this construct as compared to any other construct. Therefore, the discriminant validity was established (Hair et al., 2013).

**Table 3:** Results of Validity and Reliability Analysis

| <b>Factor</b>                      | <b>Indicator</b> | <b>Factor Loading</b> | <b>AVE</b> | <b>CR</b> | <b>Cronbach’s Alpha</b> |
|------------------------------------|------------------|-----------------------|------------|-----------|-------------------------|
| <b>Spatial Distance (SD)</b>       | <b>SD1</b>       | 0.821                 | 0.782      | 0.954     | 0.934                   |
|                                    | <b>SD2</b>       | 0.804                 |            |           |                         |
|                                    | <b>SD3</b>       | 0.726                 |            |           |                         |
| <b>Temporal Distance (TD)</b>      | <b>TD1</b>       | 0.785                 | 0.886      | 0.949     | 0.928                   |
|                                    | <b>TD2</b>       | 0.739                 |            |           |                         |
|                                    | <b>TD3</b>       | 0.788                 |            |           |                         |
|                                    | <b>TD4</b>       | 0.820                 |            |           |                         |
| <b>Social Distance (SoD)</b>       | <b>SoD1</b>      | 0.866                 | 0.788      | 0.925     | 0.912                   |
|                                    | <b>SoD2</b>      | 0.859                 |            |           |                         |
|                                    | <b>SoD3</b>      | 0.818                 |            |           |                         |
| <b>Communication Quality (CQ)</b>  | <b>CQ1</b>       | 0.793                 | 0.854      | 0.936     | 0.903                   |
|                                    | <b>CQ2</b>       | 0.825                 |            |           |                         |
|                                    | <b>CQ3</b>       | 0.837                 |            |           |                         |
|                                    | <b>CQ4</b>       | 0.941                 |            |           |                         |
|                                    | <b>CQ5</b>       | 0.918                 |            |           |                         |
| <b>Opportunistic Behavior (OB)</b> | <b>OB1</b>       | 0.890                 | 0.833      | 0.913     | 0.899                   |
|                                    | <b>OB2</b>       | 0.893                 |            |           |                         |
|                                    | <b>OB3</b>       | 0.924                 |            |           |                         |
|                                    | <b>OB4</b>       | 0.855                 |            |           |                         |
| <b>Consumer</b>                    | <b>CS1</b>       | 0.861                 | 0.865      | 0.948     | 0.931                   |

|                                       |             |       |       |       |       |
|---------------------------------------|-------------|-------|-------|-------|-------|
| <b>Satisfaction (CS)</b>              | <b>CS2</b>  | 0.853 | 0.779 | 0.935 | 0.914 |
|                                       | <b>CS3</b>  | 0.842 |       |       |       |
|                                       | <b>CS4</b>  | 0.883 |       |       |       |
| <b>Input Costs (IC)</b>               | <b>IC1</b>  | 0.936 | 0.883 | 0.937 | 0.922 |
|                                       | <b>IC2</b>  | 0.955 |       |       |       |
|                                       | <b>IC3</b>  | 0.917 |       |       |       |
|                                       | <b>IC4</b>  | 0.865 |       |       |       |
|                                       | <b>IC5</b>  | 0.922 |       |       |       |
| <b>Relationship Benefits (RB)</b>     | <b>RB1</b>  | 0.959 | 0.874 | 0.958 | 0.938 |
|                                       | <b>RB2</b>  | 0.897 |       |       |       |
|                                       | <b>RB3</b>  | 0.834 |       |       |       |
|                                       | <b>RB4</b>  | 0.858 |       |       |       |
|                                       | <b>RB5</b>  | 0.899 |       |       |       |
| <b>Trust (TR)</b>                     | <b>TR1</b>  | 0.961 | 0.835 | 0.966 | 0.941 |
|                                       | <b>TR2</b>  | 0.914 |       |       |       |
|                                       | <b>TR3</b>  | 0.912 |       |       |       |
| <b>Relationship Commitment (RC)</b>   | <b>RC1</b>  | 0.906 | 0.827 | 0.935 | 0.952 |
|                                       | <b>RC2</b>  | 0.907 |       |       |       |
|                                       | <b>RC3</b>  | 0.874 |       |       |       |
|                                       | <b>RC4</b>  | 0.924 |       |       |       |
| <b>Continuous Use Intention (CUI)</b> | <b>CUI1</b> | 0.912 | 0.827 | 0.935 | 0.952 |
|                                       | <b>CUI2</b> | 0.908 |       |       |       |
|                                       | <b>CUI3</b> | 0.925 |       |       |       |
|                                       | <b>CUI4</b> | 0.913 |       |       |       |

**Table 4:** Discriminant Validity of Scale Test

| Variable   | SD           | TD           | SoD          | CQ           | OB           | CS           | IC           | RB           | TR           | RC           | CUI          |
|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>SD</b>  | <b>0.832</b> |              |              |              |              |              |              |              |              |              |              |
| <b>TD</b>  | 0.656        | <b>0.912</b> |              |              |              |              |              |              |              |              |              |
| <b>SoD</b> | 0.684        | 0.589        | <b>0.903</b> |              |              |              |              |              |              |              |              |
| <b>CQ</b>  | 0.621        | 0.559        | 0.725        | <b>0.854</b> |              |              |              |              |              |              |              |
| <b>OB</b>  | -0.596       | -0.498       | -0.662       | -0.795       | <b>0.891</b> |              |              |              |              |              |              |
| <b>CS</b>  | 0.696        | 0.623        | 0.596        | 0.745        | -0.722       | <b>0.836</b> |              |              |              |              |              |
| <b>IC</b>  | 0.638        | 0.663        | 0.689        | 0.702        | -0.781       | 0.789        | <b>0.877</b> |              |              |              |              |
| <b>RB</b>  | 0.735        | 0.678        | 0.739        | 0.751        | -0.596       | 0.741        | 0.781        | <b>0.882</b> |              |              |              |
| <b>TR</b>  | 0.759        | 0.639        | 0.781        | 0.795        | -0.689       | 0.681        | 0.792        | 0.742        | <b>0.896</b> |              |              |
| <b>RC</b>  | 0.781        | 0.628        | 0.775        | 0.698        | -0.781       | 0.669        | 0.772        | 0.778        | 0.815        | <b>0.935</b> |              |
| <b>CUI</b> | 0.753        | 0.602        | 0.628        | 0.706        | -0.692       | 0.731        | 0.715        | 0.713        | 0.768        | 0.841        | <b>0.941</b> |

### - Measurement and Structural Model Analysis

It is generally accepted that if the implied covariance structure of the model is similar to that of the sample data, as implied by the acceptable value of the goodness of fit index (GFI), the model is considered appropriate (Cheung & Rensvold, 2002). The authors first verified and evaluated the measurement model and then analyzed and fitted the structural model. As indicated in Table 5, the  $\chi^2/df$  of the structural equation model is 2.011 ( $P=0.000$ ), which is less than 3. RMSEA is 0.043, which is smaller than the minimum standard of 0.05. CFI is 0.925, AGFI is 0.926, NFI is 0.936, and GFI is 0.969, all of which are greater than the minimum standard of 0.9 (Kline, 2011). Therefore, all the indices of the model met the evaluation standard, thereby indicating that the theoretical model presented in the study aligned with the actual survey data.

**Table 5:** Fit Indices of Measurement and Structural Models

| Fit indices        | $\chi^2/df$ | GFI   | AGFI  | NFI   | CFI   | RMSEA |
|--------------------|-------------|-------|-------|-------|-------|-------|
| Recommended Values | <3          | >0.9  | >0.8  | >0.9  | >0.9  | <0.05 |
| Measurement Model  | 2.032       | 0.923 | 0.928 | 0.932 | 0.968 | 0.045 |
| Structural Model   | 2.011       | 0.925 | 0.926 | 0.936 | 0.969 | 0.043 |

### - Results of Hypotheses Testing

Table 6 shows the standardized path coefficient and path significance for each of the hypotheses and indicates that all the hypotheses proposed in this paper were all supported. With regard to H<sub>1</sub>, H<sub>2</sub>, and H<sub>3</sub>, it can be observed that there is a significant and positive correlation between psychological distance, including spatial distance ( $\beta= 0.351$ ,  $p<0.001$ ), temporal distance ( $\beta= 0.169$ ,  $p<0.001$ ) and social distance ( $\beta= 0.234$ ,  $p<0.001$ ), and user trust in cross-border mobile e-commerce, which means that H<sub>1</sub>, H<sub>2</sub>, and H<sub>3</sub> were supported. As to H<sub>4</sub>, H<sub>5</sub>, and H<sub>6</sub>, communication quality ( $\beta= 0.198$ ,  $p<0.001$ ) and consumer satisfaction ( $\beta= 0.432$ ,  $p<0.001$ ) have a significantly positive effect on user trust in cross-border mobile e-commerce, whereas opportunistic behavior ( $\beta= -0.265$ ,  $p<0.001$ ) was found to have a negative effect on user trust, thereby supporting H<sub>4</sub>, H<sub>5</sub>, and H<sub>6</sub>.

Similarly, a positive link existed between relationship commitment and consumer satisfaction ( $\beta=0.195$ ,  $p<0.001$ ), input cost ( $\beta=0.136$ ,  $p<0.001$ ) and input cost ( $\beta=0.298$ ,  $p<0.001$ ), which means that H<sub>7</sub>, H<sub>8</sub>, and H<sub>9</sub> were all supported. When H<sub>10</sub> and H<sub>11</sub> were examined, it was found that user trust was positively correlated with both relationship commitment ( $\beta=0.426$ ,  $p<0.001$ ) and continuous use intention ( $\beta=0.485$ ,  $p<0.001$ ); H<sub>10</sub> and H<sub>11</sub> were supported. The standardized path coefficients also presented an obvious positive correlation between relationship commitment and continuous use intention ( $\beta=0.598$ ,  $p<0.001$ ). Hence, H<sub>12</sub> was fully verified.

**Table 6:** Test Results of Research Hypothesis

| Hypothesis      | Path   | Path Coefficient ( $\beta$ ) | S.E.  | C.R.      | Results   |
|-----------------|--------|------------------------------|-------|-----------|-----------|
| H <sub>1</sub>  | SD→TR  | 0.351                        | 0.042 | 6.720***  | Supported |
| H <sub>2</sub>  | TD→TR  | 0.169                        | 0.029 | 4.358***  | Supported |
| H <sub>3</sub>  | SoD→TR | 0.234                        | 0.046 | 5.365***  | Supported |
| H <sub>4</sub>  | CQ→TR  | 0.198                        | 0.058 | 4.529***  | Supported |
| H <sub>5</sub>  | OB→TR  | -0.265                       | 0.056 | -4.962*** | Supported |
| H <sub>6</sub>  | CS→TR  | 0.432                        | 0.043 | 5.298***  | Supported |
| H <sub>7</sub>  | CS→RC  | 0.195                        | 0.039 | 8.519***  | Supported |
| H <sub>8</sub>  | IC→RC  | 0.136                        | 0.042 | 5.289***  | Supported |
| H <sub>9</sub>  | RC→RC  | 0.298                        | 0.038 | 4.526***  | Supported |
| H <sub>10</sub> | TR→RC  | 0.426                        | 0.049 | 7.956***  | Supported |
| H <sub>11</sub> | TR→CUI | 0.485                        | 0.041 | 8.925***  | Supported |
| H <sub>12</sub> | RC→CUI | 0.598                        | 0.034 | 9.513***  | Supported |

Note: \*P< 0.05; \*\*P<0.01; \*\*\*P<0.001

## 5. Discussion

Recall that the aim of this study was to investigate a number of factors that influence Chinese consumers' trust towards cross-border e-commerce platforms and the continuous use intention. These include psychological distance (spatial, temporal, and social), communication quality, customer satisfaction, opportunistic behavior, inputs costs, and relationship benefits. It is expected that the findings of this research study can help Chinese people involved in cross-border e-commerce development and enhance China's cross-border trade position in the global economy. From the research results, we extracted six factors that were found to be conducive to promoting the use behavior of buyers, and one factor that hinders buyers from using cross-border mobile e-commerce.

Firstly, the positive influence of the perceived distance (both spatial and temporal) inherent in mobile e-commerce on trust in cross-border mobile e-commerce can affect users' behavior using mobile e-commerce. This finding is consistent with Kim, Zhang, and Li's (2008) study, in which it was found that users' behavior toward the use of mobile e-commerce was impacted by the psychological distance of users and products. Perceived distance mainly reflects the fact that mobile e-commerce has characteristics that can be used anytime and anywhere. This is precisely the main difference – and advantage – of mobile e-commerce as compared with traditional PC terminal e-commerce. Therefore, e-commerce platform enterprises and cross-border e-commerce platform enterprises can market their products to consumers based on the

convenience of mobile terminal. In particular, cross-border e-commerce platform enterprises could channel PC customers to mobile phones through marketing means so as to reduce customers' perception of cross-border distance and, as a result, increase their trust in cross-border e-commerce.

Secondly, social distance is another personal perception factor that influence users' willingness to continue using. This result is in keeping with Liu and Xu's (2015) findings. They found that social distance affected the choice of consumers' preferences. This is mostly due to people's herd mentality, especially their willingness to follow people close to them, such as for example, relatives, friends, or colleagues. Thus, e-commerce platform enterprises may take advantage of this trend to promote mobile e-commerce and cross-border mobile e-commerce. They could increase the utilization rate of customers through exclusive preferential activities or coupons, recommendation and reward mechanism on mobile phones. Compared with enterprises' direct promotion of the system or products to customers, interpersonal promotion is more effective, particularly among those familiar with the system. This would greatly increase customers' trust in the system and products and thus promote their use behavior.

Thirdly, communication quality positively affects users' trust in e-commerce platform enterprises. The result is consistent with a previous research by Li et al. (2006) who determined that communication is a key factor influencing user's trust in online shopping. Compared with traditional e-commerce, convenience is the biggest advantage of mobile e-commerce. This is not only reflected in the browsing of product information and the purchase of products, but also in the instant communication with platforms and merchants. Communication quality also stems from the ability to solve customer problems and the willingness to communicate effectively. Due to cultural, time, and language differences, communication issues are quite critical in cross-border situations. Therefore, the professionalism and attitude of the platform in communicating with customers and sellers largely determine whether a cross-border e-commerce platform has the ability to attract more users and become quite successful.

Fourthly, among all the variables in this study, opportunistic behavior is the only factor that has a negative effect on trust. Whether it is traditional or mobile e-commerce and local or cross-border e-commerce, the impact of opportunistic behavior on consumers and sellers is extremely serious. This result is consistent with Guo et al.'s (2017) study, in which a significant relationship between opportunistic behavior and users' trust was found. The platform should clearly describe the rules and regulations applicable as well as the policies and fees charged by the seller. As to customers, the platform should be accountable to them. On the one hand, platforms cannot cheat consumers by "peddling power for personal gain," increase profit or reduce economic losses. On the other hand, the platform needs to strictly control the opportunistic behaviors of sellers. It can find out the opportunistic intentions of sellers through user evaluation and the transaction record tracking of sellers in order to avoid dishonest and fraudulent behaviors. Meanwhile, sellers who engage in opportunistic behaviors should be strictly punished and customers whose interests have been compromised should be compensated twice as part of trying to reduce the recurrence of opportunistic behaviors and prevent the loss of customers' trust in the platform.

Fifthly, customers' satisfaction with the platform can determine customers' trust in the platform and their sense of belonging to the platform. It is a factor in users' decision to continue or not to use the platform. This is supported by a study by Leninkumar (2017) who found that there was a significant positive relationship between customer satisfaction and customer trust. According to the law of trigonometry in customer relationship management, customer satisfaction is equal to customer experience minus customer expectations. Hence, customer expectations need to be guided and maintained at an appropriate level and be aligned with customer experience. In cross-border e-commerce, customer perceived value is not just the product's own value (including product quality, product price, product function, product design, product packaging, and product taste) but more importantly, it is the spiritual value of the product. This is because of customers perceiving the product through direct contact. Therefore, e-commerce platforms should improve the spiritual value of customers through the following three ways of improving customer satisfaction. One is visual satisfaction, including the seller's web page design, content design, enterprise design, etc. A second one is behavioral satisfaction, including behavioral mechanism satisfaction, behavioral rules satisfaction, advertising behavior satisfaction, and online etiquette satisfaction. A third one is service satisfaction, including service reliability, immediacy, accuracy, completeness, and emotion.

Sixthly, the results of this study indicate that input cost could increase consumers' sense of belonging to the platform. The amount of input positively influences the sense of belonging and lead to repeated use and participation. This is in keeping with Li et al.'s (2006) determination that input costs significantly influence the relationship commitment of users in the context of e-commerce. The input costs in the context of e-commerce mainly includes material resources cost and financial resources. Material cost essentially refers to time cost, that is, the time spent on cross-border e-commerce platform. As a result, many sites have user check-ins and offer different promotions every day. These functions are designed to increase the amount of time users spend on the site and thus increase their input. On the other hand, website tries to attract more merchants to provide more products with high quality and low price for promoting consumers' consumption behavior, which in turn increases the cost to consumers of their financial resources. This also increase customer stickiness to the website.

Finally, relationship benefits between customers and platforms have a positive significant effect on the relationship commitment to cross-border e-commerce platforms. This finding is consistent with studies by Li et al. (2006) and Mukherjee and Nath (2007) in which it was found that relationship benefits have a great influence on the relationship commitment of customers. Relationship benefits refer to the special benefits that consumers can obtain transacting or interacting with websites. These kinds of special benefits are benefits that platform websites provide to consumers in order to increase their sense of belonging. Special interests include financial benefits as well as perceived interests. Financial benefits consist of regular offers of more gifts, vouchers, discounts, and loyalty rewards. In terms of perceived benefits, this is mainly reflected in paying attention to consumer feedback, solving consumer problems, and actively providing consumers with information and advertisements about products catering to personalized needs. Once established, these relationships give consumers a sense that the platform is tailored to their needs, rather than leave them with a "grocery market" experience.

### ***- Implications***

This study makes some theoretical contributions. Firstly, it proposes a powerful research model to study consumers' trust and belonging through the combination of the psychological distance theory and commitment trust theory. This model clearly explains the influencing factors of consumers' acceptance of cross-border mobile e-commerce from the perspective of consumers themselves and the relationship between consumers and businesses. Secondly, this study proposes a new variable for the perception of mobile e-commerce and cross-border mobile e-commerce, namely the perceived distance of mobile e-commerce. This variable describes the inherent advantage of mobile phone over PC, which is encapsulated in the formula "anytime and anywhere". Thirdly, this study confirms the validity of the psychological distance theory and commitment and trust theory in the field of cross-border mobile e-commerce.

In terms of practical implications, this study first illustrates the importance of perceived distance in mobile e-commerce, especially cross-border mobile e-commerce. Therefore, cross-border mobile e-commerce enterprises should focus on publicizing the advantages of cross-border mobile e-commerce in terms of perceived distance compared with traditional cross-border e-commerce. This would help them improve consumers' willingness to keep using them. For example, in line with the anytime and anywhere nature of mobile phones, advertisements could promote slogans such as "the cheapest and fastest shopping malls are at your fingertips." In addition, improving instant messaging systems in order to make communication faster and more accurate, or adding features such as language services, could reduce consumers' perceived distance, especially in cross-border situations where time differences and language differences exist. Moreover, satisfaction is crucial for trust and relationship commitment. Thus, both platforms and enterprises should give priority to consumers' satisfaction with regard to any business decision, communication with consumers, and the handling of emergencies. In special cases, such as when seeking to resolve disputes, sacrificing benefits in order to keep customers satisfied should even be an option.

### ***-Limitations and Recommendations for Further Research***

This study has several limitations. Firstly, the research sample consists of Chinese consumers, and the vast majority of respondents conduct transactions through domestic platforms. Therefore, in the questionnaire survey, respondents' answers relate to domestic platforms. Future research needs to expand the sample, which also needs to be diversified. For example, future researchers could conduct research on different platforms, both from China and from other countries. It is also necessary to conduct classified research on buyers from different countries, so as to find out the differences among them and determine feasible business strategies and opinions for cross-border e-commerce platform enterprises according to their strategic target locations more accurately. Furthermore, this research used only a quantitative research methodology and closed questions. If respondents answered "strongly disagree" to a question, the researchers were unable to find out the reasons for the disagreement and obtained detailed explanations. Anderson (2010) suggests that to ensure greater effectiveness, interviews should complement the survey. A mixed methodology would help to produce more in-depth data and improve analysis outcomes in qualitative aspects.

Therefore, in future studies, open-ended questions should be used to seek opinions of and suggestions from respondents. These would greatly help obtaining more inputs on what would be the most influential factors toward customer continuous use intention. Finally, in terms of research content, there are many factors that can affect the success of cross-border e-commerce platforms, including national policies, infrastructure construction, national economic conditions, etc., as well as enterprise operation, management ability and enterprise capital. While the main factors considered in this study pertain to user behavior, future research should not be limited to these factors but instead be expanded horizontally and include national policies, enterprise capital, enterprise operation capacity, the interaction between buyers and sellers, and any other relevant factors.

## References

- Accenture (2012). *European cross-border e-commerce: The challenge of achieving profitable growth*. Dublin: Accenture Publications.
- Anderson, C. (2010). Presenting and evaluating qualitative research. *American Journal of Pharmaceutical Education*, 74(8), 141.
- Anderson, J. C., & Narus, J. A. (1990). A Model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing*, 54(1), 42-58.
- Baltatescu, S. (2014). *Psychological distance*. Encyclopedia of quality of life and well-being research. Springer Netherlands.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 9(2), 233-255.
- Cho, H., & Lee, J. (2017). Searching for logistics and regulatory determinants affecting overseas direct purchase: An empirical cross-national study. *Asian Journal of Shipping & Logistics*, 33(1), 11-18.
- Chong, A. Y., & Chan, F. T. S. (2013). Analysis of the determinants of consumers' m-commerce usage activities. *Journal of Online Information Review*, 37(3), 443-461.
- Clarke, I. I. (2011). Emerging value propositions form-commerce. *Journal of Business Strategies*, 18(2), 133-148.
- Cochran, G. W. (1977). *Sampling techniques* (3<sup>rd</sup> ed.). New York, NY: John Wiley & Sons.
- Darke, P. R., Brady, M. K., Benedicktus, R. L., & Wilson, A. E. (2016). Feeling close from afar: The role of psychological distance in offsetting distrust in unfamiliar online retailers. *Journal of Retailing*, 92(3), 287-299.
- Duhan, D. F., Johnson, S. D., Wilcox, J. B., & Harrel, G. D. (1997). Influences on consumer use of word-of-mouth recommendation sources. *Journal of the Academy of Marketing Science*, 25(4), 283-295.
- Fujita, K., Henderson, M. D., Eng, J., Trope, Y., & Liberman, N. (2006). Spatial distance and mental construal of social events. *Psychological Science*, 17(4), 278-282.
- Guo, Y., Bao, Y. C., Barnes, S. J., & Le-Nguyen, K. (2017). To sell or not to sell: Exploring sellers' trust and risk of chargeback fraud in cross-border electronic commerce. *Information Systems Journal*, 28(4), 1-25.
- Gusarova, I., Fraser, V., & Alderson, K. G. (2012). A quantitative study of "friends with benefits" relationships. *Canadian Journal of Human Sexuality*, 21(1), 41-59.
- Hair Jr, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2013). *Multivariate data analysis* (7<sup>th</sup> ed.). USA: Pearson Education Ltd.
- Harwood, J., & Lin, M. C. (2010). Affiliation, pride, exchange, and distance in grandparents' accounts of relationships with their college-aged grandchildren. *Journal of*

- Communication*, 50(3), 31-47.
- Henderson, M. D., Fujita, K., Trope, Y., & Liberman N. (2006). Transcending the “Here”: The effect of spatial distance on social judgment. *Journal of Personality and Social Psychology*, 91(5), 845-856.
- Hernandez-Ortega, B. (2017). Don't believe strangers: Online consumer reviews and the role of social psychological distance. *Journal of Information & Management*, 55(1), 31-50.
- Huang, N., Burtch, G., Hong, Y. L., & Polman, E. (2016). Effects of multiple psychological distances on construal and consumer evaluation: A field study of online reviews. *Journal of Consumer Psychology*, 26(4), 474-482.
- Jin, L., Hu, B., & He, Y. (2014). The recent versus the outdated: An experimental examination of the time-variant effects of online consume reviews. *Journal of Retailing*, 90(4), 552-566.
- Jing, L. B., & Liang, C. X. (2011). *Report on the development of China's e-commerce service industry*. Social Science Literature Press.
- John, G. (1984). An empirical investigation of some antecedents of opportunism in a marketing Channel. *Journal of Marketing Research*, 21(3), 278-289.
- Kalinic, Z., & Marinkovic, V. (2016). Determinants of users' intention to adopt m-commerce: An empirical analysis. *Journal of Information Systems and e-Business Management*, 14(2), 367-387.
- Kim, D. J., Ferrin, D. L., & Rao, H. R. (2009). Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. *Journal of Information Systems Research*. 20(2), 237-257.
- Kim, K., Zhang, M., & Li, X. P. (2008). Effects of temporal and social distance on consumer evaluations. *Journal of Consumer Research*, 35(4), 706-713.
- Kim, H., Chan, H. C., & Gupta, S. (2007). Value-based adoption of mobile internet: An empirical investigation. *Journal of Decision Support Systems*, 43(1), 111-126.
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3<sup>rd</sup> ed.). New York, NY: The Guilford Press.
- Ko, E., Eun, Y. K. P. D., & Lee, E. K. (2009). Modeling consumer adoption of mobile shopping for fashion products in Korea. *Psychology & Marketing*, 26(7), 669-687.
- Lee, M. K. O., & Turban, E. (2001). A trust model for consumer internet shopping. *International Journal of Electronic Commerce*, 6(1), 75-91.
- Lee, S., & Park, S. (2006). Improving accessibility and security for mobile phone shopping. *Journal of Data Processor for Better Business Education*, 46(3), 124-133.
- Leninkumar, V. (2017). Relationship between customer satisfaction and customer trust on customer loyalty. *International Journal of Academic Research in Business and Social Sciences*, 7 (4), 450-465.
- Lewicki, R. J., & Bunker, B. B. (1995). *Trust in relationships: A model of development and decline*. San Francisco, CA: Jossey-Bass.
- Li, D., Browne, G., & Wetherbe, J. (2006). Why do internet users stick with a specific web site? A relationship perspective. *International Journal of Electronic Commerce*, 10(4), 105-141.
- Liberman, N., & Trope, Y. (2008). The psychology of transcending the here and now. *Journal of Science*, 322(5905), 1201-1205.
- Lin, J. B., Wang, B., Wang, N., & Lu, Y. B. (2014). Understanding the evolution of consumer trust in mobile commerce: a longitudinal study. *Information Technology & Management*, 15(1), 37-49.
- Liviatan, I., Trope, Y., & Liberman, N. (2008). Interpersonal similarity as a social distance dimension: Implications for perception of others' actions. *Journal of Experimental Social Psychology*, 44(5), 1256-1269.

- Lu, J. (2014). Are personal innovativeness and social influence critical to continue with mobile commerce? *Internet Research*, 24(2), 134-159.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 709-734.
- McAllister, D. J., & Daniel, J. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *The Academy of Management Journal*, 38(1), 24-59.
- Moorman, C., Deshpande, R., & Zaltman, G. (1993). Factors affecting trust in market research relationships. *Journal of Marketing*, 57(1), 81-101.
- Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of market research: The dynamics of trust within and between organizations. *Journal of Marketing Research*, 29(29), 314-328.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20-38.
- Mukherjee, A., & Nath, P. (2007). Role of electronic trust in online retailing: Examination of the commitment trust theory. *European Journal of Marketing*, 41(9), 1173-1202.
- Mussweiler, T., Rüter, K., & Epstude, K. (2004). The ups and downs of social comparison: Mechanisms of assimilation and contrast. *Journal of Personality and Social Psychology*, 87(6), 832-844.
- Rusbult, C. E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology*, 45(1), 101-117.
- Schierz, P. G., Schilke, O., & Wirtz, B. W. (2010). Understanding consumer acceptance of mobile payment services: An empirical analysis. *Journal of Electronic Commerce Research & Applications*, 9(3), 209-216.
- Trope, Y., Liberman, N., & Wakslak, C. (2007). Construal levels and psychological distance: Effects on representation, prediction, evaluation, and behavior. *Journal of Consumer Psychology*, 17(2), 83-95.
- Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425-478.
- Wang, J. (2014). Opportunities and challenges of international e-commerce in the pilot areas of China. *International Journal of Marketing Studies*, 6(6), 141-149.
- Wang, N., Shen, X. L., & Sun, Y. (2013). Transition of electronic word-of-mouth services from web to mobile context: A trust transfer perspective. *Decision Support Systems*, 54(3), 1394-1403.
- Wang, W. T., Wang, Y. S., & Liu, E. R. (2016). The stickiness intention of group-buying websites: The integration of the commitment-trust theory and e-commerce success model. *Information & Management*, 53(5), 625-642.
- Wieselquist, J., Rusbult, C. E., Foster, C. A., & Agnew, C. R. (1999). Commitment, pro-relationship behavior, and trust in close relationships. *Journal of Personality and Social Psychology*, 77(5), 942-966.
- Zhang, L., & Liu, Q. (2011). A review for ubiquitous commerce research and application 2000-2009. *International Journal of Mobile Communications*, 9(1), 39-56.

# The Mediating Role of Trustworthiness in Influencer Marketing of Food Products

Lokweepun Suprawan

School of Business Administration, Bangkok University, Bangkok, Thailand

Lokweepun.s@bu.ac.th

## Abstract

There has been a growing interest in the role of influencers in the marketing of products and services, in particular in the extent to which they can be trusted and can affect the behavior of consumers toward a particular product or service. This study focuses on this issue in the contest of the food sector and one prominent social network sites, Instagram (IG). Specifically, it aims to (i) examine the relationships between interactivity, authenticity, trustworthiness, brand trust and willingness to buy food products from IG stores; and (ii) investigate the mediating effect of trustworthiness on the relationship of interactivity, authenticity, and on brand trust in IG stores. Data was collected from 380 respondents, mostly young females, who are IG users in the Bangkok area. Descriptive statistics and structural equation modelling (SEM) were used to test the hypotheses. Findings indicate that while most of the respondents actively follow influencers on IG, they are not as active following specific IG stores. All proposed hypotheses were accepted except one as the direct effects of influencer interactivity and authenticity on brand trust in IG stores were found to be insignificant. It was also found that the relationship between influencer interactivity, authenticity, and brand trust in IG stores is fully mediated by the trustworthiness of followers in influencers.

**Keywords:** Influencer Marketing, Trustworthiness, Brand Trust, Authenticity, Social Media Influencer

## 1. Introduction

The use of social network sites (SNSs) or social media have been growing exponentially in the last decade. Broadly speaking, SNSs are web-based services allowing users to connect and share their profiles with so called “friends” and “followers” (Kananukul, Jung, & Watchravesringkan, 2015). In Thailand, the most favorite SNSs are Facebook, YouTube, Instagram, and Line (Zhou & Price, 2020). Of great import here, SNSs have become an integral part of an organization’s marketing tools that assist in generating two-way communication (Kananukul et al., 2015; Paris, Lee, & Seery, 2010). While in the past, marketers would essentially rely on face-to-face communication amongst friends, family members, and co-workers and on such concepts as word-of-mouth (WOM) to communicate with consumers (De Veirman, Cauberghe, & Hudders, 2017), this traditional form of communication is being replaced by the fast-growing use of SNSs for marketing purpose (S. Zhou et al., 2020). Influencers, i.e., those who help to create a positive attitude towards a brand, are now a major source for WOMs. Moreover, whereas in the past, influencers were almost exclusively celebrities, such as athletes, musicians, actors and actresses, as well as other public figures, today, the exclusive use of celebrity endorsers in the form of TV and radio advertisements is perceived as associated with a traditional perspective on marketing and with the more traditional media (Guruge, 2018). The growth of digital platforms allows ordinary people to express their views and thoughts freely. This is a fast-growing trend that is critical to marketing as these influencers are perceived to be authentic in their expressions (Guruge, 2018).

The concept of social media influencer (SMI) have been receiving much attention lately in terms of being associated with the concept of electronic word-of-mouth (eWOM) for marketing strategies (e.g. Sundermann & Raabe, 2019). What characterizes SMIs is their attractiveness, credibility, and expertise, which are perceived as signs of authenticity and trustworthiness by consumers (Uzunoglu & Misci Kip, 2014). That said, the use of SMIs can have either a positive or negative effect on brand image, depending on the eWOM content (S. Zhou et al., 2020). Obviously, if consumers perceived the eWOM content of SMIs to be authentic, then it is very likely that they will assign a positive image to the brand and vice versa when the content is perceived to be negative. Marketers will identify SMIs who have a direct impact on the target audiences as these SMIs can convince their audiences to purchase the related products via influencers' posts or reviews (De Veirman et al., 2017).

Influencers, whether ordinary people or celebrities, who present themselves and their contents on social media platforms, are at the core of this study. As the number of SMIs has increased recently (Social Media Influencer Marketing in Thailand, 2020), it is important to understand how consumers respond to SMIs. As K. Yang, Kim, and Tanoff (2020) have argued, one condition for IG users to respond to posts and reviews is for them to be certain that they can trust the content. Indeed, trust is an important antecedent leading to marketing responses such as a positive brand image (S. Zhou et al., 2020) and ultimately to the purchase of products (K. Yang et al., 2020). According to Jun and Yi (2020), consumers will trust SMIs if they interact with their followers and present themselves in an authentic manner.

Influencer marketing has been used in a variety of sectors that include health and fitness, fashion and beauty, food and high-technology products to name a few (De Veirman et al., 2017). Due to the coronavirus outbreak at the end of 2018 and the resultant surge in e-commerce worldwide, including in Thailand, influencer marketing is booming. Whilst many industries in Thailand, such as tourism, manufacturing, agriculture, exports, and retails have been heavily affected by substantial drops in their levels of activities, one sector that has been spared is the food industry. Indeed, it is one of the few industries that have experienced traffic growth and higher conversion growth since the outbreak of the pandemic (Hedin, 2020). This study focuses on this industry. The food sector in this study refers to the food and beverage industry and includes fresh food, cooked food, packaged food, and alcoholic and nonalcoholic beverages. In sum, it considers any food products meant for human consumption. One of the prominent SNSs that incorporates the use of SMIs is Instagram (IG). For consumers, the purpose of using IG is to follow brands and influencers in order to collect brand information and get influencers' activities updated (Leesa-Nguansuk, 2018). Criteria used to categorize SMIs include the size of the followers, e.g., micro vs. macro influencers (Voorveld, 2019), and social media platforms, e.g., bloggers, YouTubers, Instagrammers (De Veirman et al., 2017).

In light of these introductory remarks, this research thus intends to:

- (1) examine the relationships between interactivity, authenticity, trustworthiness, and brand trust in IG stores and consumers' willingness to buy food products from IG stores; and
- (2) investigate the mediating effect of trustworthiness on interactivity, authenticity, and brand trust.

The findings will provide some guidelines to marketers on the role that trustworthiness can play in influencer marketing and on how marketers can enhance the level of IG users' trust in IG stores to promote marketing responses.

## 2. Theoretical Background and Hypotheses Development

Before hypothesis can be developed, it is necessary first to discuss the following key operative concepts; influencer marketing (including influencer interactivity and authenticity), behavioral intention, brand trust, and trustworthiness.

### - *Influencer Marketing*

Influencer marketing refers to the collaboration between businesses, brand owners, and entrepreneurs with social media influencers (SMIs) to promote product and brands (De Veirman et al., 2017). The purpose of using SMIs is two-fold; (i) to establish and maintain the relationship with followers; and (ii) to persuade followers and motivate them to react to the content posted or reviewed by SMIs (K. Yang et al., 2020). Followers' opinions can also be on these posts or reviews (De Veirman et al., 2017). Extant studies have explored various responses to influencer marketing, including behavioral intention toward the posts (Casaló, Flavián, & Ibáñez-Sánchez, 2020), intention to purchase (Farivar, Wang, & Yuan, 2021; Wiedmann & von Mettenheim, 2020; K. Yang et al., 2020), brand trust (Jun & Yi, 2020; Wiedmann & von Mettenheim, 2020), and loyalty (Jun & Yi, 2020). However, due to the increasing use of SMIs and the possibility that followers will therefore respond to the posts and reviews selectively, it is vital to understand how followers choose to respond to influencer marketing. According to Jun and Yi (2020), two variables that generate brand trust are (i) influencer interactivity and (ii) authenticity.

(i) *Influencer interactivity* – can be defined as the way in which influencers and followers (audiences) can generate two-way communication on the influencer's social media platform in real time (Jun & Yi, 2020; McMillan & Hwang, 2002). The concept of influencer interactivity is derived from mechanical interactivity, which had been used in the past as a way to measure how active a company's website responds to customer's feedbacks (Lee & Park, 2013; McMillan & Hwang, 2002). Mechanical interactivity, however, is different from influencer interactivity since the perception that no human being is involved makes it rather intangible. Thus, influencer interactivity can be seen as an interpersonal communication between individuals (Jun & Yi, 2020). (ii) *Authenticity* – is generally defined as the degree of being genuine, real, and true to the claim made (Beverland & Farrelly, 2010). Similarly, influencer authenticity is the degree in which followers viewed the influencers to be sincere and true to the contents that they post (Jun & Yi, 2020). In other words, the contents posted by influencers should stem from their internal motivations rather than from the external influences of brands.

### - *Brand Trust*

In relationship marketing, the objectives are often focused on attracting, maintaining, and enhancing customer relationships (Morgan & Hunt, 1994). Under the commitment-trust theory (Morgan & Hunt, 1994) trust and commitment are the focal points among all other relational exchanges. Trust can be defined as “existing when one party has confidence in an exchange partner's reliability and integrity” (Morgan & Hunt, 1994, p. 23). In other words, trust is an individual's belief or confidence that an exchange between the parties will happen in a manner consistent with the expectations (Hajli et al., 2017). In the marketing context, brand trust is another important aspect of creating interactions as part of the consumer and business relationships that emphasizes how consumers believe that all attributes and benefits promised by the business will materialize (Kwon et al., 2020). Thus, brand trust can not only initiate but also assist in maintaining the buyer-seller relationship with a clear brand value and result in brand loyalty (Kwon et al., 2020), word of mouth intention (Jalilvand et al., 2017), and purchase intention (Hajli et al., 2017). When consumers believe and have confidence in influencers, the latter will be seen as trustworthy influencers (Wiedmann & von Mettenheim, 2020).

### **- Behavioral Intention**

One of the paradigms used to explain how individuals maintain their psychological balance on their cognition - thoughts, beliefs, knowledge, opinions, attitudes, and intent - is the cognitive consistency theory (Ahn & Kwon, 2020). In a nutshell, the theory explains how an individual who has a positive attitude or belief toward a product will generally have higher behavioral intention to purchase or support that product. Behavioral intention has been defined as the degree to which a person perceives his/her willingness to buy the product or use the service (H. Yang, Yu, Zo, & Choi, 2016). Generally, behavioral intention is a reliable predictor of the actual usage behavior (Rahman et al., 2021). As a number of studies show, behavioral intention encapsulates such concepts as intention to recommend (Rahi & Abd. Ghani, 2019), intention to purchase (De Canio, Martinelli, & Endrighi, 2021), intention to revisit (Kusumawati et al., 2020), and willingness to buy (Beneke et al., 2013).

### **- Trustworthiness**

Trustworthiness can be defined as the degree of confidence that the trustor has on the characteristics and traits of the trustee (Kosiba et al., 2018). Therefore, in order for influencers (trustees) to achieve trustworthiness, consumers (trustors) must be confident that the messages from influencers are believable. Since trustworthiness is a key attribute of influencer marketing, it is vital to understand its role. So far, we have considered the relationship between influencer interactivity and authenticity and their effect on trustworthiness and brand trust. However, according to the theory of trust transfer, the hypothesized relationship might actually be more complex as trust can be transferred from known individuals to unknown sources (Stewart, 2003; Wu, Chen, Chien, & Wu, 2016). In other words, followers might view influencers as trustworthy (known sources) but have no knowledge about IG store being endorsed. Under the theory of trust transfer, it is likely that followers will also trust IG store based on their trust in influencers. Konuk (2020) investigated the relationship between trust in a manufacturer brand and trust in the private brand label of a grocery store in Istanbul, Turkey, and found a significant positive relationship. Trust was transferred from the manufacturer brand to the private label brand.

Another study of influencer marketing conducted by Wiedmann and von Mettenheim (2020) in Germany also found a similar effect. The relationship between the trustworthiness of the influencer and brand trust was significantly positive. Previous studies, however, have not yet considered trustworthiness to have a mediating effect on influencer interactivity, authenticity, and brand trust. This study therefore attempts to investigate the role of trustworthiness as mediation on the relationship of influencer interactivity, authenticity, and brand trust in IG stores. Accordingly, based on the above discussion, this study hypothesizes the relationship between influencer interactivity, authenticity, trustworthiness, and brand trust in IG stores as follows:

**H1:** *Influencer interactivity and authenticity have a significant positive effect on brand trust in IG stores.*

**H2:** *Influencer interactivity and authenticity have a significant positive effect on trustworthiness.*

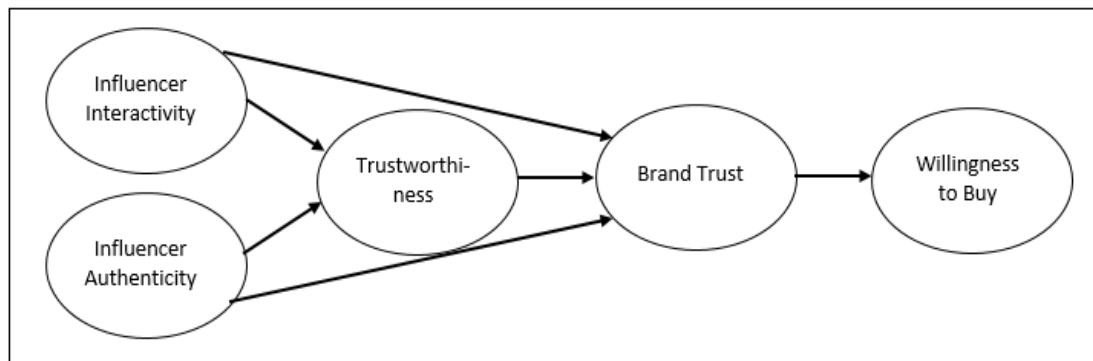
**H3:** *The relationship between influencer interactivity and authenticity and brand trust in IG stores is mediated by the degree of trustworthiness.*

According to various extant studies, implementing influencer marketing can have consequences on behavioral intention (Casaló et al., 2020), intention to purchase (Farivar et al., 2021; Wiedmann & von Mettenheim, 2020; K. Yang et al., 2020), brand trust (Jun & Yi, 2020; Wiedmann & von Mettenheim, 2020) and loyalty (Jun & Yi, 2020). A number of studies, though, have determined that it is brand trust that mostly influences consumer response to products and services. For instance, Wiedmann and von Mettenheim (2020) looked at

influencer marketing and found that for a customer to have a higher degree of intention to purchase, he/she must trust the brand that he/she is considering. Similarly, Sembada and Koay (2019) investigated the effect of trust on purchase intention in the context of social media stores and found a positive relationship. In other words, if consumers want to shop on social media stores, they must believe that the stores are trustable. Accordingly, the following hypotheses can be developed.

**H4:** *Brand trust in IG stores will positively influence willingness to buy food products.*

Figure 1 shows the research conceptual model developed for this study that incorporates all the relationships hypothesized and reflects the aforementioned theoretical background underpinning them.



**Figure 1:** Research Conceptual Model (Created by Authors for this Study)

### 3. Research Methodology

The population used for this quantitative research study involves IG users in the Bangkok area (Greater Bangkok). To qualify for this research, the respondents must own an IG account. The sample size of this research was determined using G\*Power to analyze linear regression analysis with multiple predictors. The medium effect size (0.15) was entered with an error probability of 0.05 and power of 0.95 (1 - β error probability). Based on the four predictors used, the minimum number of samples was computed to be 129 (Faul, Erdfelder, Buchner, & Lang, 2009). The judgmental sampling technique was utilized to collect the questionnaires. The Google Form link was posted on the social media sites of the researcher (IG, Facebook, and Line). 380 valid responses were returned in total.

The measurement scale adopted for this study is based on extant research and measures five constructs. It includes 5 items related to interactivity, 3 items related to authenticity, 5 items related to trustworthiness, 4 items related to brand trust, and 3 items related to willingness to buy. All the scales used for this study were achieved for reliability test with Cronbach’s alpha of .70 as shown in Table 1 (Nunnally & Bernstein, 1994). A 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used for all the independent and dependent constructs.

**Table 1:** Measurements and Their Cronbach’s Alphas

| Variable  | Number of Items | Cronbach’s Alpha Coefficient ( $\alpha$ ) |
|---|-----------------|---|
| Interactivity (Jun & Yi, 2020)                    | 5               | .93                                       |
| Authenticity (Jun & Yi, 2020)                     | 3               | .82                                       |
| Trustworthiness (Wiedmann & von Mettenheim, 2020) | 5               | .96                                       |
| Brand Trust (Konuk, 2020)                         | 4               | .97                                       |
| Willingness to Buy (Konuk, 2020)                  | 3               | .97                                       |

The statistical tools used to analyze reliability and validity in this study include Cronbach's Alpha coefficient and Pearson's correlation coefficient. To test the hypothesized relationships in this study, structural equations modelling (SEM) was employed. This is a technique commonly used to estimate the path analysis of independent and dependent variables. It allows all the hypothesis (H1-H4) to be estimated simultaneously instead of conducting separate multiple regressions (Hair, Black, Babin, & Anderson, 2010). This eliminates measurement errors.

On the basis of the 380 valid questionnaires returned, a reliability analysis was performed. As can be seen in Table 2, the results of Cronbach's Alpha coefficients show that all the constructs achieved scores above .70 (Nunnally & Bernstein, 1994). It was therefore concluded that all the scales used for this study were acceptable for further analysis.

**Table 2:** Reliability Analysis

| Construct          | Code   | Items  | Cronbach's Alpha Coefficient ( $\alpha$ ) |
|--------------------|--------|--|---|
| Interactivity      | INT1   | Interacting with the influencer whom I follow on IG is like having a real conversation                     | .833                                      |
|                    | INT2   | I perceive the Influencer whom I follow on IG to be sensitive to my needs for information                  |   |
|                    | INT3   | The influencer whom I follow on IG will respond to me quickly and efficiently                              |   |
|                    | INT4   | The influencer whom I follow on IG allows me to communicate directly with her/him                          |   |
|                    | INT5   | The influencer whom I follow on IG will talk back to me if I post a message                                |   |
| Authenticity       | AUT1   | The influencer whom I follow on IG has a true passion for food products.                                   | .856                                      |
|                    | AUT2   | The influencer whom I follow on IG wants to do his/her best providing his/her content about food products. |   |
|                    | AUT3   | The influencer whom I follow on IG is devoted to what he/she does on IG about food product content.        |   |
| Trustworthiness    | TWN1   | The influencer whom I follow on IG is dependable.  | .902                                      |
|                    | TWN2   | The influencer whom I follow on IG is honest.  |   |
|                    | TWN3   | The influencer whom I follow on IG is reliable.  |   |
|                    | TWN4   | The influencer I follow on IG is sincere.  |   |
|                    | TWN5   | The influencer I follow on IG is trustworthy.  |   |
| Brand Trust        | TRUST1 | I trust the IG store brand.  | .897                                      |
|                    | TRUST2 | I rely on the IG store brand.  |   |
|                    | TRUST3 | IG store is an honest brand.   |   |
|                    | TRUST4 | The IG store brand is safe.  |   |
| Willingness to Buy | WTB1   | I would consider buying food products via IG stores.   | .867                                      |
|                    | WTB2   | I will purchase food products via IG stores  |   |
|                    | WTB3   | There is a strong likelihood that I will buy food products from IG stores.                                 |   |

#### 4. Research Findings

The demographic data collected from the 380 valid questionnaires indicate that 55 percent of the respondents were females aged between 18-22 years (56.3%). Most of them were students (72.6%), many with a monthly income below 15,000 THB (44.7%). 36.3 percent have an income between 15,001-30,000 THB. 80.0 percent of them either have obtained a bachelor's degree or are working on obtaining one. These respondents usually search food products via social media, which, apart from IG, also includes Facebook (50.8%). The main food products they order via social media are sweet and chocolate (29.5%) and bakery (28.7%). The most frequent time when IG users order food is during the 20.00-24.00 slot (43.2%). Respondents

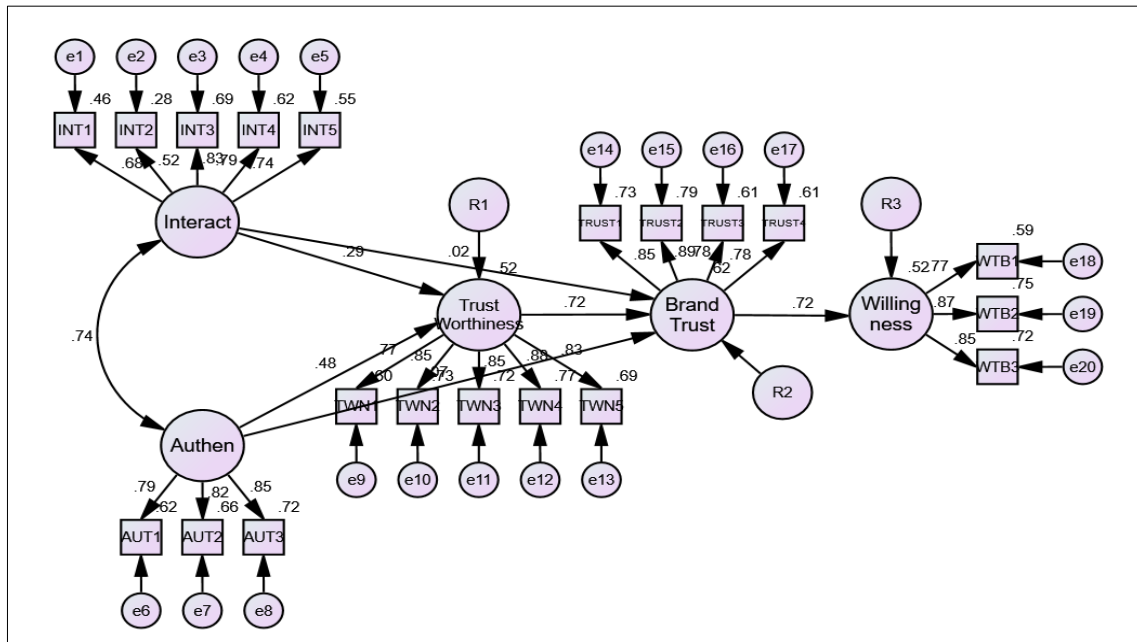
use social media to order food for two main reasons: because it is very easy and convenient to use (40.7%) and less time is involved (28.1%). They typically visit their IG accounts more than five times a day (52.6%). Within their own IG accounts, most users follow more than 20 influencers (33.9%) but they typically follow less than five IG stores (41.8%). Most of the respondents often react to the posts on IG. 40.6 percent of them click 'like the posts' and about 30.4 percent are interested on the posts but no further action is involved. Prior to hypotheses testing, the Pearson's correlation coefficient was computed to examine the construct validity and multi-collinearity. It was found that all independent variables (interactivity, authenticity, trustworthiness, and brand trust) are positively correlated to willingness to buy. However, as Table 3 shows, there is no substantial correlation between any of the predictors ( $R > .9$ ) (Field, 2005). Therefore, no multi-collinearity was found in any of the relationships.

**Table 3:** Pearson's Correlation Coefficient

|                 | <b>Interactivity</b> | <b>Authenticity</b> | <b>Trustworthiness</b> | <b>Brand Trust</b> | <b>Willingness</b> |
|-----------------|----------------------|---------------------|------------------------|--------------------|--------------------|
| Interactivity   | 1                    | .664**              | .600**                 | .487**             | .474**             |
| Authenticity    | .664**               | 1                   | .629**                 | .509**             | .480**             |
| Trustworthiness | .600**               | .629**              | 1                      | .708**             | .624**             |
| Brand Trust     | .487**               | .509**              | .708**                 | 1                  | .624**             |
| Willingness     | .474**               | .480**              | .586**                 | .624**             | 1                  |

\*\*Correlation is significant at the .01 level (2-tailed).

In order to consider the model fit with a sample size above 250 and observed variables of 12-30, the model should report a significant p-value ( $p < .01$ ) (Hair et al., 2010). The normed chi-square (the ratio of chi-square and degree of freedom) is generally accepted if it falls within the ratio of 3:1 (Hair et al., 2010). As to the Goodness-of-Fit Index (GFI), the general rule of thumb is that for a value to be acceptable it should be greater than .95 (Schermelleh-Engel, Moosbrugger, & Muller, 2003; Schreiber et al., 2006). However, values greater than .90 are considered to be a good model fit. In assessing 'badness of fit', the acceptable value of SRMR should fall below .08. The 'comparative fit index' (CFI) of .95 or higher is generally accepted as a rule of thumb (Hair et al., 2010). Alternatively, the 'normed fit index' (NFI) and 'non-normed fit index' (NNFI) or 'Tucker-Lewis index' (TLI) should also be reported. Values of .92 or higher would be considered acceptable (Hair et al., 2010). Accordingly, as shown in Figure 2, it was found that the fit of the model is acceptable ( $\chi^2 = 432.617$ ;  $DF = 163$  ( $p = 0.000$ );  $GFI = 0.901$ ;  $RMSEA = 0.066$ ;  $SRMR = 0.067$ ;  $NFI = 0.919$ ;  $TLI = 0.939$ ;  $CFI = 0.948$ ).



Notes:  $**p < .01$ ; GFI = 0.901; RMSEA = 0.066; SRMR = 0.067; NFI = 0.919; TLI = 0.939; CFI = 0.948;  $\chi^2 = 432.617$ ; DF = 163 ( $p = 0.000$ )

Figure 2: Full Model Results

The path analysis was then employed to test hypothesis H1-H4 on the effects of interactivity, authenticity, trustworthiness, brand trust and willingness to buy. Table 4 shows the results of all these effects. Based on the structural equation model analysis, it can be seen that the effects of interactivity and authenticity on brand trust in IG stores (H1) were found to be insignificant. Therefore, both influencer interactivity and authenticity do not have a direct effect on brand trust in IG stores. As to hypotheses H2, which examines the effects of interactivity and authenticity on trustworthiness, it was found that the unstandardized coefficients of interactivity and authenticity are .291 ( $\beta = .287 p < .001$ ) and .414 ( $\beta = .481 p < .001$ ). This indicates that as one unit of interactivity and authenticity of influencers increases, trustworthiness will increase by .291 and .414 unit, respectively. It can therefore be concluded that influencer interactivity and authenticity have a positive effect on trustworthiness. Hypotheses H2 is accepted but, as indicated in Table 4, hypotheses H1 is rejected.

Table 4: Hypotheses Testing Results

| Hypothesized path   | Standardized Coefficients ( $\beta$ ) | Unstandardized Coefficients (B) | Results       |
|---|---------------------------------------|---------------------------------|---------------|
| Interactivity $\rightarrow$ Brand Trust                               | .019                                  | .020                            | H1: Rejected  |
| Authenticity $\rightarrow$ Brand Trust                                | .067                                  | .059                            | H1: Rejected  |
| Interactivity $\rightarrow$ Trustworthiness                           | .287**                                | .291**                          | H2: Supported |
| Authenticity $\rightarrow$ Trustworthiness                            | .481**                                | .414**                          | H2: Supported |
| Interactivity $\rightarrow$ Trustworthiness $\rightarrow$ Brand Trust | .208**                                | .218**                          | H3: Supported |
| Authenticity $\rightarrow$ Trustworthiness $\rightarrow$ Brand Trust  | .349**                                | .310**                          | H3: Supported |
| Brand Trust $\rightarrow$ Willingness to buy                          | .719**                                | .731**                          | H4: Supported |

Notes:  $p < .05$

The indirect effects of interactivity and authenticity on trustworthiness of influencers were tested as well. As suggested by the unstandardized coefficients of .218 ( $\beta = .208 p < .001$ ) and .310 ( $\beta = .349 p < .001$ ), when influencer interactivity and authenticity increase by one unit, the effect of brand trust will also increase by .218 and .310 units, mediated by trustworthiness. Moreover, based on the above finding that indicates insignificant direct effects of interactivity and authenticity on brand trust, it can be concluded that the effects of interactivity and authenticity on brand trust in IG stores is fully mediated by influencer trustworthiness. Therefore, hypotheses H3 is accepted.

As to hypotheses H4, which tests the effect of brand trust in IG stores on willingness to buy food products, it was found that with a standardized coefficient of .731 ( $\beta = .719 p < .001$ ), brand trust in IG stores has an effect on willingness to buy food products. This indicates that as one unit of brand trust increases, willingness to buy food products from IG stores will increase by .731 unit. Thus, brand trust has a positive influence on willingness to buy food from IG stores. Hypotheses H4 is accepted.

## 5. Discussion and Conclusion

This study aimed to examine the effects of influencer interactivity and authenticity on both influencer trustworthiness and brand trust in IG stores. As we saw earlier, brand trust refers to the belief that the content or the information provided by influencers are sincere. In other words, brand trust is based on the belief that influencers are honest and sincere and can be trusted. To verify the hypothesis developed for this study, 380 respondents answered a questionnaire based on Jun and Yi's (2020) research study. Most of them were females between 18 and 22 years old. This is in keeping with statistics of IG users in Thailand, which indicate that most of the users are females aged between 25-34 and 18-24 years old, respectively (NapoleonCat, 2021). Since the demographic profiles of the respondents in this study are similar in terms of age and gender to the age and gender distribution reported in statistics on IG users in Thailand, it can therefore be assumed that the respondents in this study are good representatives of IG users in Thailand. This is an important aspect to emphasize as it lends credence to the findings of this study and makes them reliable and usable by stakeholders in influencer marketing.

Since this study also found that IG users tend to follow influencers on their accounts rather than directly check IG stores, it is more efficient for marketers to seek endorsement of IG store brand via influencers. Any influencers' marketing communication to IG users is therefore preferable to direct communication from IG stores as influencers have a higher exposure rate. Clearly, they can help to create a positive attitude towards a brand in ways IG stores' direct communication with consumers cannot, as they have become a major source for WOMs. Thus, as more influencers present their views and thoughts 'freely' to potential consumers, the more likely it is for brand trust in IG stores to develop. Naturally, it is critical that in their interaction with followers they be perceived to be authentic in their expressions (Guruge, 2018). Since, as we saw in the introduction to this article, they generally are ordinary people (as opposed to celebrities, associated with more traditional media), they are more likely to present themselves in an authentic manner.

Even though, as hypotheses testing shows (H1), the effects of influencers' interactivity and authenticity on brand trust in IG stores were not found to be significant, which suggests that there is no direct relationship, this does not undermine the key role influencers play in today's digital marketing. For one, this study's finding that IG users may not necessarily trust IG stores even when influencers attempt to engage and interact with followers as part of sharing their authentic food products content is inconsistent with a number of previous studies (e.g. Jun & Yi, 2020; K. Yang et al., 2020). In these studies, influencers' interactivity and authenticity was

determined to have no mediating effect on trustworthiness. Moreover, the fact that the respondents in this study must view influencer as being trustworthy as an initial step before they can develop brand trust in IG stores is not outcome determinative. They may eventually trust the brand as they perceive influencers can be trusted and are authentic.

According to the theory of trust transfer (Stewart, 2003; Wu et al., 2016), trust in known sources will lead to trust in unknown sources. As applied to this study, this means that, if this theory holds true, trust in influencers will translate into brand trust in IG stores as well. In this study, there is simply no similar direct causal relationship as trustworthiness fully mediates this relationship and fail to provide the necessary linkage. This shows the importance for companies to use trustworthy influencers to build brand trust and develop behavioral intention. As underlined in Ahn and Kwon's (2020) cognitive consistency theory and as emphasized by Wiedmann and von Mettenheim (2020), trust will lead to intention to purchase. This is similar to the finding of this study that trust in IG stores will increase the degree of willingness to buy food product from IG stores.

#### - Future Research and Limitations

This research attempted to highlight the fact that influencers are the key to positive consumer responses. The assumption is that consumers are much less likely to purchase a particular brand of food products if they do not have any knowledge of that brand. As we saw in this study, today, it is primarily the role of influencers to create brand trust in a product or a brand. This is generally achieved by ensuring that influencers are trustworthy and can therefore be trusted. However, trustworthiness may not arise instantly. Consistent authentic interaction with followers should therefore be explored in depth as it could be one the keys toward gaining the trust of consumers.

This study proposed to test the mediator role of trustworthiness in social influencer marketing with a sole focus on IG users, which of course meant that users from other social media platforms were excluded from this study. Future research should therefore replicate this research model and seek out the role of trustworthiness on other social media platforms. Moreover, this research model could be generalized to other food businesses in order to expand the exploration of the effect of social media influencers to an entire industry. This would make it possible to determine if the findings related to one brand can be generalized to many brands. Another limitation of this research, apart from focusing on one specific brand, is that the responders fail to represent every generation as the questionnaires were mainly collected from Generations Y and Z. Yet, there may be generational issues and behaviors that could possibly lead to a different conclusion. Future research on this topic might therefore consider focusing on Generation X to investigate if similar effects exist.

#### References

- Ahn, J., & Kwon, J. (2020). CSR perception and revisit intention: The roles of trust and commitment. *Journal of Hospitality and Tourism Insights*, 3(5), 607-623.
- Beneke, J., Flynn, R., Greig, T., & Mukaiwa, M. (2013). The influence of perceived product quality, relative price and risk on customer value and willingness to buy: A study of private label merchandise. *Journal of Product & Brand Management*, 22(3), 218-228.
- Beverland, M. B., & Farrelly, F. J. (2010). The quest for authenticity in consumption: Consumers' purposive choice of authentic cues to shape experienced outcomes. *Journal of Consumer Research*, 36(5), 838-856.
- Casaló, L. V., Flavián, C., & Ibáñez-Sánchez, S. (2020). Influencers on Instagram: Antecedents and consequences of opinion leadership. *Journal of Business Research*, 117, 510-519.

- De Canio, F., Martinelli, E., & Endrighi, E. (2021). Enhancing consumers' pro-environmental purchase intentions: The moderating role of environmental concern. *International Journal of Retail & Distribution Management*, Vol. ahead-of-print, No. ahead-of-print.
- De Veirman, M., Cauberghe, V., & Hudders, L. (2017). Marketing through Instagram influencers: The impact of number of followers and product divergence on brand attitude. *International Journal of Advertising*, 36(5), 798-828.
- Farivar, S., Wang, F., & Yuan, Y. (2021). Opinion leadership vs. para-social relationship: Key factors in influencer marketing. *Journal of Retailing and Consumer Services*, 132, 146-147.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G\*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149-1160.
- Field, A. (2005). *Discovering statistics using SPSS* (2<sup>d</sup> ed.). London: SAGE Publications
- Guruge, M. (2018). Comparison between attributes related to celebrity endorsement and social media influencer marketing: A conceptual review. *Sri Lanka Journal of Marketing*, 4(1), 17-37.
- Hair, J. F., Jr., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective* (7<sup>th</sup> ed.). Upper Saddle River: Pearson Education, Inc.
- Hajli, N., Sims, J., Zadeh, A. H., & Richard, M.-O. (2017). A social commerce investigation of the role of trust in a social networking site on purchase intentions. *Journal of Business Research*, 71, 133-141.
- Hedin, J. (2020). 2020 Digital Marketing Trends in Thailand. Retrieved Feb 3, 2021, from <https://www.marketingignite.com/digital-marketing-trends-in-thailand/#coronavirus01>
- Jalilvand, M. R., Salimipour, S., Elyasi, M., & Mohammadi, M. (2017). Factors influencing word of mouth behaviour in the restaurant industry. *Marketing Intelligence & Planning*, 35(1), 81-110.
- Jun, S., & Yi, J. (2020). What makes followers loyal? The role of influencer interactivity in building influencer brand equity. *Journal of Product & Brand Management*, 29(6), 803-814.
- Kananukul, C., Jung, S., & Watchravesringkan, K. (2015). Building customer equity through trust in social networking sites. *Journal of Research in Interactive Marketing*, 9(2), 148-166.
- Konuk, F. A. (2020). Trust transfer from manufacturer to private label brand: The moderating role of grocery store format. *Journal of Retailing and Consumer Services*, 54(C).
- Kosiba, J. P. B., Boateng, H., Okoe Amartey, A. F., Boakye, R. O., & Hinson, R. (2018). Examining customer engagement and brand loyalty in retail banking. *International Journal of Retail & Distribution Management*, 46(8), 764-779.
- Kusumawati, A., Utomo, H. S., Suharyono, S., & Sunarti, S. (2020). Effects of sustainability on WoM intention and revisit intention, with environmental awareness as a moderator. *Management of Environmental Quality: An International Journal*, 31(1), 273-288.
- Kwon, J.-H., Jung, S.-H., Choi, H.-J., & Kim, J. (2020). Antecedent factors that affect restaurant brand trust and brand loyalty: Focusing on US and Korean consumers. *Journal of Product & Brand Management*. Retrieved January 9, 2021, from <https://doi.org/10.1108/JPBM-02-2020-2763>.
- Lee, H., & Park, H. (2013). Testing the impact of message interactivity on relationship management and organizational reputation. *Journal of Public Relations Research*, 25(2), 188-206.
- Leesa-Nguansuk, S. (2018, January 2018). Instagram Tapped to Push Social Commerce. Retrieved December 17, 2020, from

- <https://www.bangkokpost.com/tech/1390642/instagram-tapped-to-push-social-commerce#:~:text=According%20to%20the%20company's%20first,users%20or%2032.4%25%20in%202017.>
- McMillan, S. J., & Hwang, J.-S. (2002). Measures of perceived interactivity: An exploration of the role of direction of communication, user control, and time in shaping perceptions of interactivity. *Journal of Advertising*, 31(3), 29-42.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20-38.
- NapoleonCat. (2021). Instagram Users in Thailand: March 2021. Retrieved April 3, 2021, from <https://napoleoncat.com/stats/instagram-users-in-thailand/2021/03>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3<sup>rd</sup> ed.). New York: McGraw-Hill.
- Paris, C. M., Lee, W., & Seery, P. (2010). The role of social media in promoting special events: Acceptance of Facebook 'events'. *Information and Communication Technologies in Tourism*, in ENTER2010 eTourism Conference, 10-12 February 2010, Lugano, Switzerland, p. 531-541.
- Rahi, S., & Abd. Ghani, M. (2019). Does gamified elements influence on user's intention to adopt and intention to recommend internet banking? *The International Journal of Information and Learning Technology*, 36(1), 2-20.
- Rahman, M. S., Das, S., Hossain, G. M. S., & Tajrin, T. (2021). Teenagers' behavioral intention towards wearable technologies and intention to recommend others: An empirical study in Bangladesh. *Journal of Science and Technology Policy Management*. Retrieved March 2, 2021, from <https://doi.org/10.1108/JSTPM-05-2020-0088>.
- Schermelleh-Engel, K., Moosbrugger, H., & Muller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8(2), 23-74.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis: A review. *The Journal of Educational Research*, 99(6), 323-337.
- Sembada, A. Y., & Koay, K. Y. (2019). How perceived behavioral control affects trust to purchase in social media stores. *Journal of Business Research*, 130, 574-582.
- Social Media Influencer Marketing in Thailand. (2020). Retrieved January 21, 2021, from <https://anymindgroup.com/news/blog/7149/>
- Stewart, K. J. (2003). Trust transfer on the world wide web. *Organization Science*, 14(1), 5-17.
- Sundermann, G., & Raabe, T. (2019). Strategic communication through social media influencers: Current state of research and desiderata. *International Journal of Strategic Communication*, 13(4), 278-300.
- Uzunoglu, E., & Misci Kip, S. (2014). Brand communication through digital influencers: Leveraging blogger engagement. *International Journal of Information Management*, 34(5), 592-602.
- Voorveld, H. A. M. (2019). Brand communication in social media: A research agenda. *Journal of Advertising*, 48(1), 14-26.
- Wiedmann, K.-P., & von Mettenheim, W. (2020). Attractiveness, trustworthiness and expertise: Social influencers' winning formula? *Journal of Product & Brand Management*, 30(5), 707-725.
- Wu, J.-J., Chen, Y.-H., Chien, S.-H., & Wu, W.-K. (2016). Attachment relationship study of trust and trust transfer. *Journal of Service Theory and Practice*, 30(5), 707-725.
- Yang, H., Yu, J., Zo, H., & Choi, M. (2016). User acceptance of wearable devices: An extended perspective of perceived value. *Telematics and Informatics*, 33(2), 256-269.

- Yang, K., Kim, H. M., & Tanoff, L. (2020). Signaling trust: Cues from Instagram posts. *Electronic Commerce Research and Applications*, 43, 1-7.
- Zhou, J., & Price, T. (2020). Southeast Asia eCommerce Outlook 2020. Retrieved February 20, 2021, from <https://www.tmogroup.asia/downloads/southeast-asia-ecommerce-outlook/>
- Zhou, S., Barnes, L., McCormick, H., & Blazquez Cano, M. (2020). Social media influencers' narrative strategies to create eWOM: A theoretical contribution. *International Journal of Information Management*, 59, 1-17.

# Service Innovative Behavior in the Aviation Industry: An Empirical Study of the Contribution of Perceived Organizational Support

**Nguyen Le Hoang Long**

School of Government, University of Economics Ho Chi Minh City, Vietnam.

Hoanglong.tccb@gmail.com

**Nguyen Thi Thu Huong**

Faculty of Management and Economics, Tomas Bata University in Zlín, Czech Republic.

T2nguyen@utb.cz

**Ho Viet-Anh**

Faculty of Management and Economics, Tomas Bata University in Zlín, Czech Republic.

Ho@utb.cz

## Abstract

This research study aims to investigate the extent to which perceived organizational support shapes extra-role behaviors in performing daily tasks in the airline industry. Unlike most previous studies on this topic, which mainly focus on the organizational level, the focus in this study is on the individual level. To test the hypothesis, a questionnaire, surveyed 233 flight attendants from several Vietnamese airlines. Data was analyzed by employing structural equation model. The findings indicate that flight attendants' perceived organizational support enhances work engagement and that both have a significant positive significant effect on affective commitment. It was also found that affective commitment engenders innovative behaviors in terms of service quality. Moreover, perceived organizational support has a direct effect on service innovative behavior support. The empirical results and the managerial implications discussed contribute to the literature on flight attendant behavior.

**Keywords:** Aviation, Affective Commitment, Perceived Organizational Support, Service Innovative Behavior, Work Engagement

## 1. Introduction

Innovation has been one of the key factors in ensuring the sustainable growth of the aviation sector in the face of a constantly changing global market (Franke, 2007). Innovative activities in the airline industry include, among others, building innovative policies, (Andrew, 2012), developing innovative business models (Schneider, Spieth, & Clauss, 2013), and embracing the advances of modern technology (Lee & Mo, 2011). The successful implementation of innovative strategies in the airline industry is often premised on the ability of flight attendants to deliver on these strategies and on the quality of the service as they are the image of the airline (Hochschild, 1983). However, it is not unusual for them not to meet the "innovative" demands placed on them as they work long hours (both daytime and nighttime) in a stressful environment (Lee & Huyn, 2016). This limits their innovative performance (Cheng, Hong, & Yang, 2018).

Yet, it is well established that for an organization to perform well and consistently deliver satisfaction to its customer, it is necessary for its employees to go beyond their daily routine and contribute an extra something to the organization (Katz, 1964). With regard to the airline industry and the input of flight attendants, a number of scholars have sought to clarify which factors can lead to their out-role behavior. Lee and Huyn (2016), for example, determined that flight attendants with high psychological capital tend to show more work engagement and

better service behavior. In addition to work engagement, it has also been suggested that employees who are committed to their organization will be more likely to be innovative in the workplace. (Xerri & Brunetto, 2013). This is precisely the psychological process addressed by the organizational support theory, on the one hand, and perceived organizational support, on the other (Rhoades & Eisenberger, 2002). In particular, the impact of perceived organizational support on service innovative behavior gains has been receiving much attention by scholars (Afsar & Badir, 2017; Bani-Melhem, Zeffane, & Albaity, 2018; Qi et al., 2019). They mainly focus on investigating the mechanism of perceived organizational support and its relation to out-role behaviors via felt obligation and on looking at the fulfillment of socio-emotional needs to name a few of the issues explored (Baran, Shanock, & Miller, 2012). Few studies, however, focus on how perceived organizational support affects innovative behavior. This is precisely why this issue is at the core of this study.

Specifically, focusing on flight attendants, the purpose of this study is to provide a holistic model for perceived organizational support, work engagement (felt obligation effect), employees' commitment (effect of fulfilling socio-emotional needs), and service innovative behavior. It aims to fill a gap in past research, all the wider as few studies deal with these issues in the context of the airline industry and flight attendants in particular. Therefore, it is these authors' expectations that this study will contribute to helping airlines enhance the innovative behavior of their employees as part of the companies' efforts to increase customer service quality and ensure the sustainability of their operations.

## 2. Literature Review and Hypotheses Development

### *- Perceived Organizational Support and Work Engagement*

Perceived organizational support has been defined as "the employees' beliefs regarding the extent to which organizations assess their contributions and care for their well-being" (Eisenberger et al., 1986, p. 501). Caring agents from the organization are often considered at the organizational level rather than at the individual level (Levinson, 1965). According to Levison (1965), their actions include among others organizational policies, norms, and the organizational culture. Employees view the characteristics of their organization and the way their organization treats them as a clear indication of whether the organization favors or disfavors them (Rhoades & Eisenberger, 2002). Organizations can use social support to enhance work engagement (Llorens et al., 2006). When employees perceive that the organization supports them, they tend to immerse themselves in their objectives at work (Yongxing et al., 2017). Eisenberger and Stinglhammer (2011) also argued that when an organization invests in the interest of its employees (e.g., value employees' contributions), then work engagement will be increased. Therefore, the following hypotheses can be developed:

**H<sub>1</sub>:** *Perceived organizational support is positively related to work engagement*

### *- Work Engagement and Affective Commitment*

Employees in the airline industry often have to deal with difficult situations such as, for example, arrogant or aggressive passengers, that require much effort on their part to handle them appropriately. This can lead to stress or burnout (Bakker, Demerouti, & Verbeke, 2004; Chen & Kao, 2012). Work engagement can thus be defined as a psychological contract for flight attendants to overcome struggles for ensuring service performance (Yeh & Hong, 2012). As determined by Schaudeli et al. (2002), work engagement is a positive, fulfilling, and work-related state of mind that is characterized by vigor, dedication, and absorption. Vigor translates into a high level of energy and desire to devote time and effort to complete tasks. Moreover, employees who are dedicated to their jobs experience feelings such as enthusiasm, pride, inspiration, and so on. As to absorption, it refers to the immersive experience that employees get when they are working; time passes rapidly and it is impossible for them to disconnect from

the task. Employees who have a high level of work engagement tend to immerse themselves in their work (Schaudeli et al., 2002).

According to the motivational process of the Job Demand-Resource model (Hackman & Oldham, 1980), the increased likelihood of completing the tasks successfully induces a feeling of fulfillment in employees that boosts their work engagement. Schaufeli and Taris (2014) found that work engagement generates a motivated and positive state of mind in employees. It also has a positive effect on affective commitment (Gokul, Sridevi, & Srinivasan, 2012; Albrecht & Andreetta, 2011; Scrima et al., 2014). Based on the above, the following hypotheses is proposed:

**H<sub>2</sub>:** *Work engagement is positively related to affective commitment*

### **- Perceived Organizational Support and Affective Commitment**

In their theory of social exchange, Eisenberger et al. (1986) suggested that organizational commitment relates to the perception by employees of the level of commitment of the organization to them. Some of the relevant literature divides organizational commitment into 3 types: affective commitment, continuance commitment, and normative commitment (Meyer, Allen, & Gellatly, 1990; Shore & Wayne, 1993). According to Eisenberger et al. (1986), affective commitment is the most significant form of commitment. Meyer and Allen (1991) defined it as the emotions of employees that express their feelings of attachment, identification, and involvement with their organization's activities. When employees perceive a high level of organizational support, they will "repay" their organization with affective commitment. Many organizations support and value employees' contribution to increasing their attachment to the organization (O'Driscoll & Randall, 1999). This study focuses on affective commitment since perceived organizational support is positively related to changes in affective commitment over time.

Rhoades, Eisenberger, and Armeli (2001) provided evidence that it contributes to affective commitment in that employees turn the support they receive from the organization into emotional attachment with the organization. Saks (2006) and Gokul et al. (2012) confirmed the strong relationship between perceived organizational support and work engagement with affective commitment. Several studies were also conducted in Asia. Focusing on Korean employees, Lee and Peccei (2006) found that perceived organizational support has a strong and direct effect on affective commitment. This result was confirmed by Liu and Chang (2009) who studied expatriates in mainland China. Therefore, the following hypotheses can be proposed:

**H<sub>3</sub>:** *Perceived organizational support is positively related to affective commitment*

### **- Affective Commitment and Service Innovative Behavior**

Lee and Huyn (2016) defined service innovative behavior as the willingness to propose innovative ideas that convince customers of the enhanced service quality. Service innovative behavior has been playing an important role in the airline industry. This is because it promotes creativity with regard to decision-making and is service-oriented. Bettencourt and Brown (1997) determined that service behavior involves the action, voice, and attitude of frontline employees serving customers. This is why service behavior is regarded as a symbol of organizational service quality (Farrell, Souchon, & Durden, 2001). Affective commitment, as defined above, is positively related to work engagement, which, in turn, is positively associated with innovative work behavior, feedback seeking for self-improvement, and error reporting (Chughtai, 2011). When employees demonstrate commitment and receive feedback from the organization, generally the work environment becomes safer and employees tend to be more resourceful, which may in turn enhance employees' innovativeness (Amabile, 1996). The following hypotheses can thus be developed:

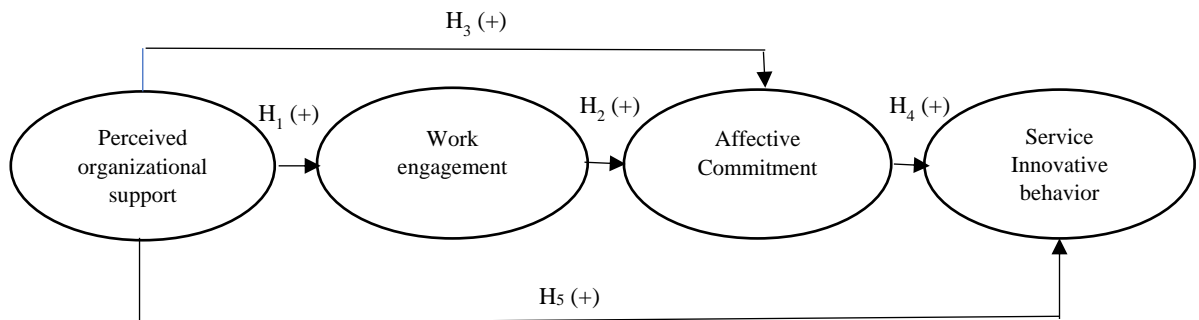
**H<sub>4</sub>:** *Affective commitment is positively related to service innovative behavior*

**- Perceived Organizational Support and Service Innovative Behavior**

Employees can have creative ideas and will often explore possible opportunities to solve current and future problems. In short, when they perceive that the organization shows concern, offers nonjudgmental and honest feedback about their work, and supports their actions, their innovative output is likely to increase (Gregory, Albritton, & Osmonbekov, 2010). This argument is at the root of the social exchange theory discussed earlier (Eisenberger et al., 1986). Recall from above that the thrust of it is that employees who perceive high levels of perceived organizational support are more likely to feel it is part of their duty to care for the organization’s development and help it achieve its goals. Specifically, employees who perceive strong organizational support experience a better needs-supplies fit, and exhibit increased creativity (Luksyte & Spitzmueller, 2016). Conversely, when employees perceive low support from the organization, their involvement in innovation is likely to be lessened (Bos-Nehles & Veenendaal, 2017). Based on these findings, we propose the following hypotheses:

**H<sub>5</sub>:** *Perceived organizational support is positively related to service innovative behavior*

Figure 1 shows the research model developed to explore the relationships between the four operative constructs used in this study, namely, perceived organizational support, work engagement, affective commitment, and service innovative behavior.



**Figure 1:** Research Model.

**3. Research Methodology**

This study gathered information from flight attendants working for three Vietnamese airlines, namely Vietnam Airlines, Vietjet Air, and Bamboo Airways. Because of the impact of the COVID-19 pandemic on the airline industry, they have been spending a lot of time at home, which made reaching them for this survey easy. The snowball sampling process was used to pick out flight attendants (Hendricks & Blanken, 1992). Participants who took part in the survey were recruited using Google Form. In total, 233 valid questionnaires were answered during the period May-June 2020.

Questions related to perceived organizational support were adopted from Eisenberger et al. (1986). They consisted of six items such as, for example, “My organization really cares about my well-being”. The nine-item questions on work engagement were a shortened version adapted from Schaufeli, Bakker, and Salanova (2006) and included questions such as “At work, I feel I am bursting with energy”. Affective commitment was assessed via a six-item scale developed from Meyer and Allen (1997), Mowday, Steers, & Porter, L. W. (1979), and Rhoades et al., (2001). One question, for example, was “I feel a strong sense of belonging to my organization”. Finally, to assess Service innovative behavior among the respondents, a six-

item scale adapted from Hu, Horng, & Sun (2009) was developed. It included questions such as, for example, “At work, I sometimes come up with innovative and creative ideas”.

All measurements were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). After it was translated into English by the authors, the questionnaire was reviewed by an expert in the field from Vietnam Aviation Academy and then translated back into English to ensure that there were no discrepancies between the two versions (Mullen, 1995). The valid responses show an almost equal gender balanced (males 43.3%; females 53.6%). Most of the respondents are under 30 years old (83.7%) and well over half of them hold 2-year and 4-year degrees (71.7%). The majority of them have been working in the industry for less than 3 years (74.7%) and a high proportion of respondents are cabin attendants (78.5%). The rest of them are assistant pursers and pursers (21.5%).

#### 4. Results

##### - Measurements

Measurements of the models were carried out by performing confirmatory factor analyses (CFAs) (Tabachnick, & Fidell, 2001). A good fit was found between the hypothesized four-factor model and the data ( $\chi^2/df = 1.551$ ; TLI = 0.972; CFI = 0.977; SRMR = 0.035; RMSEA = 0.049). The hypothesized model has a better fit than other alternative models, which include the three-factor model collapsing perceived organizational support and work engagement ( $\chi^2/df = 2.234$ ; TLI = 0.932; CFI = 0.943; SRMR = 0.051; RMSEA = 0.076); the two-factor model collapsing perceived organizational support, work engagement, and affective commitment ( $\chi^2/df = 2.721$ ; TLI = 0.911; CFI = 0.926; SRMR = 0.055; RMSEA = 0.086); and the one-factor model by loading all variables on a single factor ( $\chi^2/df = 4.217$ ; TLI = 0.834; CFI = 0.861; SRMR = 0.075; RMSEA = 0.118)

As shown in Table 1, the Composite reliability of the proposal model ranges from 0.92 (perceived organizational support) to 0.95 (service innovative behavior), which is over the 0.7 threshold (Bagozzi & Yi, 1988). The average variance extracted is also greater than the 0.5 threshold (Fornell & Larcker, 1981) and ranges from 0.66 (perceived organizational support) to 0.76 (service innovative behavior). These findings confirm the validity of the study framework's constructs and scales.

**Table 1:** Correlation Matrix and Average Variance Extracted

| Sample | Variable                            | Mean  | SD  | 1      | 2     | 3      | 4      | 5      | 6          | 7          | 8          | 9          | CR  | AVE |
|--------|-------------------------------------|-------|-----|--------|-------|--------|--------|--------|------------|------------|------------|------------|-----|-----|
| N=233  | 1. Age                              | 26.40 | .76 | ...    |       |        |        |        |            |            |            |            |     |     |
|        | 2. Gender                           | 1.49  | .55 | -.42   | ...   |        |        |        |            |            |            |            |     |     |
|        | 3. Education                        | 2.53  | .90 | .32**  | -.32  | ...    |        |        |            |            |            |            |     |     |
|        | 4. Tenure                           | 1.87  | 1.0 | .71**  | .12** | .23**  | ...    |        |            |            |            |            |     |     |
|        | 5. Job position                     | 1.41  | .79 | .62**  | .02   | .18**  | .66**  | ...    |            |            |            |            |     |     |
|        | 6. Work engagement                  | 4.37  | .68 | -.22** | -.09  | -.21** | -.28** | -.28** | <b>.84</b> |            |            |            | .93 | .70 |
|        | 7. Service innovative behavior      | 3.89  | .89 | -.18** | .15*  | -.19** | -.24** | -.17** | .71        | <b>.87</b> |            |            | .95 | .76 |
|        | 8. Perceived organizational support | 3.82  | .97 | -.32** | -.08  | -.21** | -.43** | -.38** | .77        | .69        | <b>.81</b> |            | .92 | .66 |
|        | 9. Affective commitment             | 4.21  | .82 | -.29** | -.03  | -.21** | -.35** | -.35** | .86        | .71        | .78        | <b>.82</b> | .93 | .68 |

CR= Composite reliability; AVE=Average variance extracted; \*p<0.05; \*\*p<0.001

- Hypotheses Testing

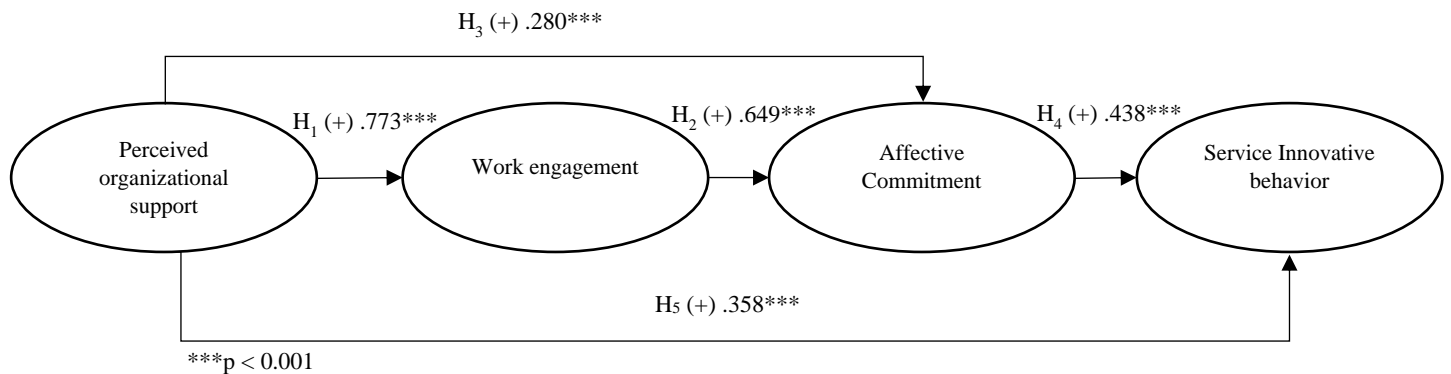
As can be seen in Table 2, the results from the analysis of the sample show a good fit with the proposed framework ( $\chi^2/df = 1.567$ ; TLI = 0.971; CFI = 0.976; RMSEA = 0.49).

**Table 2:** Results of Hypotheses Testing

| Hypotheses     | Description of Path                                | $\beta$ | SE   | t Values | Result    |
|----------------|--|---------|------|----------|-----------|
| H <sub>1</sub> | POS → Work engagement                              | .773*** | .040 | 10.33    | Supported |
| H <sub>2</sub> | Work engagement → Affective commitment             | .649*** | .132 | 8.09     | Supported |
| H <sub>3</sub> | POS → Affective commitment                         | .280*** | .062 | 3.98     | Supported |
| H <sub>4</sub> | Affective commitment → Service innovative behavior | .438*** | .094 | 4.89     | Supported |
| H <sub>5</sub> | POS → Service innovative behavior                  | .358*** | .083 | 3.96     | Supported |

\*\*\*p < 0.001

H<sub>1</sub> predicted that perceived organizational support could enhance flight attendants' work engagement. The results show that perceived organizational support has a significant positive effect on work engagement (*coefficient*=.773, *t-statistic*= 10.33, *p*<0.001). As to H<sub>2</sub> and H<sub>3</sub>, they predicted that flight attendants' perceived organizational support and work engagement have a positive effect on their affective commitment. The results support H<sub>2</sub> and H<sub>3</sub>. Both perceived organizational support and work engagement have a significant positive effect on affective commitment (*H<sub>2</sub> coefficient*=.649, *t-statistic*= 8.09, *p*<0.001; *H<sub>3</sub> coefficient*=.280, *t-statistic*=3.98, *p*<0.001). H<sub>4</sub> predicted that when flight attendants have affective commitment, they tend to behave in innovative ways that bring benefits in terms of service quality. The results show that affective commitment positively affects service innovative behavior (*coefficient*= .438, *t-statistic*=4.89, *p*<0.001). Finally, H<sub>5</sub> surmised that perceived organizational support not only affects service innovative behavior via work engagement and affective but has a direct effect on service innovative behavior. The result confirmed H<sub>5</sub>. Perceived organizational support significantly affects service innovative behavior (*coefficient*=.358; *t-statistic*=3.96, *p*<0.001). Figure 2 shows the relationship between the variables.



**Figure 2:** Model Results.

## 5. Discussion and Conclusion

This study will add to the body of literature on service innovative behavior, in particular about the relationship with perceived organizational support. It establishes a holistic model for perceived organizational support, work engagement, affective commitment, and service innovative behavior in the airline sector, all areas that have not been extensively examined in the past as noted earlier. The findings provide evidence that primarily applies to the airline industry but may also be extended to other sectors. While a number of previous studies found a close link between employees' psychological capital and their innovative behavior (e.g. Brunetto et al., 2013; Lee & Hyun, 2016; Schaufeli, 2012), the psychological processes leading to innovative behaviors, especially in the field of aviation, has not been widely studied. It is well established that creative behaviors are levers that help organizations overcome difficulties, especially with regard to the current pandemic situation (Serrano & Kazda, 2020). The results confirmed the role of work engagement and affective commitment in the relationship between perceived organizational support and service innovative behavior. This leads to the following remarks.

First, the generally stressful working environment in the aviation industry, one in which employees often struggle to remain engaged in their job as they are on night shift and/or work long hours, can lead to negative emotions that in turn may affect flight safety (e.g., work loneliness, work-family conflicts) (Öge, Cetin, & Top, 2018). Support from airlines in the form of non-financial benefits therefore could help employees overcome those negative feelings and engage even more in their work while aboard. As Öge et al., (2018) and Wright (2005) argued, a supporting, loving, and harmonious working environment can emotionally engage individuals in their job and cause them to have an emotional attachment to their organization.

Second, consistent with Öge et al. (2018) and Wright (2005), this study found that in the airline industry, perceived organizational support and work engagement can boost the affective commitment of flight attendants. That said, with the Covid-19 pandemic and the changing working environment that has ensued, the job commitment of flight attendants has become a topic of concern for scholars (Bajrami et al., 2021; Shin, Lee, & Hur, 2021; Singh, 2020). This makes organizational support more critical than ever and one of the best ways to ensure that flight attendants can overcome Covid-19-induced on-the-job anxiety. This is precisely what the social exchange theory advocates (Eisenberger et al., 1986). When employees feel psychologically safe, it generally happens because of perceived organizational support. This makes employees more inclined to make extra efforts and more emotionally attached to their daily tasks.

Third, with the pandemic, the number of flights operating daily has dramatically dropped, causing many airline employees to be furloughed or simply terminated (Sohn et al., 2020). However, with the prospect of seeing the spread of the virus coming under control thanks to worldwide vaccination, the post-Covid-19 new normal is looming on the horizon and with it the return of passengers. Competition though will be fiercer than ever as pre-Covid-19 level of passengers are not expected to return until 2024. If airlines want to maintain their competitive advantage, this will require employees to go the extra step and be willing to perform tasks that may not be included in their job description (e.g. sanitary seating arrangements may continue to be enforced by authorities). This in turn will require the caring and support of airlines and a willingness to consider employees' suggestions, no matter how bold, regarding new ways of providing service. Employees who feel that their organization is on their "side" (e.g., willing to listen to new methods) are far more likely to spend time helping their employers improve customer service while not incurring higher costs at a time of financial stress.

As a frontline team, flight attendants indeed can directly convey the organization's message to passengers. This is in line with a number of scholars who have determined that employees who feel positive emotions in their work will “repay” their organization by extra-role behaviors such as innovative ideas, organizational citizenship behaviors, etc. (Afsar & Badir, 2017; Bani-Melhem et al., 2018; Qi et al., 2019).

#### *- Managerial Implications*

The findings in this study help us better understand the psychological process of flight attendants and how organizational care might influence service innovation behavior. From a managerial perspective, the following suggestions can therefore be made:

The more organizational support, the greater the level of participation and engagement of flight attendants the tasks assigned to them. To begin with, airlines must be concerned with labor policies. Non-monetary advantages, such as income distribution equality, shifts, breaks, workgroup organization, and employee feedback channels, should be addressed as part of a constructive dialogue and a way of showing organizational support. Airlines should also address the issue of the communication and conflict resolution capabilities of supervisors, in particular those who interact directly with flight attendants and are therefore responsible for concretizing the organization's employee support policy. The image of the organization is reflected in part through them. If flight attendants feel they are supported at work, in particular by their direct supervisors, they will immerse themselves in the operations of the company and will most likely harbor positive feelings such as wanting to stay with the company. A positive behavior will also make them more proactive at work and ready to contribute to the organization's operations by providing new ideas and innovative methods of operation.

Secondly, airlines may consider adopting measures tailored to long-term employees and those in high positions. In the context of the present epidemic, their valuable experience and knowledge of the industry is critical for airlines as they seek to gain a competitive edge. Furthermore, they are part of the teams who will train future generations of employees and help airlines achieve long-term expansion while addressing market obstacles. In doing so, policymakers should keep in mind the importance of balancing the preferred policies of certain groups with organizational discrimination. When modifying rules in the organization, it is therefore preferable to solicit employees' feedback in order to reach a mutual agreement and avoid undermining other employees' perceptions of the organization's support for them.

Finally, airlines may consider holding an annual meeting designed to collect feedback from flight attendants on current policies in order to amend and correct ineffective elements, if any. Apart from sending a strong signal that the company does care about its employees' input, allowing workers to contribute to individual welfare policies encourages them to participate more in the organization's operations and boosts their capacity to work harder. In addition, publicly commenting on the organization's operations will enhance the relationship between leadership and employees, foster common knowledge inside the airline, and serve as a platform for the airline to design, among other benefits, welfare services for flight attendants.

#### *- Limitations and Future Research Directions*

This study has some limitations. First, we analyzed data from cross-sectional groups. Longitudinal studies are therefore necessary to reduce bias and discover other relationships (Podsakoff, MacKenzie, & Podsakoff, 2012).

Second, our study focused on the airline industry, which was used to get insights on the relationship between perceived organizational support and innovative behavior among employees, in this case flight attendants. The proposed research model should be expanded to other service industries or compare the same industry in other countries.

Third, future studies should explore other psychological factors (e.g., psychological empowerment, perceived supervisor support) to better understand the psychological process of service innovative behavior.

Fourth, Vietnamese culture is rooted in Confucian philosophy (Jia, 2016), which means that the behavior of employees is shaped by the organizational climate and their supervisors. Future study could revisit the framework in another context.

Finally, flight attendants are organized as groups. Since the characteristics of a group may affect their outcome behavior, further research could examine the characteristics of cabin crew from a perspective such as, for example, group diversity (Long Nguyen, Huong Nguyen, & Ho, 2021), cultural intelligence (Seriwatana & Charoensukmongkol, 2020) under the support of the organization and its outcome behavior.

## References

- Afsar, B., & Badir, Y. (2017). Workplace spirituality, perceived organizational support and innovative work behavior. *Journal of Workplace Learning*, 29(2), 95-109.
- Albrecht, S., & Andretta, M. (2011). The influence of empowering leadership, empowerment and engagement on affective commitment and turnover intentions in community health service workers: Test of a model. *Leadership in Health Services*, 24(3), 228-237.
- Amabile, T. M. (1996). *Creativity in context*. Boulder, CO: Westview Press.
- Andrew, D. (2012). Institutional policy innovation in aviation. *Journal of Air Transport Management*, 21, 36-39.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74-94.
- Bajrami, D. D., Terzić, A., Petrović, M. D., Radovanović, M., Tretiakova, T. N., & Hadoud, A. (2021). Will we have the same employees in hospitality after all? The impact of COVID-19 on employees' work attitudes and turnover intentions. *International Journal of Hospitality Management*, 94, 102754.
- Bakker, A. B., Demerouti, E. & Verbeke W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, 43(1), 83-104.
- Bani-Melhem, S., Zeffane, R., & Albaity, M. (2018). Determinants of employees' innovative behavior. *International Journal of Contemporary Hospitality Management*, 30(6), 00-00.
- Baran, B. E., Shanock, L. R., & Miller, L. R. (2012). Advancing organizational support theory into the twenty-first century world of work. *Journal of Business and Psychology*, 27(2), 123-147.
- Bettencourt, L. A., & Brown, S. W. (1997). Contact employees: Relationships among workplace fairness, job satisfaction and prosocial service behaviors. *Journal of Retailing*, 73(1), 39-61.
- Bos-Nehles, A. C., & Veenendaal, A. A. (2019). Perceptions of HR practices and innovative work behavior: The moderating effect of an innovative climate. *The International Journal of Human Resource Management*, 30(18), 2661-2683.
- Brunetto, Y., Xerri, M., Shriberg, A., Farr-Wharton, R., Shacklock, K., Newman, S., & Dienger, J. (2013). The impact of workplace relationships on engagement, well-being, commitment and turnover for nurses in Australia and the USA. *Journal of Advanced Nursing*, 69(12), 2786-2799.
- Chen, C. F., & Kao, Y. L. (2012). Moderating effects of work engagement and job tenure on burnout-performance among flight attendants. *Journal of Air Transport Management*, 25, 61-63.

- Cheng, T. M., Hong, C. Y., & Yang, B. C. (2018). Examining the moderating effects of service climate on psychological capital, work engagement, and service behavior among flight attendants. *Journal of Air Transport Management*, 67, 94-102.
- Chughtai, A. A., & Buckley, F. (2011). Work engagement: Antecedents, the mediating role of learning goal orientation and job performance. *Career Development International*, 16(7), 684-705.
- Eisenberger, R., & Stinglhamber, F. (2011). *Perceived organizational support: Fostering enthusiastic and productive employees*. Washington DC: American Psychological Association.
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71(3), 500-507.
- Farrell, A. M., Souchon, A. L., & Durden, G. R. (2001). Service encounter conceptualization: Employees' service behaviors and customers' service quality perceptions. *Journal of Marketing Management*, 17(5-6), 577-593.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Franke, M. (2007). Innovation: The winning formula to regain profitability in aviation? *Journal of Air Transport Management*, 13(1), 23-30.
- Gokul, A., Sridevi, G., & Srinivasan, P. T. (2012). The relationship between perceived organizational support, work engagement and affective commitment. *International Journal of Management*, 4(2), 29-37.
- . *Problems and Perspectives in Management*, 19(1), 163-176. Gregory, B. T., Albritton, M. D., & Osmonbekov, T. (2010). The mediating role of psychological empowerment on the relationships between P-O fit, job satisfaction, and in-role performance. *Journal of Business and Psychology*, 25(4), 639-647.
- Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.
- Hendricks, V. M., & Blanken, P. (1992). Snowball sampling: Theoretical and practical considerations. In Hendricks, V. M., Blanken, P., & Adriaans, N. (Eds.), *Snowball sampling: A pilot study on cocaine use* (p. 17-35). Rotterdam: IVO.
- Hochschild, A. R. (1983). *The managed heart*. Berkeley, CA: University of California Press.
- Hu, M. L. M., Horng, J. S., & Sun, Y. H. C. (2009). Hospitality teams: Knowledge sharing and service innovation performance. *Tourism Management*, 30(1), 41-50.
- Jia, P. (2016). Book review: Jeffrey L. Richey, *Confucius in East Asia: Confucianism's history in China, Korea, Japan, and Vietnam*, Association of Asian Studies. *Japanese Journal of Political Science*, 17(1), 137-139.
- Katz, D. (1964). The motivational basis of organizational behavior. *Behavioral Science*, 9(2), 131-146.
- Lee, J., & Mo, J. (2011). Analysis of technological innovation and environmental performance improvement in aviation sector. *International Journal of Environmental Research and Public Health*, 8(9), 3777-3795.
- Lee, J., & Peccei, R. (2007). Perceived organizational support and affective commitment: The mediating role of organization-based self-esteem in the context of job insecurity. *Journal of Organizational Behavior*, 28(6), 661-685.
- Lee, K. H., & Hyun, S. S. (2016). An extended model of employees' service innovation behavior in the airline industry. *International Journal of Contemporary Hospitality Management*, 28(8), 1622-1648.
- Levinson, B. W. (1965). States of awareness during general anaesthesia: Preliminary communication. *British Journal of Anaesthesia*, 37(7), 544-546.

- Liu, J. S., & Chang, K.-H. (2009). Effects of environmental cues, satisfaction and affective commitment on extra-role behaviors. *International Journal of Economics and Business Research*, 1(4), 381-399.
- Llorens, S., Schaufeli, W., Bakker, A., & Salanova, M. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exist? *Computers in Human Behavior*, 23(1), 825-841.
- Le Hoang, L. N., Nguyen, T. T. H., & Ho, V. A. (2021). Fostering innovative behavior in the aviation industry: The role of perceived supervisor support and work group diversity
- Luksyte A., & Spitzmueller C. (2016). When are overqualified employees creative? It depends on contextual factors. *Journal of Organizational Behavior*, 37(5): 635–653.
- Meyer, J. P., & Allen N. J. (1997). *Commitment in the workplace: Theory, research and application*. Thousand Oaks, CA: Sage Publications.
- Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61-89.
- Meyer, J. P., Allen, N. J., & Gellatly, I. R. (1990). Affective and continuance commitment to the organization: Evaluation of measures and analysis of concurrent and time-lagged relations. *Journal of Applied Psychology*, 75(6), 710-720.
- Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14, 224-247.
- Mullen, M. R. (1995). Diagnosing measurement equivalence in cross-national research. *Journal of International Business Studies*, 26(3), 573-596.
- O'Driscoll, M. P., & Randall, D. M. (1999). Perceived organizational support, satisfaction with rewards, and employee job involvement and organizational commitment. *Applied Psychology: An International Review*, 48(2), 197-209.
- Öge, E., Cetin, M., & Top, S. (2018). The effects of paternalistic leadership on workplace loneliness, work family conflict and work engagement among air traffic controllers in Turkey. *Journal of Air Transport Management*, 66, 25-35.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539-569.
- Qi, L., Liu, B., Wei, X., & Hu, Y. (2019). Impact of inclusive leadership on employee innovative behavior: Perceived organizational support as a mediator. *PLoS ONE*, 14(2), e0212091.
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, 87(4), 698-714.
- Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of Applied Psychology*, 86(5), 825-36.
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21(7), 600-619.
- Schaufeli, W. (2012). Work engagement: What do we know and where do we go? *Romanian Journal of Applied Psychology*, 14(1), 3-10.
- Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In *bridging occupational, organizational and public health* (p. 43-68). Dordrecht: Springer.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701-716.

- Schaufeli, W. B., Salanova, M., Gonzalez-Roma, V., and Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3(1) 71-92.
- Schneider, S., Spieth, P., & Clauss, T. (2013). Business model innovation in the aviation industry. *International Journal of Product Development*, 12(18), 286-310.
- Scrima, F., Lorito, L., Parry, E., & Falgares, G. (2014). The mediating role of work engagement on the relationship between job involvement and affective commitment. *The International Journal of Human Resource Management*, 25(15), 2159-2173.
- Seriwatana, P., & Charoensukmongkol, P. (2020). Cultural intelligence and relationship quality in the cabin crew team: The perception of members belonging to cultural minority groups. *Journal of Human Resources in Hospitality & Tourism*, 20(2), 147-173.
- Serrano, F., & Kazda, A. (2020). The future of airport post COVID-19. *Journal of Air Transport Management*, 89, 101900.
- Shin, Y., Lee, E. J., & Hur, W. M. (2021). Supervisor incivility, job insecurity, and service performance among flight attendants: The buffering role of co-worker support. *Current Issues in Tourism*. Retrieved April 28, 2021, from <https://doi.org/10.1080/13683500.2021.1905618>
- Shore, L. M., & Wayne, S. J. (1993). Commitment and employee behavior: Comparison of affective commitment and continuance commitment with perceived organizational support. *Journal of Applied Psychology*, 78(5), 774-780.
- Singh, R. (2020). Blue skies or dark clouds for the pilots and flight attendants? Loyalty, self-loyalty, commitment and motivation in the flight industry. *Karlstad University, independent thesis*. Retrieved February 17, 2021, from <http://www.diva-portal.org/smash/get/diva2:1464610/FULLTEXT01.pdf>
- Sohn, A. H., Phanuphak, N., Baral, S., & Kamarulzaman, A. (2020). Know your epidemic, know your response: Understanding and responding to the heterogeneity of the COVID-19 epidemics across Southeast Asia. *Journal of the International AIDS Society*, 23(7), e25557.
- Tabachnick, B. G., & Fidell, L. S. (2001). Principal components and factor analysis. *Using multivariate statistics*, 4(1), 582-633.
- Wright, S. L. (2005). *Organizational climate, social support and loneliness in the workplace*. Bingley: Emerald Group Publishing Ltd.
- Xerri, M. J., & Brunetto, Y. (2013). Fostering innovative behaviour: The importance of employee commitment and organisational citizenship behaviour. *The International Journal of Human Resource Management*, 24(16), 3163-3177.
- Yeh, H., & Hong, D. (2012). The mediating effect of organizational commitment on leadership type and job performance. *The Journal of Human Resource and Adult Learning*, 8(2), 50-59.
- Yongxing, G., Hongfei, D., Baoguo, X., & Lei, M. (2017). Work engagement and job performance: The moderating role of perceived organizational support. *Anales de Psicología*, 33(3), 708-713.

# Strengthening Mahidol University Institute of Molecular Biosciences' Innovation and Research Policy toward a World-Class Research Institute

**Natthanit Srimaserm**

Institute of Molecular Biosciences, Mahidol University, Thailand.

Institute Secretary and Acting Assistant Director for Human Resources

Natthanit.sri@mahidol.edu

## Abstract

This study focuses on the current policy of the Institute of Molecular Biosciences, Mahidol University, Bangkok, Thailand, on innovation and research. Specifically, the purpose of this study is to determine what should be done to strengthen the implementation of the institute's Research and Innovation Policy and Strategy, which aims to turn the institute into a world-class research organization. To this end, a survey was conducted among executives, staff members, and students from the institute. The questionnaire was based on six variables: leadership, world-class policy, mission and vision, technological management, organizational change, and human resource management. The results indicate that the model of theory-based policy is consistent with the evidence-based data. Recommendations based on the responses of the population surveyed were made along the constructs used in this study with the aim of contributing to the strengthening of the policy implementation process.

**Keywords:** Innovation and Research Policy, World-Class Research Institute, Institute of Molecular Biosciences

## 1. Introduction

Pursuant to Thailand's 20-year National Strategy and Thailand 4.0, all educational institutions are required to develop a curriculum that will strengthen the country's economy and speed up its level of development ( Office of the National Economic and Social Development Council, 2017). Sciences and technology are targeted as the prime areas for advancement. The focus is on ten specific industries, a few special economic zones, and start-ups, which are all seen as essential mechanisms to propel growth and a digital economy. In many ways, the aims of these policies are not much different from those outlined in the policy of the Institute of Molecular Biosciences, Mahidol University, Bangkok, Thailand, (hereinafter 'the institute') toward innovation and research. In a nutshell, the policy aims to turn the institute into a world-class research organization. The emphasis is on developing innovation and state-of-the-art research facilities and articulating an internationally recognized curriculum (Institute of Molecular Biosciences, Mahidol University, 2019). The policy also requires students to have an apprentice experience in countries that are members of the Association of Southeast Asian nations (ASEAN), the 10-member regional grouping currently marching toward economic integration (ASEAN Community, 2015).

This is an opportunity for Thailand to become an education hub within ASEAN and for the institute to grow beyond its borders thanks to ASEAN-wide extensive research. This is all the more the case as with the advances of the digital and communication technology, educational channels have been expanding and boosting online teaching and life-long learning. Clearly, the Thai government's strategy marks the start of new standards for research and education, particularly in the field molecular biosciences, as it combines with

Mahidol's own efforts. All this spells of outstanding opportunities and potential for the institute potentially on track to seek world-class recognition. This also gives a clear sense of the benefits at stake for the Thai society as a whole as well as for the national and regional economies (ASEAN Department, Ministry of Foreign Affairs, 2020). The institute's current policy on innovation and research is at the core of this study. It has been in place since 2016 and outlines the path to be followed by the institute to become a world-class research center. The policy requires many changes over time in the management and staffing of the institution. In a highly competitive globalized economy, it is vital for its future as it will enable it to sustainably become part of the global community of scientists and academics.

Although the policy has now been in place for 5 years, it has yet to be fully implemented. This raises, among others, the question of what the institute should do in the future to ensure that the move towards a world-class institution follows its due course. In short, what should be done to ensure full implementation of the policy? To answer this question, this study surveyed various stakeholders in the policy, namely institute's executives, faculty members, administrative staff, and students. In light of the respondents' replies, this study thus aims to identify areas in the current policy implementation that currently stand in the way steering the institute toward becoming a world-class research body. The hope is that this study will provide additional guidelines and insightful comments that will contribute to the achievements of the ultimate goals of the policy and that it goad all concerned parties to take every step required. Application of this study's findings will also be useful for other educational settings and could serve as an inspiration for them to broaden their scopes.

## **2. Key Concepts and Research Framework**

This section clarifies the variables used in this study.

### ***- Leadership***

Broadly speaking, leadership may be defined as the ability to make things happen (De Waal, 2012). Leaders influence employees to work together toward the fulfillment of an organization's mission and the achievement of its goals. Two types of leaders frequently discussed in the relevant literature are transactional and transformational leaders. The latter are leaders who lead primarily by using social exchanges (or transactions; hence their name). Transformational leaders stimulate and inspire (transform) followers to achieve extraordinary outcomes (Bhaskar, & Paulina, 2016). There is overwhelming evidence supporting the superiority of transformational leadership over transactional leadership (e.g. Day et al., 2014; De Waal, 2012). Ideally, a leader should be charismatic, i.e., he/she should be enthusiastic, self-confident and his/her personality and actions should influence people to behave in certain ways. Charismatic leaders have a vision and are willing to take risks to achieve that vision (Dertouzos, 2009). There is a strong correlation between charismatic leadership and high performance and satisfaction among followers (Prasad & Junni, 2016). Another type of leadership discussed in the relevant literature (e.g. Taylor, Cornelius, & Colvin, 2014) is visionary leadership, which can be described as the ability to create and articulate a realistic, credible, and attractive vision of the future that improves upon the present situation (Prasad & Junni, 2016). In the context of this research, leadership means being the leader in collaborative knowledge discovery, vision coordination, and creativity and as a coach and moral leader.

### ***- World-Class University***

The concept of 'world-class university' is a contested concept. Worldwide competitiveness has given rise to the idea of world-class university (Levin, Jeong, & Ou Dongshu, 2006; Salmi, 2013). The term has now become a catch phrase not only for improving the quality of learning and research in higher education but also for developing the capacity to compete in

the global higher education marketplace through the acquisition and creation of advanced knowledge (Khadri Ahmed, 2015; Levin et al. 2006). Having a world-class university is everyone wishes and requires national, collective, and programmed efforts (Altbach, 2004). It is widely agreed that the first and foremost determinant of academic excellence is the presence of a critical mass of top students and outstanding faculty (Altbach & Salmi, 2011; Khadri Ahmed, 2015)). Another key dimension relates to the degree of academic and managerial autonomy the university enjoys (World Bank (2002). A third determinant is the abundance of resources (Sharma, 2011). In other words, world-class universities make significant contributions to the advance of knowledge through research (Salmi 2012), teach with the most innovative curricula and pedagogical methods, and produce graduates who stand out (Bellon, 2005). Their activities also contribute to the cultural, scientific, and civic life of society. That said, there is, however, no magic formula for making a world-class university. Each university must choose its own pathway and develop a strategy that plays to its strengths and weaknesses, such as flexible government arrangements and abundance of resources (Williams, & Van Dyke, 2007). A long-term vision for creating a world-class university—and implementing it – should be articulated (Salmi, 2009). The role of the government may also be a critical factor (World Bank (2002).

#### ***- Mission and Vision***

Mission can be defined as systematic thinking and vision (Ludema, Laszlo, & Lynch, 2012). Mission provides an opportunity of organizational growth if the advanced technology is available and if academic users' needs are met. This requires setting the scope of work so that the organization's policies can be transferred from the executive to concrete implementation. In many instances, this also requires developing staff capacity. The mission must be identified unambiguously and appropriately, with feasibility (Hwang & Choung, 2013). As systematic thinking, an organization's mission cannot be disassociated from its vision, which must be seen in parallel with the vision and scope of work (McShane & Glinow, 2005). An organization's vision should tap into people's emotions and inspire enthusiasm. If properly selected and implemented, the mission and vision can energize individuals to use their skills, talents, and resources to fulfill the vision.

#### ***- Organizational Change***

Organizational change refers to the act of altering a component of the organization, such as, for example, its culture, internal processes, or the underlying technologies or infrastructure it uses to operate (Wheelen & Hunger (2008). It happens when an organization decides to change its structure, strategies, culture, policies, technology, or in some cases even its core values in order to improve performance or adapt to new circumstances. Organizational change encourages innovation, and can lead to better opportunities (Buddhapoompitak & Inwang, 2011). Change, however, often meets with resistance as it affects vested interests. This is why the reasons for change and its benefits need to be clearly explained by leaders. Transparency is critical as changes that are clearly communicated are generally more accepted (Cummings & Worley, 2005). According to Szabla, Stefanchin, and Warner (2014), top executives should act as change agents. In the context of this study, organizational change means a shift of policy, vision and goals toward policies that guide the development of the institute at different levels of the organization, both as a whole and as a collection of units (Pearce & Robinson, 2011). It also refers to the application of innovation and teamwork in order for the organization to achieve its goals of internationalization.

#### ***- Human Resource Management***

Broadly speaking, human resource management may be defined as the strategy and process to manage personnel (Schwartz, 2006). It is a technique to strengthen knowledge, competency and skills. HR management is concerned with people at work and their relationship within

the enterprise, enabling each to make his/her own best contribution to its success, both as an individual and as a member of working group (Decramer, Smolders, & Vanderstraeten, 2013). Operative functions include recruiting, (the most challenging task for any HR manager), training and developing, rewarding (compensation and benefits) and performance appraisal (Boxall, & Purcell, 2016). Strengthening the capacity of employees is often critical to enhance their performance to a level that will facilitate the organization’s goal achievement. Human resource management also helps to ensure that the personnel is able perform functions at their best, which in the end will further contribute to the organizational success

**- Technological Management**

Technology management refers to the management of the use of technology for human advantage. It relates to the application of advanced technology and technological education (Reich & Hager, 2014) and promotes adoption of new equipment. Technology is regarded as an important resource that contributes to an organization’s success. This is also a strategic device that gives it a competitive advantage as all activities are technologically applied (Olsson & Meek, 2020). Technology matters to staff’s performance improvement (Pearce & Robinson, 2009). This, however, requires training and sufficient resources as well as good planning. Simultaneously, all stakeholders should be identified and the staff trained (Wiratchaniphawan, 2011).

Table 1 shows the conceptual framework used in this study and its components and sub-components.

**Table 1:** Conceptual Framework

| Objective   | Component                     | Sub-Component                                     |
|---|-------------------------------|---|
| Strengthening Mahidol University Institute’s innovation and research policy toward a world-class research institute | Leadership                    | - Internal skills<br>- External skills            |
|   | World-Class University Policy | - International graduate program<br>- Instruction |
|   | Mission and Vision            | - Staff<br>- Institute                            |
|   | Organizational Change         | - Staff’s change<br>- Institute’s strategy        |
|   | Human Resource Management     | - Individual<br>- Group                           |
|   | Technological Management      | - Management<br>- Policy                          |

**3. Research Methodology**

*- Data Collection*

This quantitative research study relies on a survey to address the research questions outlined in the introduction, which can be rephrased as follows. What in the present implementation of the policy needs to be strengthened and/or changed in order for the institute to be on track to becoming a world-wide innovative research center? Based on relevant literature reviewed in the previous section, a questionnaire was developed in order to be submitted to the targeted population.

The questionnaire consists of three parts. Part 1 focuses on the respondents' demographics (sex, age, education, etc). Part 2 covers the six variables discussed above. It includes:

- 9 questions on leadership and its two sub-components (internal and external skills);
- 6 questions on the concept of world-class university and its two sub-variables (international graduate program and instruction);
- 10 questions on mission and staff and institute, its two sub-variables;
- 7 questions on organizational change and its two sub-components (staff's change and institute's strategy)
- 7 questions on human resource management and its sub-variables (individual and group); and
- 10 questions on technological management and its sub-components (management and policy).

This part uses a 5-point Likert scale. Part 3 consists of one open-ended question that seeks comments and recommendations on the institute's innovation and research policy. All responses were kept confidential. In total, 253 questionnaires were distributed.

The targeted population in this study consists of executives, staff members, and students of the Institute, all regarded as playing an important role in driving the Institute toward a world-class research body. They can be classified in three groups as follows:

- *Group 1*: 15 executives, including the director of the institute, the deputy director, assistant directors, heads of cluster, heads of research center, and department heads.
- *Group 2*: 131 staff members, including faculty members (professor, associate professors, lecturers, etc) and supporting staff members.
- *Group 3*: 107 students currently completing a master's degree or a PhD at the Institute.

#### - *Content Validity*

The questionnaire was tested for content validity by five experts, who examined its consistency with the research objectives and its wording. The Index of Item Objective Congruence (IOC) was determined. An  $IOC \geq .50$  means that each question answered the research objectives and an  $IOC < .50$  that each question did not answer the research objectives. Reliability was tested using the Cronbach Alpha Coefficient. The test was conducted on a population of 30 people with characteristics similar to those of the target population. The selected questions had a  $\alpha$  value ranging from 60 upward, which showed acceptable reliability and discrimination. The questionnaire was reliable and consistent (Wanitbancha, 2014).

#### - *Data Analysis*

The data was analyzed using SPSS. Data on the respondents was distributed by frequency and percentage. The mean and standard deviation method was employed to determine the extent of the impact of the policy on the institute's effort to become a world-class research body. Statistical significance was set at 0.05 level and the correlation determined by using the correlation test and correlation component analysis. A Second Order Confirmatory Factor Analysis (CFA), using LISREL 8.8, was conducted to test the accuracy of the components in the development of a research and innovation policy at the institute. Content analysis was used to capture content with similar issues in the same group and draw conclusions.

## **4. Results**

129 valid questionnaires were collected out of the 253 questionnaires that had been initially distributed (51%). A group-by-group analysis of the demographic data indicate that seven

members of Group 1 are males and five are females. 9 of them have a doctoral degree and 3 hold a master's degree. 75 percent of them are over 45 and 25 percent are 36-45 years old. Of the 72 respondents that makes up Group 2 (30 academic and 42 support staff members), 41 are females and 31 males. 43.1 percent of them have a doctoral degree, 34.7 percent a master's degree, and 2.8 percent a bachelor's degree. 51.4 percent of them are 45 years old or above, 26.4 percent between 36-45, 18.1 percent between 25-35, and 4.2 percent under 25. The 45 students in Group 3 are predominantly female (32, 71.1%) and 13. 66.7 percent of them are working on a PhD and the rest of them on a master's degree. 48.9 percent are between 25-35 years old, 37.8 percent 36-45, and 13.3 percent over 45.

The results of the Second-Order Factor Analysis indicates that all components fitted. The Second-order factor model presented a Chi-square ( $\chi^2$ ) of 59.13, a p-value of 0.06, a Relative Chi-square ( $\chi^2/df$ ) of 2.11, a Goodness of Fit Index (CFI) at 0.99, an Adjusted Goodness of Fit Index (AGFI) at 0.97, and a Root Mean Square Error of Approximation (RMSEA) of 0.04. When arranged in order, all the components are ranked as follows:

1. Leadership at 0.76
2. World-class university policy at 0.72
3. Mission at 0.71
4. Technological management at 0.70
5. Organizational change at 0.67
6. Human resource management at 0.59

## ***5. Discussion***

At the onset of this discussion of the content of the questionnaire and before focusing on the six components and making recommendations, it is important to note the following. All the executives, academic staff members, and students surveyed agreed on the relevance of identifying weaknesses in the current implementation of the policy and welcomed being able to offer their views on the issues at stake. They also perceived the six components and their sub-components as essential support to move the institute to the international level. Moreover, almost all of them concurred on the fact that the policy must be taken seriously by every stakeholder and requires efforts from every concerned party.

### ***- Leadership***

Recall from above that strong leadership skills include creative management, morality, learning, policy adaptation, and communication skills. As we saw then, ideally, a leader should also be charismatic, that is be enthusiastic and able to influence people to behave in certain ways. Many respondents view these attributes as essential. They also view communication skills as crucial. According to them, leaders should make the institute's vision clear and encourage open communication among academics. This requires two-way communication and transparency. According to some respondents, creativity and responsibility should also be integral to a leader's set of skills. In addition, some opined that executives should do more in terms of promoting molecular biosciences innovation.

### ***- World-Class University***

Today, more than ever, education is a global process; one greatly facilitated by the technological advances of the last decades. As a result, a majority of the respondents think that there should be more international programs as well as more use of distance learning technology. Many see the institute's efforts in terms of enrolling international students and recruiting international lecturers lagging behind, something which the Covid-19 pandemic has exacerbated. As a result, they perceive that there is a gap between what needs to be achieved and what has been achieved to attain world-class status. Many also see a pressing need for talent

mobility. According to them, exchanges with internationally recognized graduate programs with a strong innovation record would be highly beneficial.

#### *- Mission and Vision*

While by all accounts the institute's current policy has the ability to create and articulate a realistic, credible, and attractive vision of the future that improves upon the present situation, responses to the questions on this issue suggest that its content has not been clearly communicated to all stakeholders. The same goes for the mission. Yet, as stated earlier, missions and visions that are clearly communicated are generally more accepted and can energize individuals to use their skills, talents, and resources to fulfill them. This is all the more critical as, in the case of the institute, they require the long-term commitment of those involved. Some respondents also pointed out that the institute organizational culture is difficult to identify and remains ambiguous. In their view, more should be done to assert it and outline its contours.

#### *- Organizational Change*

One recurrent comment from respondents is the need to establish a more productive and efficient cross-disciplinary working atmosphere; one, which in their view would create far more opportunities to exchange or learn across courses. This is a legitimate request as today, innovation is essentially a cross-functional process. Innovative companies have long adopted the practice of forming teams along competences rather than functions. This a successful model which the institute should make its own. This requires a shift of focus that is easier said than done though. As noted earlier, change often meets with resistance, especially when it threatens vested interests. In the same vein, a number of the responses stressed the need to further promote interdisciplinary and multidisciplinary studies as well as collaboration with public organizations and the private/industrial sector; two important potential sources of knowledge and funds. Some respondents also stressed the need to uphold research ethics and develop a research management and evaluation system that supports innovation through the integration of a reward and performance system.

#### *- HR Management*

Apart from the need to step up the hiring of international lecturers, which as we just saw is mentioned by almost all the respondents, other recurring themes in the questionnaires include capacity building among staff members and the need to motivate staff and researchers alike and set up a reward system for satisfactory performance. Moreover, scholarships for overseas studies are perceived as an essential tool for staff with potential to carry out the innovation policy. Also listed are academic conferences and working group visits overseas. Another recurring suggestion concerns research grants, which many respondents believe should be optimized as part of the institute's strategy to advance research.

#### *- Technological Management*

Issues raised by respondents with regard to technological management include appropriate training, adequate resource allocation, capacity building, and intellectual property management. One need identified is the need for a technological manager with the authority to enforce the policy. Simultaneously, all stakeholders should be identified and training on the latest technology provided to them. Relevant planning and assessment of policy implementation also matter to respondents. So is the development of research structures that promote resource optimization. As pointed out by a number of them, the institute should educate its personnel on intellectual property rights and the transfer of research results. They see this as part of creating an environment conducive to the development of research that has commercial applications. This need for innovation and research in the fields that are the institution's strengths to have practical applications is emphasized in their responses,

### ***5. Conclusion and Recommendations***

A number of obstacles to the full implementation of the policy articulated to turn the institute into a world-class research center have been identified by the respondents and viable solutions offered. Before listing the suggestions made by respondents as well as the recommendations made by the author, it will be helpful first to summarize these obstacles.

They can be summarized as follows;

- Insufficient promotion of innovative research for new knowledge in sciences;
- Insufficient networking with the government and the private industrial sector for competitive advantage;
- Insufficient action in response to societal needs;
- Lack of optimization of intellectual property rights;
- Underutilization of distance-learning technology;
- Public relations issues in regard to international courses;
- Failure to meet targets in terms of the number of foreign lecturers and students;
- Constant back and forth in terms of commitment to the policy;
- Lack of efficient technology-oriented management;
- Lack of staff training on the world-class policy; and
- Ambiguous organizational changes that require certain capacities for which the staff is not properly trained.

#### ***- Recommendations***

In light of the perceived deficiencies in the application of the policy and the responses to the questionnaire, the following recommendations can be made toward its strengthening. It is important to note at this juncture that since some of the changes they imply may be met with resistance, it is especially critical that their relevance be clearly explained:

- 1) Seeing that an internationally recognized university should have excellence in education, the institute should (i) accelerate the development of international programs, (ii) increase the number of international faculty members and graduate students, and (iii) adopt a strong curriculum.
- 2) In order to enhance educational opportunities for competent students, high quality teaching and other instructional activities and the availability of state-of-the-art laboratories and other pertinent facilities should remain a priority.
- 3) Support resources should be increased accordingly as these measures call for substantial funding.
- 4) Given that research and the development and dissemination of knowledge are attributes of a world-class university, collaboration with international partner organizations should be promoted in order to facilitate the identification, growth, and extension of concepts and ideas as well as their transformation into goods, and services.
- 5) There should also be mechanisms to strengthen the staff's research capacity and related skills.
- 6) International standards of research should be strictly adhered to.
- 7) Interdisciplinary research, including with national and international institutions of higher learning should be strongly encouraged.
- 8) A different system to manage and evaluate research should be devised. Performance-based research funding should be the basis for funding support. Prioritization also should be a part of research evaluation and selection.
- 9) Since there is wide agreement that a great university conduct activities contributing to the cultural, scientific, and civic life of society, producing molecular bioscience graduates, offering academic services in molecular biosciences, and providing

services that engage and contribute to the larger community including the regional and national communities should be encouraged.

- 10) To ensure self-reliance and sustainable development, the institute's intellectual property rights should be fully exploited as part of collaborating with the private industrial sector and developing research that has commercial applications (applicability here means that the knowledge is value-added and ready for commercial purpose).
- 11) In the same vein, an ecosystem promoting the efficient management of intellectual property, the rise of entrepreneurship culture, and research that can be commercialized should be established.
- 12) To this end, education on intellectual property rights and the transfer of research results should be enhanced. Education on entrepreneurship and relevant related topics such as start-up and spin-offs should also be included.
- 13) Research grants should be optimized and efforts to raise funds from the private sector stepped up, including abroad.
- 14) Finally, making decisive bold steps to act on these recommendations is crucial for attaining international status.

#### - Recommendations for Future Studies

This study focuses on one university in Thailand and one institute. It would be very instructive to have the same type of research and concerns applied to different contexts. Future studies could look at similar institutes in Thailand or abroad and based on this study, compare them and explore differences. In the same vein, future studies could focus on overseas institutes and the different contexts in which they operate. Differences could be identified and analyzed in light of this study. Finally, these studies could use EDFR, MANOVA, or a Structural Equation Model (SEM) to analyze a wider variety of variables.

#### References

- Altbach, P., & Salmi, J. (2011). *The road to academic excellence: The making of world-class research universities*. Washington DC: The World Bank.
- Altbach, P. (2004). The costs and benefits of world-class universities. *Academe*, 90(1), 20-23.
- ASEAN Affairs Department, Ministry of Foreign Affairs. (2019). Work Plan for the Establishment of ASEAN Community and ASEAN Culture. Retrieved December 9, 2020, from <https://asean.mfa.go.th/en>
- ASEAN Community (2015). One Vision. One Identity. One Community. Jakarta: ASEAN Secretariat, December 2015. Retrieved December 9, 2020, from <https://asean.org/storage/2012/05/7.-Fact-Sheet-on-ASEAN-Community.pdf>
- Bellon, B. (2005). Can Ranking Ambition Learn from Evaluation Practices and Methodologies? Proceedings of the First International Conference on World-Class Universities, Shanghai, China (June 16-18, (p. 51-66).
- Bhaskar, P., & Paulina, J. (2016). CEO transformational and transactional leadership and organizational innovation: The moderating role of environmental dynamism. *Management Decision*, 54(7), 1542-1568.
- Boxall, P., & Purcell, J. (2016). *Strategy and human resource management*. London: Palgrave Macmillan
- Buddhapoompitak, W., & Inwang, K. (2011). *Organizational theory and management* (1<sup>st</sup> ed.). Phitsanulok: Phitsanulok University.
- Cummings, T. G., & Worley, C. G. (2005). *Organization development and change* (8<sup>th</sup> ed.). South Western: Thomson.

- Day, D. V., Fleenor, J. W., Atwater, L. E., Sturm, R. E., & McKee, R. A. (2014). Advances in leader and leadership development: A review of 25 years of research and theory. *Leadership Quarterly*, 25(1), 63-82.
- Decramer, A., Smolders, C., & Vanderstraeten A. (2013). Employee performance management culture and system features in higher education: Relationship with employee performance management satisfaction. *The International Journal of Human Resource Management*, 24(2), 352-371.
- De Waal, A. A. (2012). The characteristics of high performance organization. *Business Strategy Series*, 8(3), 179-195.
- Dertouzos, J. A. (2009). *The unfinished revolution*. New York: Harper Collins.
- Hwang, H-R., & Choung J-Y. (2013). Towards an innovation policy in the post catch up era. *Asian Journal of Innovation and Policy*, 2(1), 1-19.
- Institute of Molecular Biosciences, Mahidol University (2019). Student Science Training Program 2017 (SSTP 2019). Retrieved November 12, 2020, from <https://mahidol.ac.th/th/event/sstp-2019/>
- Khadri Ahmed, H. O. (2015). Strategic approach for developing world-class universities in Egypt. *Journal of Education and Practice*, 6(5), 125-145.
- Levin H. M., Jeong D. W., & Ou Dongshu (2006). What is World Class University? Retrieved July 16, 2020, from [http://www.tc.columbia.edu/centers/coce/pdf\\_files/c12.pdf](http://www.tc.columbia.edu/centers/coce/pdf_files/c12.pdf)
- Ludema, J. D., Laszlo, C., & Lynch, K. D. (2012). Embedding sustainability: How the field of organization development and change can help companies harness the next big competitive advantage. *Research in Organizational Change and Development*, 20, 265-299.
- Mahidol University Research Strategy 2020-2023. (2020). Mahidol University World Class University. Excellence in Research. Bangkok: Mahidol University. Retrieved November 3, 2020, from
- McShane, S., & Von Glinow, M. (2000). *Organizational behavior: Emerging knowledge* (7<sup>th</sup> ed.). New York: McGraw Hill.
- Office of the National Economic and Social Development Council (2017). 20-year national strategy (2017-2036). Retrieved January 12, 2021, from <https://www.sme.go.th/en/page.php?modulekey=379>
- Olsson, A., & Meek, L. (2020). *Effectiveness of research and innovation management at policy and institutional levels in Cambodia, Malaysia, Thailand and Vietnam*. Paris: OECD.
- Pearce, J. A., & Robinson, R. B. (2009). *Strategic management: Formulation, implementation and control* (11<sup>th</sup> ed.). New York: McGraw-Hill.
- Prasad, B., & Junni, P. (2016). CEO transformational and transactional leadership and organizational innovation: The moderating role of environmental dynamism. *Management Decision*, 54(7):1542-1568.
- Reich A., & Hager, P. (2014). Problematizing practice, learning and change: Practice-theory perspectives on professional learning. *Journal of Workplace Learning*, 26(6/7), 418-431.
- Salmi, J. (2012). The vintage handicap: Can a young university achieve world-class status? *Times Higher Education Supplement*, May 12, p. 3.
- Salmi, J. (2009). The challenges of establishing world-class universities. Washington DC: The World Bank.
- Salmi, J. (2013). Daring to Soar: A strategy for developing world-class universities in Chile. *Pensamiento Educativo. Revista de Investigación Educativa Latinoamericana*, 50(1), 130-146,

- Schwartz, S. H. (2006). Basic human values: Theory, measurement, and applications. *Revue Française de Sociologie*, 47(4), 929-968.
- Sharma, Y. (2011). How to create a world-class university. *Journal of World University New*, 192, 59-63.
- Szabla, D. B., Stefanchin, J. E., & Warner, L. S. (2014). *Connecting organizational change content with change strategy: Has theory become practice?* Emerald Group Publishing Ltd.
- Taylor, C. M., Cornelius, C. J., & Colvin, K. (2014). Visionary leadership and its relationship to organizational effectiveness. *Leadership & Organization Development Journal*, 35(6), 566-583.
- Wanitbanha, K. (2014). *Analysis of SEM using AMOS* (2<sup>d</sup> ed.). Bangkok: Chulalongkorn Publishing House.
- Wheelen, T. L., & Hunger, J. D. (2008). *Strategic management and business policy* (11<sup>th</sup> ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Williams, R., & Van Dyke, N. (2007). Measuring the international standing of universities with an application to Australian universities. *Higher Education* 53(6), 819-841.
- Wiratchaniphawan, W. (2011). *Management and administration of strategy of public organizations*. Bangkok: Four Press.
- World Bank (2002). *Constructing knowledge societies: New challenges for tertiary education*. Washington, DC: World Bank.

# Thai-Chinese Cultural Differences: An Empirical Study on How Cultural Intelligence and Gender May Affect the Subjective Well-Being of Chinese Students Enrolled at Thai Universities

I-Wen Chou

Lecturer, Dhurakij Pundit University, Thailand

i-wen.cho@dpu.ac.th

## Abstract

The purpose of this study is to determine the impact of cultural intelligence and gender on the subjective well-being of Chinese students enrolled in Thai universities. It first focuses on the cultural dimensions that differentiate Thai from Chinese culture and then considers the dimensions of cultural intelligence (CQ), metacognitive, motivational, behavioral, and cognitive CQ, and gender. The study uses a mixed methodology. Open interviews were conducted with 6 students with more than two years of cross-cultural experience. As part of the qualitative approach, 237 questionnaires were filled in by Chinese students from a private university in Thailand. It was found that 31.6 percent of the students surveyed frequently feel anxious, sad, or dissatisfied with the quality of their cross-cultural lives. Motivational CQ ( $\beta = .174, p < .05$ ) and metacognitive CQ ( $\beta = .217, p < .05$ ) were found to be positively related to subjective well-being. However, cognitive and behavioral CQ as well as gender were not significantly correlated with subjective well-being. This study could be used by educational institutions to set up programs designed to enhance student cultural intelligence.

**Keywords:** Cultural Dimensions, Subjective Well-Being, Cultural intelligence, International Chinese Students

## 1. Introduction

In the last decades, there has been a significant increase in the number of Chinese expatriates and students living abroad for long periods on the back of globalization (Center for China and Globalization, 2017). During the period 2000-2015, the number of Chinese students enrolled abroad has increased by 18.9 percent (Center for China and Globalization, 2016). It is estimated that approximately 49,000 Chinese young people are pursuing education in the United States, the United Kingdom, Canada, and Australia, not only at college level but also at high school level (Center for China and Globalization, 2016). While English-speaking nations remain the host countries of choice for many Chinese students, a growing number of them are choosing to be educated at Thai institutions of higher learning. As reported by the Center for China and Globalization (2017), Thailand has become a 'hot' destination for Chinese students. According

to Voice of America (2019), before the Covid-19 pandemic temporarily stifled student exchanges, 8,455 Chinese students were enrolled at Thai universities, both in undergraduate and graduate programs and young men and young women alike. One reason Chinese are flocking to Thai universities is the geographic proximity of the two countries. Another may be the generally lower tuition fees and cheaper cost of living and the legendary reputation of Thailand as the “land of smiles”, which in many respect is well deserved and contribute to its attractiveness as a desirable place for education. While expenditures in highly sought tourist locations such as Bangkok, Phuket, and Ko Samui are relatively high as compared Beijing, living costs in other areas is relatively low for prospective Chinese students (National Bureau of Statistics of China, 2020).

In short, Thai universities are affordable study abroad options for Chinese students when compared to popular destinations such as Australia, the U.S. and Britain. Another factor yet may be the cultural proximity of the two nations as both are part of the Asian cultural cluster under the cluster approach to cross-cultural management (Ronen & Oded, 1985). However, while on the face of it, the two cultures are closer than Chinese culture as compared to, for example, the U.S. culture (or any Western country for that matter), there exists differences between the Sino and Thai cultures that make operating across these two cultures more complex than may seem at first sight. In other words, it may not be as easy as it may appear at first glance for Chinese students enrolled at Thai universities to adapt and feel happy and comfortable living in the land of smiles. This brings to the fore a number of questions: What are the cultural differences between the two cultures? What are the cultural adaptation issues Chinese students living in Thailand are likely to face? To what extent does their ability to deal with these differences affect their subjective well-being? Does gender have an impact?

As determined by Rujiprak (2016), successful cultural adaptation leads to higher life satisfaction and greater work performance. Living happily abroad nevertheless requires cultural intelligence. Broadly speaking, cultural intelligence represents a person's ability to adapt across cultures (Earley & Peterson, 2004). So much so that it is now quite common for multinational corporations (MNCs) to evaluate the cultural intelligence of prospective expatriates prior to assigning them abroad. Research indicates that cultural intelligence has a positive effect on expatriates' performance (Lee & Sukoco, 2010; Ramalu, Wei, & Rose, 2011; Ramalu, Rose, Kumar, & Uli, 2012). According to Jyoti and Kour (2017), cultural intelligence can significantly contribute to the good performance of employees. Because of its widely recognized merits, cultural intelligence has become a way of assessing expatriates' ability to effectively function abroad. However, while cultural intelligence is commonly used to explore the prospective behavior and efficiency of employees once they are assigned abroad, it is rarely used in international student research. Indeed, there is scant evidence of such practice among the student population.

Yet, it is regarded as a reliable tool for predicting success living and working abroad. Because of its well-recognized reliability as a determinant of cross-cultural adaptation and life satisfaction, cultural intelligence will be at the core of this study. As determined by Ang and Van Dyne (2008), cultural intelligence involves four dimensions, namely, metacognitive, motivational, cognitive, and behavioral cultural intelligence. These various dimensions of cultural intelligence are apt to affect the life satisfaction (and therefore the subjective well-being) of Chinese students enrolled at Thai universities. This is precisely the determination which this study seeks to make. Specifically, since, as emphasized by Fernández et al. (2020), life satisfaction is a significant predictor of subjective well-being, this study aims to determine the extent to which extent the four dimensions of cultural intelligence may affect the subjective well-being of Chinese students enrolled at Thai universities. Subjective well-being in this study refers to students' overall emotional and cognitive evaluation of the quality of life, based on their individual feelings during their studies in Thailand (Diener, 2000).

Naturally, discussing the subjective well-being of Chinese students and how cultural intelligence can impact it requires understanding the cultural differences they face when moving to Thailand to study. One way to explore the dissimilarities between the two cultures is to look at Hofstede's (1991) cultural dimensions. As we will see in the next several paragraphs, they include power distance (which can be high or low), individualism versus collectivism, masculinity versus femininity, uncertainty avoidance (high or low), and long-versus short-term orientation. Although these constructs highlight similarities between the two cultures, they also bring to light significant cultural differences, which require cultural intelligence to be overcome. Hofstede's (2020) indexes will be especially helpful to identify the cultural differences students face. Next, attention will turn to the discussion of the various components of cultural intelligence and then gender as variables potentially affecting students' subjective well-being. Suggestions on how Chinese students' wellness may be improved will then be offered. Since few articles have focused on the four-dimension of cultural intelligence in the context of Chinese students in Thailand, this study may well prove helpful for the many stakeholders involved in international higher education.

## **2. Literature Review**

### ***- Hofstede's Cultural Dimensions***

Hofstede's (1984) seminal research on cross-cultural management has helped identify important dimensions of national character (Moran, Harris, & Moran, 2011). They include (i) power distance, (ii) individualism, (iii) masculinity, and (iv) uncertainty avoidance. In a subsequent study, Franke, Hofstede, and Bond (1991) added a fifth cultural dimension, (v) long-term orientation. While there have been criticisms of Hofstede's dimensions, such as being overtly simplified, empirically driven, and based only on IBM employees (Sondergaard, 1994; Singelis et al., 1995; Schwartz, 2004), the dimensions make sense to analyze contrasts

across cultures. Each dimension will be briefly described as they will be used in this study in the context of China and Thailand.

(i) *Power Distance* – indicates the extent to which a society accepts that power in organizations and institutions is distributed unequally. In other words, it measures the way cultures are accustomed to deal with inequalities among people (Seng & Lim, 2004). For instance, high power distance is related to employees' fear to express disagreement to their managers whereas low power distance is related to a consultative relationship between superiors and subordinates.

(ii) *Individualism* – refers to a social framework in which people are expected to take care of themselves and their immediate family. Its opposite is collectivism, which occurs when people distinguish between in-groups and out-groups (Hofstede, 1984). The in-group is expected to take care of all those belonging to it and in exchange for looking after them, they owe it absolute loyalty (Moran et al., 2011).

(iii) *Masculinity* – expresses the extent to which the dominant values in society are assertiveness, money and material things rather than caring for others, people, or one's quality of life (Moran et al., 2011). This gender dimension is learnt. Its opposite is femininity. Feminine characteristics include good working relationships, cooperation, and employment security. In feminine societies, gender roles are often merged or overlap for the sexes (Seng & Lim, 2004).

(iv) *Uncertainty Avoidance* – indicates the extent to which a society feels threatened by uncertain or ambiguous situations (Hofstede, 1984). It is a measure of how members of a particular culture are programmed "to feel either uncomfortable or comfortable in unstructured situations" (Hofstede & Bond, 1988, p. 11). Countries with low uncertainty avoidance may choose strategies that offer high rewards and those with high uncertainty avoidance strategies that award low rewards but have high probability of success (Seng & Lim, 2004).

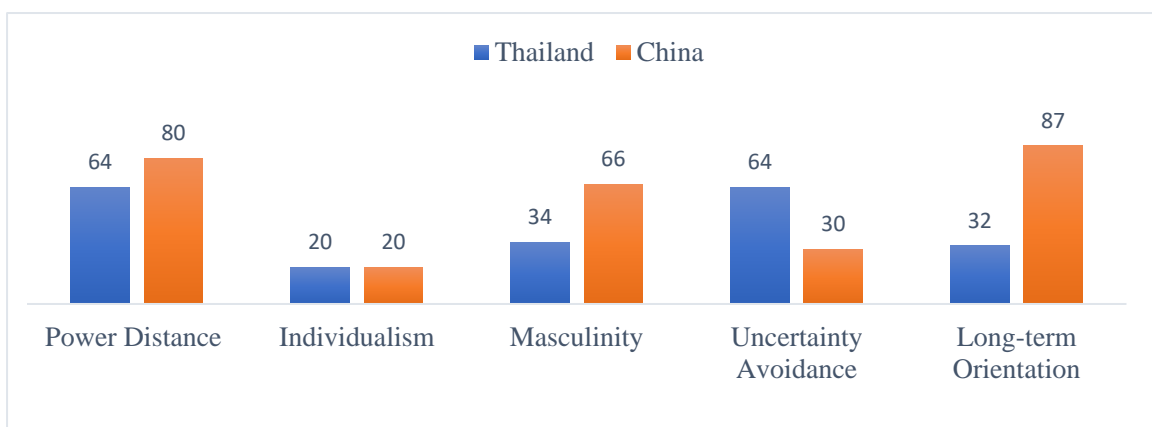
(v) *Long-Term Orientation* – relates to long-term versus short-term perseverance and persistent. It captures the extent to which a culture exhibits pragmatic planning for the future versus live-for-the-moment short perspective (Seng & Lim, 2004). Short-term orientation includes small savings, and social pressure to keep up with the Joneses (even though this may mean overspending) to name a few. Long-term orientation, on the other hand, include values such as thrift, large savings and the adaptation of tradition to modern context (Seng & Lim, 2004).

As constructs ascribed to national cultures, these five dimensions are especially helpful to investigate cultural differences between China and Thailand. Chart 1 shows the five dimensions as applied to China and Thailand as determined by Hofstede (2020). As can be seen in the Chart, there are similarities between the two countries as well as significant differences. Unsurprisingly, on the individualism-collectivism index, both countries score low and have the same score (20). The index for this dimension is based on three aspects: the amount of time

available from the job for personal-family development; freedom to adopt individual approaches to the job; and challenge from the job contributing to a sense of personal accomplishment. Clearly, in both nations, the “we” group is the source of identity, protection, loyalty and dependent relationship. There is also high regard for social harmony and conflict is minimized (Moran et al., 2011).

The other index with almost similar scores is the power distance dimension (Thailand, 64; China, 80), which, as we just saw, describes the emotional distance that separates superiors from subordinates. There is high power distance in both countries. Both Thai and Chinese cultures stress stratification and hierarchy and parent-children unilateral obedience. However, the emphasis on “the superiors’ autocratic style/paternalistic decision-making style and subordinates’ preference for the superiors’ autocratic style” is generally higher in China than in Thailand, whose culture display more feminine characteristics (Seng & Lim, 2004, p. 23). Indeed, with a score of 66 on the masculinity index (versus 34 for Thailand), it is clear that Chinese culture expects men to be assertive, ambitious, and tough and managers to be decisive and assertive unlike in Thailand where, as explained above, the dominant value is caring for others.

Meanwhile, as indicated by the scores on the long-term orientation index (Thailand, 32; China, 87), there is a significant difference between Chinese and Thai cultures with regard to long-term orientations. While both countries have long-term (as opposed to short-term) orientations, the willingness to subordinate oneself for a purpose, concern with virtue, and respect for tradition remain stronger in China. In other words, there is a stronger focus on long-term development and commitment in China than in Thailand, where people tend to prefer immediate compensation and feedback (Hofstede, 1991).



**Chart 1:** Hofstede’s Dimensions for China and Thailand (Hofstede Insights, 2020)

There is also a marked cultural difference on the uncertainty avoidance index as the degree for tolerance of uncertainty varies greatly across the two cultures. The index, which shows three factors, job stress, strong rule orientation, and intended longevity, reflects Thailand's higher uncertainty avoidance as compared to China. While uncertainty and ambiguity are considered threatening in both countries, Thai culture feels more threatened by unknown or uncertain situations than Chinese culture (Seng & Lim, 2004).

### - *Cultural Intelligence (CQ)*

As noted in the introduction, cultural intelligence (CQ) represents a person's ability to adapt across cultures (Ang, Van Dyne, & Koh, 2006). Cultural intelligence may also be defined as one's understanding and adaptability for cross-culture (Ang & Van Dyne, 2008). Cultural intelligence has four main components: Behavioral CQ, Motivational CQ, Cognitive CQ, and Metacognitive CQ (Earley & Ang, 2003).

- *Behavioral CQ* – applies to situations where an individual is able to adopt specific behaviors as a result of strong verbal and non-verbal behavior ability (Ang & Van Dyne, 2008). For example, Chinese students with high CQ behavioral ability can effectively use pure language (such as words, intonation) or non-verbal communication (such as gestures and facial expressions) to suit local cultural habits and achieve effective cross-cultural interaction (Earley & Peterson (2004).

- *Motivational CQ* – pertains to an individual's ability to direct his/her attention or interests and energy toward facing a new culture (Ang & Van Dyne, 2008). Earley & Peterson (2004) found that individuals with strong motivational CQ have a great sense of their own efficacy and/or intelligence to recognize and modify their comportment to a new culture. They gave the example of Chinese students with higher motivational CQ who through steady efforts to enhance their cultural knowledge, develop much confidence in adapting to different cultural environments. Students who lack motivation, however, are easily discouraged by the challenges of grasping various and subtle cultural differences.

- *Cognitive CQ* – refers to an individual's ability to leverage his/her prior cultural knowledge when finding him/herself in a new environment. (Ang & Van Dyne, 2008). Ang et al. (2006) determined that expatriates with a high cognitive CQ can leverage their convergent learning style by implementing previous knowledge in the new environment in which they find themselves. They defined cognitive CQ as the ability to bring to bear personal experiences/knowledge and normative cultural knowledge when having to deal with a different cultural environment.

- *Metacognitive CQ* – is generally used in reference to a person who can easily integrate local cultural knowledge and draw from previous personal knowledge. Individuals with a high metacognitive CQ tend to effectively process and integrate information. An individual with high metacognitive abilities can effectively integrate cultural knowledge when facing different personal situations to interact with people from different cultural backgrounds (Ang & Van

Dyne, 2008). Thus in this study, student culturally intelligent will therefore refer to Chinese students with higher cognitive abilities and specific cultural knowledge based in part on their study of or life experience in Thailand. As such, they are well equipped to fit in a cross-cultural environment and generally find themselves at ease in it (Jyoti & Kour, 2015). According to Ramalu et al. (2012), individuals with higher cultural intelligence have all it takes to adapt better to a new cultural setting. They have determined that meta-cognitive CQ in particular positively relates to general and interaction adaptation. Rujiprak (2016) found that culturally-adjusted and culturally-linked individuals are generally more satisfied with their current lives situation as international students; hence the proposal in that higher cultural intelligence engenders higher levels of subjective wellness.

### **- Subjective Well-Being (SWB)**

The concept of subjective well-being was first developed by Wilson (1967), who defined it as the state of those who score high levels of "happiness." According to Diener (2000), subjective well-being simply means leading a good life. Subjective well-being shows how people evaluate their lives (Michalos, 1985). A significant predictor of subjective well-being is life satisfaction. It is a subjective, long-term, and comprehensive personal feeling (Shen & Chen, 2017). Thus, in this study subjective well-being refers to Chinese students' overall emotional and cognitive evaluation of the quality of life, based on their individual feelings during their studies in Thailand (Diener, 2000). Based on the variable discussed so far, the following hypothesis can be formulated;

- H1:** *Behavioral cultural intelligence positively affects the subjective well-being of international Chinese students' enrolled at Thai Universities.*
- H2:** *Motivational cultural intelligence positively affects the subjective well-being of international Chinese students' enrolled at Thai Universities.*
- H3:** *Metacognitive cultural intelligence positively affects the subjective well-being of international Chinese students' enrolled at Thai Universities.*
- H4:** *Cognitive cultural intelligence positively affects the subjective well-being of international Chinese students' enrolled at Thai Universities.*

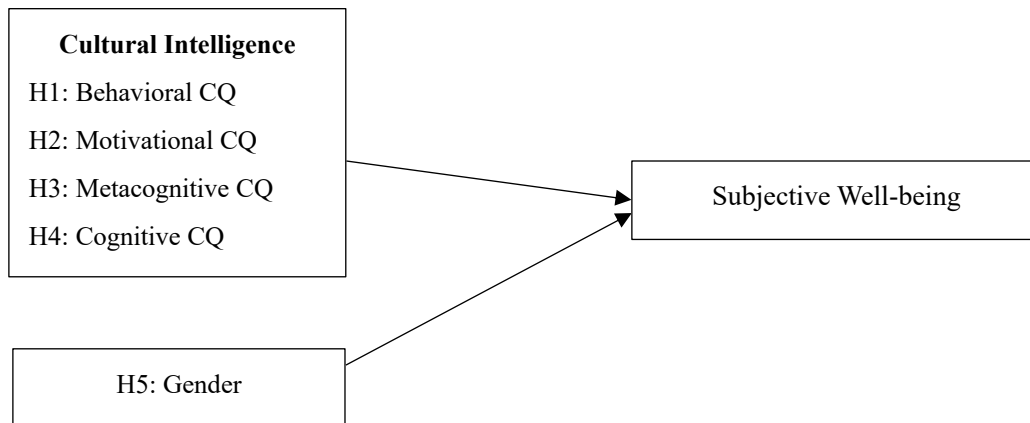
### **- Gender**

A number of papers focusing on mentally related gender issues have disclosed that there exists differences between men and women with regard to wellness and wellbeing that are gender-specific. These differences have been repeatedly investigated (e.g. Stevenson & Wolfers, 2009; Fujita et al., 1991). Although dissimilarities in levels of happiness between males and females vary from one period to another, gender can be an essential determinant of health and perception of wellbeing. According to Zuckerman, Li, and Diener (2017), men tend to experience lower levels of well-being than women. Personal wellness patterns across the world also indicate that women typically have higher scores on wellbeing than men (Graham & Chattopadhyay, 2012). In this study, gender refers to differences between males and females in

terms of their psychological predisposition to well-being and happiness. Accordingly, the following hypotheses can be developed:

**H5:** *Gender affects international Chinese students' subjective well-being.*

Figure 1 shows the research framework developed for this study.



**Figure 1:** Research Framework

### 3. Research Methodology

This study uses a mixed research methodology. The qualitative part involves interviews and the quantitative approach an online questionnaire distributed to 240 students.

#### - *Qualitative Approach*

Interviews were conducted using purposive sampling. Six students were interviewed. Five were Chinese students enrolled in a Bachelor's business program at a Thai university. One criteria for their qualification as interviewees was for them to have been living in Thailand for more than two years. The sixth student was a Thai student who has been enrolled in a Chinese program for more than two years. The other criteria for qualification was for the six students to be cognizant of Hofstede's (1991) cultural dimensions and have completed a course in cultural management. These unstructured interviews were based on an open-ended question asking interviewees to identify the most salient cultural dimension highlighting cultural differences between the Thai and Chinese culture.

#### - *Quantitative Approach*

Once the cultural dimensions differentiating Chinese culture from Thai culture had been identified by the 6 students, a survey questionnaire was used to collect data. 300 questionnaires were sent online to Chinese students enrolled in a Bachelor business program at a Bangkok-based Thai private university with a large community of Chinese students. 240 questionnaires were collected. 3 were rejected (incomplete data), which left 237 valid questionnaires and an

effective rate of 79 percent. Students were asked to fill in an open questionnaire based on Hofstede's (1980) theory and dimensions and relate their own experiences and real feelings. Content analysis was applied. The profile of the 237 Chinese students surveyed that emerged from the questionnaire is as follows: 61.20 percent of the participants were males (145) and 38.80 percent females (92). 43.50 percent of the students surveyed (103) were under 21 years old and 55.3 percent of them (131) between 21-24.9 years old. Three students (1.3%) were between 25 and 30 years old.

#### *- Variable Measurements*

Two scales are Cultural Intelligence Scale (CQS). This study used the 20-question cultural intelligence scale developed by Ang et al. (2014). The scale measured the following four CQ variables through statements such as for example: (i) I am conscious of the cultural knowledge I use when interacting with people; (ii) I know the legal and economic systems of the other culture; (iii) I enjoy interacting with people from different cultures; and (iv) I use pauses and silences differently in order to suit different cross-cultural situations, etc. An 8-item scale based on Diener and Suh (2000) was applied to measure the subjective well-being scale (SWBS). All constructs were measured using a 5-point Likert scale, that ranged from 1 (strongly disagree) to 5 (strongly agree).

## **4. Results**

### *- Qualitative Analysis*

This study conducted a content analysis in order to codify students' answers as shown in Table 1. Five of the participants were Chinese and one was Thai. As a complement to the questionnaire used as part of the quantitative research, all of them were asked the following question: "What is the most significant difference between Chinese and Thai cultures based on Hofstede's theory?" Table 1 summarizes their answers. Since one of the students thought that two dimensions were equally differentiating the two cultures, both dimensions are listed in the table. The answers make it clear that, given that no one single dimension is listed by all participants as the most striking difference, Chinese and Thai are different in several ways that are in keeping with Hofstede's (2020), save for individualism, which according to Hofstede's (2020) index is equally low in both countries (20/20). Regarding the latter dimension, it is only reported by one student, which can be interpreted as meaning that other students perceive Chinese and Thai people as overwhelmingly favoring the group over the individual or, to put it another way, they see the interests of the group taking precedence over the interests of the individual.

As is the case with Hofstede's (2020) index on this dimension, Chinese students see Thais as predominantly feminine and therefore as having a markedly different set of priorities in their lives. For Thai people, getting along with others, including the boss, and nurturance are generally more important than emphasis work goals (e.g. earnings, advancement) and

assertiveness. They also see major dissimilarities in terms of power distance. Such differences with regard to this dimension are consistent with the masculinity/femininity dimension in that, as noted by students, men enjoy more power than women. Since power distance is higher in China, women generally refrain from expressing their disagreements both at home and in the workplace, which is less the case in the Thai society. As students' comments attest, Chinese students see China more bent on competition than Thailand, and Chinese caring more about success and money. They also see major differences in term of orientations (long- versus short-term). This is consistent with Hofstede (2020); China score is 87 whereas that of Thailand is a low 32. It did not take much time for Chinese students to realize that the quality of life of Thai people is measured by the enjoyment of the moment.

**Table 1:** Content Analysis

| <b>Participant Profile</b>                             | <b>Dimension Identified as the Most Different</b>                        | <b>Key Comments</b>  |
|--|--|--|
| Male, 21<br>International<br>business major<br>Chinese | Masculinity & Femininity   | China is a masculine society in which men play a dominant role whereas Thailand is a feminine society, where people pay attention to the quality of life, believe that work is for leading a good life.<br><br>In male-dominated Chinese society, people focus on competition and success. Thai people on the other hand tend to pay more attention to the quality of life.  |
| Male, 23<br>International<br>business major<br>Chinese | Masculinity & Femininity   | Chinese is significantly male-dominated. Family income is mainly provided by men. Since they have a more specific economic function, they generally enjoy more advantages/privileges than women. Such gender roles not perceived in Thailand's feminine society.   |
| Female, 20<br>Art<br>design major<br>Chinese           | Long-term & Short-term<br>Orientations<br><br>Individualism/Collectivism | One big difference between long-term-oriented China and short-term-oriented Thailand is that most Thais focus on enjoying life and on saving money for the future. They live for the moment for the day is preferable for them.<br><br>Competition can be fierce in both countries but Thais nevertheless focus on group relationships. This far from being the case in China, at least on such a scale.<br><br>Thai's reliance on the group (the extended family) seems to be one of the reasons they live for the day.<br><br>They seem to believe that somebody will be there for |

|   |  |   |
|---|--|---|
|   |  | <p>them no matter what. So there is less of a drive to really push when working.</p>  |
| <p>Male, 22,<br/>International<br/>business major<br/>Chinese</p> | <p>Power Distance</p>                              | <p>Chinese parents dominate their children whereas it seems that Thai parents follow their children's interests and hobbies. In China, absolute obedience to parents (and supervisors at work) is seen as essential (higher power distance). This seems less true of Thai people, especially young ones as observed at university.</p>  |
| <p>Male, 22 Finance<br/>and accounting<br/>major<br/>Chinese</p>  | <p>Long-term &amp; Short-term<br/>Orientations</p> | <p>Chinese emphasize learning and accumulation. Most Thais, however, enjoy their leisure time. Chinese people seems to care about money more than Thai people, who are less willing to sacrifice the present for future benefits.</p> <p>Thai pays more attention to the quality of life for the moment it occurs. They generally appear not to be willing to defer the pleasure of the present for future gains (this includes studies from what I observe around me).</p>   |
| <p>Male, 21<br/>International<br/>Business<br/>Thai</p>           | <p>Power Distance</p>                              | <p>My understanding is that in China, the Communist Party runs the country and emphasize the importance of obedience. As a result, Chinese children listen to adults and juniors follow the arrangements made by the seniors. From what I can observe in Thailand, Thai people focus on both the individual and the group (collectivism) but seem to be they own master more than in China where parents dominate their children. While Thais still respect the social hierarchy and obey their peers, they seem to determine their own destiny more than Chinese do.</p> |

### - *Quantitative Analysis*

This study used SPSS 19.0 to test the questionnaire's reliability and validity with Cronbach's Alpha and Kaiser-Meyer-Olkin (KMO) values. The results show that each construct's factor loading value ranged from .567 to .854, therefore higher than the 0.40 cut-off. The CQ scale (N=6; Cronbach's Alpha=.834) and SWB scale (N=20; Cronbach's Alpha= .914) and the total items are within the .919 reliability, which exceeds Fornell & Larcker's (1981) recommended value (0.6). Meanwhile, the KMO value is .914 ( $p=.000$ , approx. Chi-Square =5015.2,  $df = 496$ ). According to Kaiser (1974), if the KMO value is between 0.8 and 1, then the analysis can be carried out.

### - *Multilevel Confirmatory Factor (MCFA) Analysis*

In assessing the convergent validity of the measurement items, this study applied a Multilevel Confirmatory Factor (MCFA) Analysis, Composite reliabilities (CR), and Composite reliabilities (CR). Table 2 summarizes the results. The table also indicates that in this study the Average

### - *Descriptive Statistics and Correlation*

Variance Extracted (AVE) exceeded the recommended value of .5. According to Fornell and Larcker (1981), when the AVE is under .5 and the composite reliability (CR) higher than .6, the structure's convergent validity is still sufficient. Since in this study, Motivational CQ's AVE is .45 and CR .851, there is therefore sufficient validity. Likewise, the factor load ranged from .567 to .854, which exceeded the Fornell & Larcker's (1981) recommended value of .5.

Table 3 shows the scores which the independent variables in the regression analysis received. Motivational CQ ( $\beta=.174$ ,  $p < .05$ ) and metacognitive CQ ( $\beta =.217$ ,  $p < .05$ ) were positively related to subjective well-being. Thus, H2 (Motivational CQ positively affects international Chinese students' SWB at Thai universities) and H3 (Metacognitive CQ positively affects international Chinese students' SWB at Thai universities) were accepted. Metacognitive CQ has the strongest effects on subjective well-being, followed by motivational CQ. However, cognitive CQ and behavioral CQ are not related to subjective well-being. Thus, H1 (Behavioral CQ positively affects international Chinese students' subjective well-being at Thai Universities) and H4 (Cognitive CQ positively affects international Chinese students' subjective well-being at Thai universities) were rejected.

**Table 2:** Confirmatory Factor (MCFA) Analysis

| Factor<br>(Manifest<br>Indicators) | Question<br>/item | Measurement |      |      |   |      | SMC  | (1-<br>SMC) | CR   | AVE  |
|------------------------------------|-------------------|-------------|------|------|---|------|------|-------------|------|------|
|                                    |                   | 1           | 2    | 3    | 4 | 5    |      |             |      |      |
| Subjective<br>Well-Being<br>(SWB)  | SWB1              |             |      | .661 |   |      | .437 | .563        | .860 | .509 |
|                                    | SWB 3             |             |      | .760 |   |      | .578 | .422        |      |      |
|                                    | SWB 4             |             |      | .608 |   |      | .370 | .630        |      |      |
|                                    | SWB 5             |             |      | .764 |   |      | .584 | .416        |      |      |
|                                    | SWB 6             |             |      | .745 |   |      | .555 | .445        |      |      |
|                                    | SWB 7             |             |      | .726 |   |      | .527 | .473        |      |      |
| Meta-Cognition<br>CQ (M-C)         | M-C 1             | .749        |      |      |   |      | .561 | .439        | .852 | .592 |
|                                    | M-C 2             | .831        |      |      |   |      | .691 | .309        |      |      |
|                                    | M-C 3             | .780        |      |      |   |      | .608 | .392        |      |      |
|                                    | M-C 4             | .712        |      |      |   |      | .507 | .493        |      |      |
| Cognition CQ<br>(C-C)              | C-C1              |             |      | .733 |   |      | .537 | .463        | .836 | .508 |
|                                    | C-C3              |             |      | .579 |   |      | .335 | .665        |      |      |
|                                    | C-C4              |             |      | .799 |   |      | .638 | .362        |      |      |
|                                    | C-C5              |             |      | .773 |   |      | .598 | .402        |      |      |
|                                    | C-C6              |             |      | .658 |   |      | .433 | .567        |      |      |
| Motivational<br>CQ (Mo)            | Mo1               |             |      |      |   | .726 | .527 | .473        | .805 | .455 |
|                                    | Mo2               |             |      |      |   | .744 | .554 | .446        |      |      |
|                                    | Mo3               |             |      |      |   | .567 | .321 | .679        |      |      |
|                                    | Mo4               |             |      |      |   | .699 | .489 | .511        |      |      |
|                                    | Mo5               |             |      |      |   | .621 | .386 | .614        |      |      |
| Behavioral CQ<br>(B)               | B1                |             | .664 |      |   |      | .441 | .559        | .866 | .566 |
|                                    | B2                |             | .854 |      |   |      | .729 | .271        |      |      |
|                                    | B3                |             | .782 |      |   |      | .612 | .388        |      |      |
|                                    | B4                |             | .719 |      |   |      | .517 | .483        |      |      |
|                                    | B5                |             | .727 |      |   |      | .529 | .471        |      |      |

The scores of the descriptive statistics of subjective well-being were considered next. Only 1.3 percent of the participants obtained scores ranging from 1 to 2 (from 5) on subjective well-being. Scores under 3 accounted for 31.6 percent of the total, which means that 31.6 percent of the students surveyed frequently feel anxiety and sadness over or dissatisfaction with the quality of their lives. The SWB's mean is 3.39. Overall, a majority of Chinese students (68.4%) subjectively feel positive about/happy with the quality of their lives in Thailand. Meanwhile, 10.5 percent of the participants strongly agreed to life satisfaction. The R square was relatively

low but nevertheless reached a significant level at .001, which means that other factors affecting subjective well-being were excluded in this study. The CQ factors in this study significantly affect subjective well-being.

**Table 3:** Regression Analysis of the Prediction of SWB

| <i>Dependents</i>        | <i>Subjective Well-Being</i> |                           |        |             |
|--------------------------|------------------------------|---------------------------|--------|-------------|
|                          | $\beta$<br>(Unstandardized)  | $\beta$<br>(Standardized) | T      | Sig         |
| <i>Independents</i>      |                              |                           |        |             |
| (Constant)               | 2.002                        |                           | 12.523 | .000        |
| <i>Behavioral CQ</i>     | .068                         | .112                      | 1.525  | .129        |
| <i>Motivational CQ</i>   | .101                         | <b>.174*</b>              | 2.209  | <b>.028</b> |
| <i>Meta-cognitive CQ</i> | .131                         | <b>.217**</b>             | 2.966  | <b>.003</b> |
| <i>Cognitive CQ</i>      | .030                         | .054                      | .717   | .474        |
| R <sup>2</sup>           |                              | .200                      |        |             |
| Adj. R <sup>2</sup>      |                              | .186                      |        |             |
| F                        |                              | 14.511***                 |        |             |

Note. + p < 0.10; \* p < .05; \*\* p < 0.01; \*\*\* p < 0.001.

*- Analysis of Variance: T-test and One-way ANOVA*

The t-test is a method to determine whether two populations are statistically different, such as, for example, in terms gender, whereas a One-Way ANOVA analysis of variances determines that two or more populations are statistically different. This study applied One-Way ANOVA to analyze age and found that P = .491 > .05 and F = .715, thus indicating that different ages will not affect subjective well-being. Using an independent sample T-test to analyze gender revealed that two-tailed P = .62 > .05, F = .165 (P = .685 > .05), t = -.497, df = 130, a clear indication that there is no difference in subjective well-being between males and females. As a result, as Table 4 indicates, H5 (Gender affects international Chinese students' subjective well-being) is rejected.

**Table 4:** T-test (Gender and SWB)

|                 | t     | df  | Sig<br>(2-tailed) | Mean<br>Difference | Result    |
|-----------------|-------|-----|-------------------|--------------------|-----------|
| Gender →<br>SWB | -.497 | 130 | .620              | -.06130            | Rejected. |

## 5. Discussion and Conclusion

This study first identified the main cultural intelligence factors affecting international Chinese students and in light of these constructs proceeded to find out what specific cultural differences Chinese students pursuing their studies in Thailand encounter. Three dimensions, as defined by Hofstede (1980), power distance, masculinity/femininity, and long- versus short-term orientations, were reported by the students interviewed to be the main differences between the Thai and Chinese culture. Chinese care more about success and money and tend to focus more on long-term goals whereas Thai people pay more attention to the quality of life, emphasize humility and equality, and focus on the present (have a “seize the day” attitude). This study suggests that in some ways, Chinese studying at Thai universities may first experience a ‘cultural shock’, hence the importance of cultural intelligence.

Moreover, the survey indicated that most participants scored high on subjective wellbeing (68.4%). However, it also revealed that 31.6 percent of them often have negative emotions studying in Thailand. Such emotions frequently cause them to feel disliked or unworthy and reduce their self-confidence, self-esteem, and overall life satisfaction. If recurring frequently, they also may end up adversely affecting the quality of their studies and lead to damaging misperceptions of Thai culture. Therefore, universities should clearly explain to Chinese students the main cultural differences and for those experiencing negative feeling, consider ways to reduce the level of such emotions.

Regarding cultural intelligence, this study has confirmed that metacognition CQ and motivational CQ are essential predictors of students' subjective wellness, which correlates with a number of previous studies on international students. For instance, Yang and Chang (2017), who focused on foreign students in Taiwan, determined that these two CQ sub-components were highly predictive of those students' subjective well-being. With 31.60 percent of the Chinese students surveyed feeling anxiety, melancholy, or dissatisfaction with their life qualities, both CQs could play a critical role toward these students' cultural adaptation hence the necessity to enhance the metacognition and motivational CQs power of adaptability. In addition, this study determined that gender had no significant impact on subjective well-being. Male and female students do not experience significant life satisfaction differences in the course of their studies in Thailand.

This finding is consistent with previous research (e.g. Kahneman & Krueger, 2006; Clemente & Sauer, 1976), which all pointed out that there is no significant gender difference with regard to life satisfaction. The inference is that the relationship between gender and subjective well-being by other factors. University Counseling Centers should therefore strive to promote students' subjective well-being by considering various aspects of students' backgrounds, not including gender, which is neutral. This study has clearly proved the correlation between subjective well-being with metacognition and motivational CQ.

Since, as determined by Earley and Ang (2003), it is possible to cultivate the CQ a person, the following three suggestions can be made:

Firstly, since we now know that that higher metacognitive CQ enables an individual to use their cultural understanding to strategize his/her action (Yang & Chang, 2017), the metacognitive cultural intelligence of Chinese students enrolled at Thai institutions of higher learning needs to be enhanced. As Gregory and Osmonbekov (2019) argued, when companies empower their employees to be assigned abroad with metacognitive cultural intelligence, this mediates the relationship between living abroad and employees' mental health. Ott and Michailova (2018) determined that high metacognitive CQ will nurture better intercultural judgment and increase decision-making effectiveness. Thus, Thai university programs should offer a cultural course in the first year that is designed to develop students' ability to integrate local cultural knowledge and information while living and studying in Thailand and to interact with people from a different cultural background.

Secondly, to enhance motivational CQ among Chinese students, university teachers and department managers should regularly organize activities that contribute to developing foreign students' desire to understand Thai culture. Recall from above that motivational cultural intelligence refers to an individual's ability to direct his/her attention or interests and energy toward facing a new culture. Activities should be diverse and promote confidence in one's ability to adapt one's comportment to a new culture.

Lastly, Thai universities should set up an evaluation system to determine the level of cultural intelligence of students prior to their departure abroad. Depending on the score obtained, they should then arrange for students to take a course. They should also provide counseling and consistent support to students with the lowest CQ scores. Such steps will improve subjective adaption while abroad. They will also generate a higher interest in Thai culture, thereby enhancing those students' motivational and meta-cognition CQ, thus improving their well-being.

#### *- Study Limitations and Future Research*

First, this study is limited in terms of the geographic scope of the participants; Chinese students enrolled at one Bangkok-based Thai university. Further research could be extended to several universities in Bangkok and in the provinces in order to obtain a more comprehensive image of the extent of the issues discussed in this study. Second, this study, which casts light on the complexity of subjective well-being and international students' cultural intelligence, underscores the need for more empirical research in this area as there are currently few well-documented relationship between cultural intelligence and subjective well-being among Chinese students in Thailand. Third, if possible, future research should use multiple sources of data for measurements, such as for example, in-depth interviews.

**References**

- Ang S., & Van Dyne L. (2008). *Handbook of cultural intelligence: Theory, measurement, and applications* (1<sup>st</sup> ed.). New York: Routledge.
- Ang, S., Van Dyne, L., Koh, C., & Ng, K. Y. (2014). The Measurement of Cultural Intelligence. Paper presented at the Annual Meeting of the Academy of Management, Symposium on Cultural Intelligence in the 21st Century.
- Ang, S., Van Dyne, L., & Koh, C. (2006). Personality correlates the four-factor model of cultural intelligence. *Group & Organization Management*, 31(1), 100-123.
- Center for China and Globalization (2016). *Annual report on the development of Chinese studying abroad No.5*. China: Social Science Academic Press. [in Chinese]
- Center for China and Globalization (2017). *Annual report on the development of Chinese studying abroad No.6*. China: Social Science Academic Press. [in Chinese]
- Clemente, F., & Sauer, W. J. (1976). Life satisfaction in the United States. *Social Forces*, 54(3), 621-631.
- Diener, E. (2000). Subjective well-being: The science of happiness and proposal for a national index. *American Psychologist*, 55(1)34-43.
- Diener, E., & Suh, E. M. (2000). *Measuring subjective well-being to compare the quality of life of cultures: Culture and subjective well-being*. Cambridge, MA: MIT Press.
- Earley, P. C., & Ang, S. (2003). *Cultural intelligence: An analysis*. Stanford University Press.
- Earley, P. C., & Peterson, R. S. (2004). The elusive cultural chameleon: Cultural intelligence as a new approach to intercultural training for the global manager. *Academy of Management Learning & Education*, 3(1), 100-115.
- Fernández, M. E., Van Damme, L., Daset, L., & Vanderplasschen, W. (2020). Predictors of domain-specific aspects of subjective well-being among school going adolescents in Uruguay. *Avances en Psicología Latinoamericana*, 38(1), 85-99.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, 39-50.
- Franke, R. H., Hofstede, G., & Bond, M. H. (1991). Cultural roots of economic performance: A research note. *Strategic Management Journal*, 12, 165-173.
- Fujita, F., Diener, E., & Sandvik, E. (1991). Gender differences in negative affect and well-being: The case for emotional intensity. *Journal of Personality and Social Psychology*, 61(3), 427.
- Graham, C., & Chattopadhyay, S. (2012). *Gender and well-being around the world*. Washington, DC: Brookings Institution.
- Gregory, B., & Osmonbekov, T. (2019). Leader–member exchange and employee health: An exploration of explanatory mechanisms. *Leadership and Organization Development Journal*. 40(6), 699-711.
- Hofstede, G. (2020). Insights: Country Comparison. Retrieved January 28, 2021, from

- Hofstede Insights: <https://www.hofstede-insights.com/country-comparison/china,thailand/>
- Hofstede, G. (1991). *Cultures and organizations: Software of the mind*. London: McGraw-Hill.
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage Publications.
- Hofstede, G., & Bond, M. H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, 16(4), 4-21.
- Jyoti, J., & Kour, S. (2017). Factors affecting cultural intelligence and its impact on job performance: Role of cross-cultural adjustment, experience and perceived social support. *Personnel Review*, 46(4).
- Kahneman, D., & Krueger, A. B. (2006). Developments in the measurement of subjective well-being. *Journal of Economic Perspectives*, 20(1), 3-24.
- Kaiser. (1974). An index of factorial simplicity. *Psychometrika*, 39, 31-36.
- Lee, L.-Y., & Sukoco, B. M. (2010). The effects of cultural intelligence on expatriate performance: The moderating effects of international experience. *The International Journal of Human Resource Management*, 21(7), 963-981.
- Michalos, A. C. (1985). Multiple discrepancies theory (MDT). *Social Indicators Research*, 16, 347-414
- Moran, R. T., Harris, P. R., & Moran, S. V. (2011). *Managing cultural differences*. Burlington, Mass: Elsevier.
- National Bureau of Statistics of China. (2020). Guide to Foreign Investment Cooperation Countries (Thailand). National Bureau of Statistics of China. [in Chinese]. Retrieved January 10, 2021, from <http://www.mofcom.gov.cn/dl/gbdqzn/upload/taiguo.pdf>
- Ott, D. L., & Michailova, S. (2018). Cultural intelligence: A review and new research avenues. *International Journal of Management Reviews*, 20(1), 99-119.
- Rujiprak, V. (2016). Cultural and psychological adjustment of international students in Thailand. *The Journal of Behavioral Science*, 11(2), 127-142.
- Ramalu, S., Rose, R. C., Kumar, N., & Uli, J. (2012). Cultural intelligence and expatriate performance in global assignment: The mediating role of adjustment. *International Journal of Business and Society*, 13(1), 19-32.
- Ramalu, S., Wei, C. C., & Rose, R. C. (2011). The effect of cultural intelligence on cross-cultural adjustment and job performance amongst expatriates in Malaysia. *International Journal of Business and Social Science*, 2(9), 59-71.
- Ronen, S. S., & Oded, S. (1985). Clustering countries on attitudinal dimensions: A review and synthesis. *The Academy of Management Review*, 10(3), 435-454.
- Schwartz, S. (2004). *Beyond individualism/collectivism: New cultural dimensions of values*.

- Thousands Oaks, CA: Sage.
- Seng T. J., & Lim E. NK (2004). *Strategies for effective cross-cultural negotiations*. Singapore, McGrawHill.
- Shen, S. H., & Chen I. H. (2017). A study on the relationship between cross-cultural adaptation and psychological well-being of Chinese students in Thailand. *Education & Teaching Forum Periodicals Agency, 19*, 82-86. [in Chinese]
- Singelis, T. M., Triandis, H. C., Bhawuk, D. P. S., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-Cultural Research: The Journal of Comparative Social Science, 29*(3), 240-75.
- Sondergaard, M. (1994). Hofstede's consequences: A study of reviews, citations, and replications. *Organization Studies, 15*(30), 447-56.
- Stevenson, B., & Wolfers, J. (2009). The Paradox of Declining Female Happiness. National Bureau of Economic Research. Working Paper 14969. Retrieved November 9, 2020, from [https://www.nber.org/system/files/working\\_papers/w14969/w14969.pdf](https://www.nber.org/system/files/working_papers/w14969/w14969.pdf)
- Voice of America (2019, January 17). Thai universities tap into rising Chinese demand. Retrieved December 4, 2020, from <https://www.voanews.com/east-asia/thai-universities-tap-rising-chinese-demand>
- Wilson, W. R. (1967). Correlates of avowed happiness. *Psychological Bulletin, 67*(4), 294-306.
- Yang, T., & Chang, W. (2017). The relationship between cultural intelligence and psychological well-being with the moderating effects of mindfulness: A study of international students in Taiwan. *European Journal of Multidisciplinary Studies, 5*(1), 384-391.
- Zuckerman, M., Li, C., & Diener, E. F. (2017). Societal conditions and the gender difference in well-being: Testing a three-stage model. *Personality and Social Psychology Bulletin, 43*(3), 329-336.

# “Most Wanted Maid”: The Route to the Right Product Strategy for the Domestic Worker Business in Thailand

**Kaniya Nantamontry**

A DBA Student, Interactive Online DBA Program, LIGS University, Hawaii, USA.

kaniya.mobile@gmail.com

## Abstract

When recruiting domestic workers, either at home or abroad, most domestic worker companies generally focus on service strategy and overlook product strategy, yet a key component of the 4Ps marketing mix. The need for these firms to articulate a coherent product strategy is at the core of this qualitative research study. Its aim is to determine what qualifications domestic workers should possess and define a “product” strategy accordingly. Data was collected from the author’s observations and a focus group, who consisted of representatives of the various categories of employers of domestic workers, i.e., those with different preferences in terms of gender and nationality. All are clients of recruiting companies to which they turn when they need domestic workers. Findings indicate that the qualifications of an ideal domestic worker can be grouped into four categories; Ability, Appearance, Attribute, and Background. Moreover, a “product” strategy should focus on two specific actions, recruiting and training domestic employees to meet their clients’ criteria. It was found, however, that there was no magic way for an ideal domestic worker to be “produced”.

**Keywords:** Product Strategy, Domestic Worker, Qualifications, Recruitment, Training

## 1. Introduction

The domestic worker business in Thailand has been expanding in the last decade as more companies are entering the field. Acting as intermediaries between domestic workers, Thai or foreign, and their potential employers (households) and helping them make their way through the complex legislation regulating their hiring, most notably overseas helpers, these companies essentially focus on recruiting domestic workers who fit the profiles sought by the families in need of domestic help. Many of these companies are new entries in a market that has been growing as two-income families have become the norm, leaving their children and, in many cases, their elderly parents in the care of domestic workers (nuclear families are slowly replacing extended families). As parents are busy pursuing their careers and often working long hours away from home, much of the daily running of their household thus rests on domestic helpers; hence the need to recruit those with the ‘right’ qualifications. This raises among other issues the question of what the right qualifications are or to put it another way, what skills employers expect their domestic employees to have.

This paper seeks to address this question, which is of great import to recruiting agencies as they strive to meet the specific needs of their clients. It takes the view that these companies have yet to focus on the Marketing Mix and argues that even though product strategy primarily applies to product, its use can be extended to the recruitment of domestic workers (Acutt, 2019). Seen from this perspective, the issue then becomes ‘what kind of product do householders seek?’ and can therefore be answered using part of the marketing mix approach (Kotler, 1967). While many domestic worker companies are focusing on improving their services, such as for

example, creating a fast-speed recruiting service or developing an efficient screening process, they should not overlook the importance of product development, which in this case thus refers to the qualifications domestic workers should possess when they are placed in the homes of their employers. This is another way for them to provide value to their clients.

Specifically, this study seeks to answer the following questions: What qualifications should an ideal domestic worker possess? Which ones are absolutely critical? How can such qualified workers be “produced”? Research is conducted through a focus group discussion consisting of selected customers of recruitment agencies who are representative of the various categories of employers of domestic workers, i.e., those with different preferences in terms of gender and nationality. All are clients of recruiting companies to which they turn when they need domestic workers.

## 2. Theoretical Background

### - *Marketing Mix*

Kotler (1967), who is regarded as the ‘father’ of modern marketing, has long principled the so-called “Marketing Mix”. Initially, it comprised the following four pillars, product, price, place, and promotion, which are known as the “4Ps”. In the 1990s, the four Ps were adapted and became the four Cs in order to place less focus on the business and more on the customer (Lauterborn, 1990). The 4Cs adapted from the 4Ps include consumers, costs, convenience, and communication (Shapiro, 2001). Additional Ps elements emerged in the latter era. They are process, people, partner, payment, people evidence, and packaging (Möller, 2006). The Marketing mix is crucial for any businesses because it allows them to make the right marketing decision and execute the effective marketing plan to gear the business to the right direction (Hakansson, & Waluszewski, 2005). It is the kickoff key to any marketing plans. This research focuses on one pillar, product. Product or service is the starter for every business. Offering the right product or service to target customers is the first important thing the business needs to address, before considering anything else. The process of seeking the right product is known as “Product Strategy” (Kotler, & Keller, 2012).

### - *Product Strategy*

Product strategy is the backbone of product design (Rayport & Sviokla, 1994). It tells the full story of the product a team is building; who will use it and why they will use it. It also defines the course of action that an organization must complete to develop a product, and keeps everyone involved in product development on track (Babich, 2020). Product strategy is where the product development team conducts the study to seek for the right product to sell to target customers. It is where the company spends most investment herewith. Without the right product to sell, your company will not have the revenue to grow and will not sustain in the future. Later on, when the business finalized the product to sell and service to offer, the next step is to consider “Product Marketing”.

### - *Product Marketing*

Product marketing defines the positioning, value proposition, and messaging of a product (Harrell & Frazier, 1999). These constructs educate internal salespeople and external customers and create tools to ensure that they understand the product that is being brought to market (Choo, 2020). In short, the task of the product marketing team is to communicate product message to target customers. Once the product is finalized by the product development team, it needs to be marketed effectively by product marketing team (Belch, 2001). This means that the people on that team need to work on how to effectively communicate the product feature to target customers via the right communication channels and with the right communication tools in order to create needs among them and in the end stimulate purchase. It is also important to note that with the exponential rise of e-commerce the marketing mix concept is bound to

evolve and include new constructs (Jackson & Ahuja, 2016). As we saw earlier, this research aims to study the domestic worker sector in Thailand and its product strategy. Based on the above, this means that this about the right product to sell, or, in other words, how to come up with the most qualified domestic workers capable of performing effectively with employers. Unlike some businesses where the product development team plays a key role, this business does not require a product R&D team. What needs to be done is to understand thoroughly employers' insights as to what the qualifications of an ideal domestic worker are and then try to find the right candidates with such qualifications.

### 3. Methodology

To effectively craft a product strategy, some major concerns need to be discussed before first. Bhasin (2021) has conclusively summarized the 7 steps of the product strategy development process that are essential. They include:

1. *Idea Generation*. This is where all the ideas are thrown in whether it is practical or not. The limitless imagination is needed in this first step.
2. *Idea Screening*. This step is where all the ideas are filtered. At last, all the impossible ideas are left out and the possible ones are kept for the further steps.
3. *Concept Development and Testing*. This step is to bring together all the filtered ideas to create the product concept. The concept will then be tested with target customers.
4. *Marketing Strategy and Development*. Once the product concept is done testing, the marketing strategy to market this new product will take place.
5. *Product Development*. This step is to bring together all the intangible product ideas that completely tested to create the tangible product prototype.
6. *Test Marketing*. This step is to test the product prototype with target customers in order to be certain that the company has developed the right product to the right market.
7. *Commercialization*. This is the last step of product development process. It simply refers to advertising and public relations.

This research, however, only focuses on the first two steps, idea generation and idea screening. It is the author's view that they are the sole steps that are applicable to the context of this study since in fact, as emphasized earlier, the "products" in this study are human beings. Therefore, as such, they obviously cannot be developed, the way the product development step would be applied if the issue were to develop a new product or innovate an existing one.

#### - Study Design

According to the Qualitative Research Consultant Association (QRCA), a global community of qualitative professionals that educates and advances qualitative methods, practices, and standards, it is preferable to use a qualitative methodology when a new product concept is to be developed and in need of in-depth understanding about customers. It is also preferable to determine how they feel toward the company and its brand, in other words, when emotions and attitudes toward something need to be studied (QRCA, 2021). Moreover, as stressed by Hammarberg, Kirkman, and de Lacy (2016), a qualitative methodology is used to answer questions about experience, meaning and perspective, most often from the standpoint of the participants. These data are usually not amenable to counting or measuring (Hammarberg et al., 2016).

In contrast, a quantitative approach is appropriate when factual data are required to answer the research question, when general or probability information is sought on opinions, attitudes, views, beliefs or preferences and when variables can be isolated and defined. It is also most appropriate when the variables can be linked to form hypothesis before data collection and when the question or problem is known, clear and unambiguous (Hammarberg et al., 2016). Since this research seeks to understand what an ideal domestic worker would be like in the

eyes of employers, the research methodology most appropriate is a therefore qualitative approach since it makes possible to obtain in-depth information from the sample. Another compelling reason to adopt such an approach in this study is that it enables the use of a focus group discussion, a tool that encourages wide debates and the expression of contradictory arguments. Indeed, this is an important tool to use in this research in order to encourage all participants to discuss as many details as possible in depth. However, it is important to note that it is only when a discussion is truly open and invites the sharing of all sorts of ideas that the focus group discussion can be expected to be effective. A qualitative methodology also allows the author's observations to be used as secondary data.

#### - *Participants*

The process of selecting participants to join in this research started with the random selection of current customers from three leading domestic worker recruitment companies in Thailand. These customers were evenly split into five major categories based on the origin of the domestic workers sought. Employers' domestic workers hiring requests indicate that 65 percent of employers prefer female non-Thai migrant workers, 20 percent prefer Thai female workers, while the remaining 15 percent prefer various types of workers (male workers, Filipino workers, etc). As a result, the research is neatly designed to select participants representative of the abovementioned groups and ensure that there are participants from each group in sensibly reasonable proportions. Based on all these considerations, 9 participants ( $n = 9$ ) were selected from five types of employers with different hiring preferences as per below:

- Four are employers who prefer to hire non-Thai female migrant workers from either Myanmar, Laos, or Cambodia. It is estimated that this category of employers represents approximately 65 percent of the total number of employers in the domestic worker market in Bangkok.
- One is an employer who prefers to hire non-Thai male migrant workers. This type of employer occupies about 5 percent of Bangkok domestic worker market.
- Two are employers who have a strong preference for *Thai female workers*. They are representative of 20 percent of the employers found in Bangkok domestic worker market.
- One employer preferably hire male Thai workers as driver, gardener, pool cleaner, etc. This type of employer represents 5 percent of total number of employers in the domestic worker market in Bangkok.
- One employer who prefers to hire English-speaking workers (mostly Filipino, both male and female). About 5 percent of the employers in Bangkok domestic worker market fall into this category.

The nine participants include seven females ( $n = 7$ ) and two males ( $n = 2$ ), a reflection of the fact that female household members generally have the final say in the selection of domestic staff except for two positions, driver and construction labor. The average age of the participants is 36, with participants' age ranging from 25 to 47. This is the most frequent age range of Thai employers as they are the ones who typically can afford to hire domestic workers for their households. Their educational background ranges from high vocational training to doctoral degrees (the average educational level is bachelor's degree).

#### - *Procedure*

The discussion was held in one session at the meeting room of one of the leading domestic worker companies. The facilitator was a qualified researcher. It started with ice-breaking statements and was followed by a casual report of their experience with domestic workers. This approach helped to create a relaxing atmosphere and encourage participants to open up. They were then asked about the qualifications they thought an ideal domestic worker should have (Q1). Many suggestions were made and a total of approximately 70 qualifications were

retained. When asked ‘why’ next (Q2), the participants came up with solid explanations. They were then asked to list the three most important qualifications and prioritize them (Q3). The last question was about how to find such qualified workers (Q4). It opened the door to much debating and provided solid and realistic analysis of the real hiring situation. The atmosphere remained relaxing and easy-going throughout. The focus group lasted for a good 120 minutes.

#### 4. Findings

Regarding Q1 about the list of qualifications that an ideal worker should have, the results were quite similar regardless of the employer group to which the participants belonged. Some of the qualifications listed, however, were repetitive and overlapping and for these reasons were eliminated. Table 1 shows all the qualifications listed by the participants.

**Table 1:** Qualifications of an Ideal Domestic Worker in Thailand

| Ability                          | Appearance                           | Attribute/Trait  | Background                |
|----------------------------------|--------------------------------------|--|---------------------------|
| Good cleaning skills             | Neat & Clean (Good personal hygiene) | Attentive to work, behave professionally   | No financial difficulties |
| Good laundry skills              | Healthy (No congenital disease)      | Caring, creative, devoted, diligent  | No religion limitations   |
| Good cooking skills              | Good personality                     | Can keep secrets, Reliable / Dependable  | No cultural limitations   |
| Good child-care skills           | Good manners                         | Separate work from personal matters  | No criminal records       |
| Good elderly care skills         | Properly dressed                     | Efficient, fast learning, flexible, frugal   |                           |
| Basic technical knowledge        | Cheerful                             | Good attitude towards employer, no trespassing on employer's privacy, , protect employer's interests |                           |
| Basic household repairing skills |                                      | Have empathy & sympathy for others   |                           |
| Basic driving skills             |                                      | Hard-working, helpful, honest, kind, loyal, maneuverable   |                           |
| Basic pet-care skills            |                                      | Tolerant, trustworthy, well-rounded, wise  |                           |
| Basic sewing skills              |                                      | Nice, Sincere, tactful, teamwork-oriented, not a complainer  |                           |
| Basic handyman skills            |                                      | Obedient, patient, polite  |                           |
| Basic grocery shopping skills    |                                      | Not addicted to the phone, not talkative, speak mellifluously  |                           |
|                                  |                                      | Punctual, responsible, self-discipline, sincere  |                           |

**Source:** Compiled by the author for this research study

As to Q2 (Which qualifications are essential), all participants came up with quite similar answers. Employer’s expectations are quite high. Even though employers realize that such an ideal domestic worker, who possesses all or even most of these qualifications, is almost surreal and hard to find, they want versatile domestic employees, who can cater to their multiple needs. These covers everything and ranges from cleaning to taking care of everyone and everything in the house. For those hiring foreign helpers, these also include some rudimentary knowledge of the Thai language.

Responses to Q3 (the three most critical qualifications domestic worker should have) reveal almost similar choices. Since finding such an ideal and perfect domestic worker is almost

impossible, the type of qualifications need to be prioritized. In other words, what should come first? Should it be skills, appearance, background, or attributes? Unsurprisingly, the top three essential qualifications were almost the same for everyone.

1. *Good working skills* come first. No matter who you are, you must be able to perform basic tasks as a domestic worker. Working skills are the most important qualifications that most employers are expecting. The top three working skills include cleaning, laundry, and cooking.
2. *Attributes* or *Traits* come second. The top three traits that employers selected are “efficient, reliable, and hard-working.”
3. *Appearance* comes last. This is the least important qualification employers are expecting from a domestic worker (except for background). The top three dimensions of appearances are “neat and clean, healthy, and good manners.”

## 5. Discussion

Question 4 (Q4) about how to find such qualified workers or even produce them is at the core of this study. We now understand what the ideal domestic worker should look like. The question remains, however, as to how to create such great ‘products’; still a big puzzle for the domestic worker recruitment business. Obviously, since the products mentioned here refer to humans, they cannot be simply produced factory style. Moreover, few, if any, possess all of the qualifications listed by employers. This quest for the perfect candidate thus comes down to two main issues: how to attract high-quality candidates and how to train them to fit the profile sought after.

### - How to Attract High-Quality Candidates

Wangyuenyong (2017) from Motive Talent Company, Thailand, has proposed a strategy for companies in this industry. Referred to as “Recruitment Marketing”, the strategy adopts a marketing methodology designed to attract candidates and have them join the domestic worker recruitment business. It starts with building the recruiting company’s brand awareness, which involves campaigns specifically targeted to get the attention of potential candidates, who will then consider whether they want to join the company. This should be done under the supervision of a seasoned marketing team. This could also be carried out by a marketing sub-team working with an HR team, who will then take the lead on the next recruiting processes; application, selection, and hiring. This first step is all the more critical as the domestic worker business in Thailand has become highly competitive industry with the arrival in the last decade of newcomers with extremely successful marketing communication strategies, along the lines described here. This means among other consequences that each domestic worker company must try to distinguish itself from competitors

Murphy (2018) suggests eight key recruitment strategies for recruitment companies that could also be suited for the domestic worker business, even though candidate qualifications differ from other fields. They include:

1. *Job Advertisement Clarity* – This requires providing all necessary details such as family members background, workplace locations, how to commute back and forth daily, etc.
2. *Campus Recruiting* – A number of schools and training centers in Thailand focus on training professional domestic workers. For talent seeking efficiency, setting up recruiting booths there would thus save time and reduce costs associated with recruiting the best talents.
3. *Flexibility* – Employer flexibility in terms of in/out time, days off, shift and so on could go a long way in attracting – and retaining – talented candidates. Not sticking to conventional work standards would also avoid dull assignments.
4. *Adding Perks* – Jobs with more special benefits would be more attractive to talented

candidates. Such perks could, for example, include annual bonus, long-service award, employee of the month announcement, and an attractive work area. They would add positivity.

5. *Organizing Competitions* – A talent-searched competition offering rewards such as money prize, could be an effective screening method that would give a chance to candidates to display their skills.
6. *Using Social Media Recruiting* – Utilizing a social media as a recruiting channel is another way to attract the best talent.
7. *Setting up Employee Referral Programs* – Candidates could be given money rewards as a motivation to refer other candidates.
8. *Shortening Hiring Time* – Recruiting companies should speed up the application process. The longer a candidate has to wait, the higher the chances he/she will not find that job attractive.

*- How to Train Candidates to Fit the Profile Sought After?*

All the qualifications listed in Table 1 can be grouped into 4 categories: Ability, Appearance, Attribute, and Background (AAAB).

1. *Ability* - Ability refers to the necessary basic working skills of a domestic worker (cleaning, doing laundry, cooking, etc). Recruiting companies could hire trainers to help candidates develop certain skills before sending them to employers. Candidates could be tested for which working skills are deficient and later to be trained.
2. *Appearance* - Appearance (personality, personal hygiene, etc) can be improved and polished with the proper training. While the basic personality training offered to the candidates may not radically change their personalities overnight, it may lead to some improvements (candidates can be trained to get rid of the body odor, dress properly, ...).
3. *Attributes* - According to Koolen (2016), attribute refers to the aspects of a person that can be trained as opposed to traits that are ingrained attributes that can or cannot be trained. While domestic worker companies could share with candidates what positive attributes are most valued by employers, attribute training could be gradually done while working with employers. Learning by doing could help develop those skills sought after.
4. *Background* - As we saw earlier, background is not one of the top three priorities of employers. This is because they realize that one's personal background cannot be trained or changed. Indeed, this is the only area where employers do not expect training by domestic worker companies. Besides, having a challenging background does not make him/her a bad person and vice versa, having a 'ideal' background does not guarantee that he/she is a good employee.

It is important to keep in mind that although the product this research study seeks to define as the ideal product to develop, this product is actually not a product but a human being. Whatever qualifications will characterize the ideal domestic worker, we have to accept the fact that some qualifications are developable and some are not by dint of being a human being. For this reason, it is most useful to separate qualifications into two categories; developable and undevelopable. So, among the developable qualifications, what are the top three most important ones an ideal domestic worker should possess? And among undevelopable qualifications, what are the top three most important qualifications an ideal domestic worker should possess? This will make product strategy development more realistic and effective. Separating qualifications along these lines will allow companies to determine which ones should be further developed and which ones cannot be nurtured.

## 5. Conclusion and Recommendations

This study sought to explore the type of qualifications employers wish domestic workers to have by using the first two steps of the product development process: idea generation and idea screening. Idea generation took place via Q1 and Q2. Interviewees' responses to Q1 enabled to establish a list of qualifications (almost 80), which were then regrouped under the AAAB acronym (Abilities, Appearances, Attributes, and Background). It was determined that the three AAA qualifications can be developed whereas the B qualification is considered not trainable. Most employers hiring domestic workers through domestic worker companies expect them to recruit prospective domestic workers with AAA qualifications and in the alternative train them, which in most case may prove to be a tall order. Responses to Q2 (the reason why such qualifications are essential) show consensus as all respondents concur on the fact that domestic workers are very important to their families. They are someone whom the family trusts to take care of everything and everyone in the household. In essence, they are practically family members as they to live under the same roof and possibly eat at the same table. Most family members have full-time jobs and desperately need someone who can clean, cook, and take care of children and elderly people who often need special assistance.

Idea screening took place via Q3 and Q4. The focus of Q3 is on the most essential qualifications in each AAAB category. These include cleaning, doing laundry, and cooking in terms of abilities; being neat, clean, healthy, and having good manners as far as appearances are concerned; and efficiency, reliability, and hard work in terms of attributes. That said, it is important to keep in mind that the term "qualification" is subjective. Each employer and each household have different standards and expectations regarding each qualification. Best skills according to one household could mean just good skills for another and bad ones for yet another. As the results indicate, background is regarded as not important. As Fiske and Malone (2013) noted, when hiring workers, employers not apply competence judgment but also warmth judgment. In other words, employers should not look for domestic workers that exhibit the right skills, those workers should also have the capacity to stir up feelings of affection and admiration as they engage with family members.

The answer to Q4 (about how to find such qualified workers or even "produce" them) is based on various primary and secondary sources of information. As noted earlier, while the term "product" may seem incongruous given that the "products" referred to as human beings, it is a useful way to address the issue of how to train/produce the "ideal" domestic worker. In many ways, choosing the right person to work with a family is similar to choosing what kind of people to be in our lives as a spouse.

Several strategies propose steps and processes for product development and could be used for "human" development, i.e., for effective recruitment, training, and marketing. By and large, they promote similar techniques, which in terms of marketing, involve employee referral programs, job vacancy advertisement, job events or talent search competitions, and social media recruiting, to name a few. One strategy that readily comes to mind is Bhasin's (2021) Product Strategy Development Process, from which this study borrowed idea generation and idea screening. While it is outside the ambit of this study to discuss the other steps it contains in detail, it should be noted that this is a cooperative process between marketing, research and development, and product development teams.

### *- Suggestions for Further Research*

While this study only focuses on steps 1 and 2 for all the reasons discussed earlier, the other steps in Bhasin's (2021) model could possibly be applied in further similar studies. Emphasis could be placed on step 4 (the marketing strategy and development) or on the last step (Step 6,

communication), two important steps in domestic worker companies' recruitment strategies. Further studies could also pick up on the findings of this research and apply them to Pichler's (2015) Effective Product Strategy, a three-step strategy designed to boost sales. While initially developed for products and services, some of its dimensions could be applied to the domestic worker business.

## References

- Acutt, M. (2019). *Marketing Mix Product Strategy*. Retrieved February 10, 2021, from <https://marketingmix.co.uk/product-strategy/>
- Babich, N. (2020, February 17). *How to Create an Efficient Product Strategy*. Retrieved March 1, 2021, from <https://www.shopify.com/partners/blog/product-strategy>
- Belch, M. A. (2001). *Advertising and promotion: An integrated marketing communication perspective* (5<sup>th</sup> ed.). New Delhi: Tata McGraw-Hill Publishing Company Ltd.
- Bhasin, H. (2021). *New Product Development – Process and 7 Stages*. Retrieved February 7, 2021, from <https://www.marketing91.com/new-product-development/>
- Choo, J. (2020, June 1). *What Is Product Marketing and Why Is It Important?* Retrieved January 10, 2021, from <https://medium.com/swlh/what-is-product-marketing-and-why-is-it-important-3033ca48a3af>
- Claessens, M. (2015, June 24). *The New Product Development Process (NPD): Obtain New Products*. Retrieved December 10, 2021, from <https://marketing-insider.eu/new-product-development-process/>
- Fiske, S. T. & Malone, C. (2013). *The human brand: How we relate to people, products, and companies*. *The European Business Review*. Retrieved November 28, 2020, from <https://www.europeanbusinessreview.com/the-human-brand-how-we-relate-to-people-products-and-companies/>
- Hakansson H., & Waluszewski, A. (2005). *Developing a new understanding of markets: Reinterpreting the 4ps*. *Journal of Business & Industrial Marketing*, 20(3), 110-117.
- Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). *Qualitative research methods: When to use them and how to judge them*. *Human Reproduction*, 31(3), 498-501.
- Harrell, G. D., & Frazier, G. L. (1999). *Marketing connecting with customer* (1<sup>st</sup> ed.). USA: Prentice Hall
- Jackson, G., & Ahuja, V. (2016). *Dawn of the digital age and the evolution of the marketing mix*. *Journal of Direct Data and Digital Marketing Practice*, 17, 170-176.
- Koolen, E. (2016, October 7). *Competencies, Attributes and Traits; What's the Difference?* Retrieved December 9, 2020, from <https://emilykoolen.com/2016/10/07/competencies-attributes-and-traits-whats-the-difference/>
- Kotler, P., & Keller, K. L. (2012). *Marketing management* (14<sup>th</sup> ed.). Pearson Education, London.
- Kotler, P. (1967). *Marketing management: Analysis, planning and control*. (15<sup>th</sup> ed.), Englewood Cliffs, NJ: Prentice-Hall.
- Lauterborn, B. (1960). *New Marketing Litany: Four P's Passed: C-Words Take Over*. *Advertising Age*, 62(41), 26.
- Möller, K. (2006). *The marketing mix revisited: Towards the 21<sup>st</sup> century marketing*. *Journal of Marketing Management*, 22(3), 439-450.
- Murphy, K. (2018, October 1). *8 Recruitment Strategies to Attract the Best Talent*. Retrieved December 2, 2020, from <https://www.talentlyft.com/en/blog/article/211/8-recruitment-strategies-to-attract-the-best-talent>
- Pichler, R. (2015). *Elements of an Effective Product Strategy*. Retrieved January 6, 2021, from <https://www.romanpichler.com/blog/elements-definition-product-strategy/>

- Qualitative Research Consultant Association (QRCA) (2021). When to Use Qualitative Research. Retrieved March 1, 2020, from <https://www.qrca.org/page/when-to-use-qual-research>
- Rayport, J. F., & Sviokla, J. J. (1994). Managing in the Marketspace. *Harvard Business Review*, 72(6), 141-150.
- Shapiro, B. P. (2001). Getting things done: Rejuvenating the marketing mix. *Harvard Business Review*, 63(5), 28-34.
- Wangyuenyong, N. (2017). Recruitment Marketing. Retrieved January 13, 2021, from <https://motivetalent.wordpress.com/2017/03/01/recruitment-marketing->

## Guideline for Authors

ASEAN Journal of Management & Innovation (AJMI) is a journal listed in Thailand Citation Index (TCI) and ASEAN Citation Index (ACI) available online.

ISSN 2351-0307

**Volume 8 Number 1**

January – June 2021

### **Stamford International University**

Research and Development Center

16 Motorway Road, Prawet, Bangkok 10250, Thailand

Telephone +66 02 769 4000

**Website:** [ajmi.stamford.edu](http://ajmi.stamford.edu)

© Stamford International University 2015

### • **MISSION STATEMENT**

The goal of AJMI is to publish insightful, original and timely research that describes or potentially impacts management and/or innovation within the ASEAN context. AJMI is multidisciplinary in scope and encourages interdisciplinary research. The journal welcomes submissions in all topics related to management, as well as topics related to innovation; regardless of discipline or subject area.

Topics that are either distinctly ASEAN-related or regional or international in scope, but of relevance to ASEAN readers are encouraged. In addition to empirical research, AJMI accepts conceptual papers as well as papers that provide new insights into previous work and/or conventional wisdom. Also accepted are structured/systematic literature reviews that follow a specific methodology. Manuscripts that are simply literature reviews are generally discouraged.

Relevant topics include, but are not limited to:

- Management & Marketing
- Finance, Banking & Accounting
- Human Resource Management
- International Business Management
- Innovation & Entrepreneurship Development
- Hospitality Management
- Project Management
- Operations & Supply Chain Management
- Business Ethics
- Educational Leadership & Management

### • **PERIODICITY**

Twice a year publication:

- First Issue: January – June (submission deadline, February 15).
- Second Issue: July – December (submission deadline, August 15).

## • ARTICLE SUBMISSION

All submissions and correspondence should be sent to [ajmi@stamford.edu](mailto:ajmi@stamford.edu)

A **strong standard of English** is expected, which means that authors who are non-native speakers may need to have their articles proofread by a qualified person prior to submitting them to AJMI.

Articles must be submitted electronically in Word format. To submit a paper, go to the Journal Management System at [ajmi.stamford.edu](http://ajmi.stamford.edu) and register as an author(s), and upload the file containing the paper.

Articles will be accepted to a maximum of 5,000 words (not including references).

Submission of an article to AJMI implies a commitment by the author(s) to publish in the journal.

In submitting an article to AJMI, the author(s) vouches that the article has neither been published, nor accepted for publication, nor is currently under review at any other location, including as a conference paper. If the article is under review elsewhere, it will be withdrawn from the submission list.

In addition, the author(s) also agree that the article shall not be placed under review elsewhere while the review process at AJMI is ongoing.

If the article is accepted for publication, the author's further guarantees not to withdraw it for submission to publish elsewhere.

## • REVIEW PROCESS

AJMI uses a "double-blind peer review system" meaning that the authors do not know who the reviewers are, and the reviewers do not know who the authors are.

Each article is judged based solely on its contribution, merits, and alignment with the journal's mission.

Reviewers are chosen on the basis of their expertise in the topic area and/or methodology used in the paper.

Should any revision be required, our instructions to authors are designed to move authors towards a successfully published article.

## • PUBLICATION ETHICS

The following outlines the ethical obligations of authors, reviewers, and AJMI Editor-in-Chief.

### **Duties of Authors**

○ Authors should:

- Ensure that they are the sole creators of the article submitted or, in the case of co-authored articles, that all the authors have participated in the design and development of the paper submitted and taken responsibility for them;
- Cite or quote accurately the work and/or words of others; and
- Acknowledge ideas and previously published results by citing them in the article and listing them in the references.

- Authors of articles based on original research should:
  - Present an accurate account of the work performed as well as an objective discussion of its significance;
  - Provide a detailed account of the underlying data used;
  - Ensure that the conclusion is based on the evidence presented and not on personal opinion;
  - Interpret and quote others' works accurately from original sources, not secondary ones, unless original sources are no longer available and a note to that effect is included in the article where appropriate; and
  - Indicate if a submission has been translated into English and provide the proper bibliographic notation for the original article in APA (*Publication Manual of the American Psychological Association*, 6th Edition) format.

All papers will be submitted for plagiarism detection utilizing content matching software.

- Authors should also disclose:
  - Any financial support provided for the research; and
  - Any potential conflict of interest when submitting an article. Conflicts of interest include, for example: employment; consultancy; stock ownership; honorarium; or paid expert testimony.
- As mentioned in the section entitled 'Article Submission':
  - Submission of an article to AJMI for review implies a commitment by the author(s) to publish in the journal;
  - In submitting an article to AJMI, the author(s) vouch that the article has neither been published, nor accepted for publication, nor is currently under review at any other journal or as a conference paper. If the article is under review elsewhere, it should be withdrawn from submission;
  - The author(s) also agree that the article shall not be placed under review elsewhere during the review process at AJMI; and
  - If the article is accepted for publication at AJMI, the author further guarantees not to withdraw it for submission from AMJI to publish it elsewhere.

Note: AJMI does not collect any processing or publication fees.

## **Duties of Reviewers**

- Confidentiality:
  - As part of AJMI "double blind" peer review system (under which authors do not know who the reviewers are, and reviewers do not know who the authors are), reviewers are expected to uphold the confidentiality of the review process;
  - Reviewers should not discuss any aspects of the articles under review with other contributors to the journal;
  - Moreover, any unpublished material contained in an article under review may not be quoted or referenced by a reviewer without the express written consent of the author(s), which should be requested through the Editor-in-Chief of AJMI; and
  - Any information, data, or idea contained in the article under review must be kept confidential and may not be used for the personal advantage of the Reviewers.
- Conflicts of Interest:
  - In the event a reviewer realizes upon receiving an article for review that: (i) he/she has been involved in any manner in the production of that article; (ii) knows the author(s) of the article; or (iii) for any reason is not in a position to provide an objective review

of the article, he/she should inform the Editor-in-Chief and decline to review the article; and

- Conflicts of interest may include, among others, collaborative or competitive relationships or connections with any of the authors, companies, or institutions connected to the article.
- Objectivity:
  - Articles submitted for review should be reviewed objectively solely based on the expertise of reviewers; and
  - Key criteria to be considered as part of the review process should include among others the articulation and coherence of the arguments and the strength of the evidence provided.
- Acknowledgement of Sources:
  - Reviewers should identify any important relevant published work that was not cited by the authors as part of the references; and
  - Reviewers are also expected to bring to authors' attention any substantial similarity or overlap between the article reviewed and any published work of which they have personal knowledge.

### **Duties of Editor-in-Chief**

- Confidentiality:
  - As part of AJMI “double blind” peer review system, the Editor-in-Chief shall take all necessary steps to protect the identity of author(s) and reviewers throughout the review process.
- Conflicts of Interest:
  - In the event the Editor-in-Chief has a personal stake in the publication of an article, the Editor-in-Chief should recuse himself/herself from the review process for that article and a member of the Editorial Board should be nominated by the Editorial Board to step in.
- Objectivity:
  - Decisions regarding the publication of an article submitted for review should be made objectively; and
  - Critical factors to consider in deciding whether to publish an article should include, among others: the level of contribution of the article to its field; the quality of articulation of the arguments; and the strength of the evidence provided.
- Publication Decisions
  - As mentioned above, AJMI does not accept articles for review that have been published or are under consideration for publication in another journal;
  - AJMI Editor-in-Chief is ultimately responsible for deciding which of the articles submitted to the journal should be published;
  - Decisions should be guided by the recommendations of AJMI Editorial Board and constrained by legal requirements regarding libel, copyright infringement and plagiarism;
  - In making decisions, the Editor-in-Chief should always confer with other editors or reviewers.
  - The Editor-in-Chief is committed to taking any reasonable steps to identify and prevent the publication of articles where misconduct has occurred. In the event of documented violation of any of the above-mentioned AJMI policies, the following sanctions shall be applied:
    - (i) immediate rejection of the infringing article;

- (ii) immediate rejection of every other submission submitted to AJMI by any of the author(s) of the infringing article; and
  - (iii) prohibition against all subsequent submissions to AJMI by the author(s), either individually or in combination with other authors of the infringing article, as well as in combination with any authors. The prohibition shall be imposed for a minimum of two years.
- In cases where the violation of any of the above policies is found to be particularly egregious, AJMI reserves the right to impose any sanction beyond those described above, which AJMI would deem appropriate under the circumstances.

#### • RESEARCH COMPONENTS

The article should include the following components:

- An introduction
- A review of the relevant literature
- An outline of the research methodology/ research design
- Research findings
- A discussion of the results
- A conclusion and policy recommendations/ recommendations to managers

**An emphasis should be placed on the discussion of the findings, the conclusion and policy recommendations/ recommendations to managers.**

#### • AJMI STYLE GUIDE

All of the following requirements need to be met before an article can be sent to reviewers.

If the formatting of a submitted paper does not match these requirements, **the paper will be returned without review for correction and re-submission.**

##### *1. Format*

- Must be a Word-compatible document (not a .pdf) and use the American Psychological Association (APA) Referencing Style as shown below (see sub-sections 6 and 7).

##### *2. Title Page*

- Uploaded separately from the abstract and body.
- Manuscript title (not in all capital letters).
- Title, name, affiliation and email address of all authors.
- Indicate clearly who is the corresponding author for journal communication.

##### *3. Abstract*

- Not more than 250 words.
- Should not include any information that would identify the author(s).
- Bold, Times New Roman, 12 point, no indentation.

##### *4. Keywords*

- Three to six keywords are required at the time of submission.

### 5. *Body of the Paper*

- A4 page size.
- Margin of 1" (2.5cm) on all four sides.
- Title of Article: Times New Roman font, 20 point.
- Section Heading: First letter of each word in capitals, bold 14 point font.
- Body Text: Times New Roman font, 12 point, single space between sentences.

### 6. *In-Text Citations*

- All in-text citations included throughout the article must have a corresponding full reference at the end of the manuscript body.
- Only direct quotes need a page number (not paraphrases).
- **Direct Quotes**
  - *One Author*  
Author's Last name (Year) stated that "direct quote" (page number).  
Isenberg (2007) stated that "international dispersion is on the rise" (p. 56). **Or**  
"Direct quote" (Last name, Year, page number)  
"International dispersion is on the rise" (Isenberg, 2007, p. 56).
  - *Two Authors*  
First author's Last name and second author's Last name (Year, page number) mentioned that "direct quote" (page number).  
Isenberg and Kerr (2007) mentioned that "international dispersion is on the rise" (p. 56). **Or**  
"Direct quote" (first author's Last name & second author's Last name, Year, page number).  
"International dispersion is on the rise" (Isenberg & Kerr, 2007, p. 56).
- **Block Quotes**  
If a quote runs on for more than 40 words:
  - Start the direct quotation on a new line
  - Indent the text roughly half an inch from the left margin
  - Remove any quotation marks

*Example:*  
As Krugman (2019) stated:  
 Maybe the larger point here is that there tends to be a certain amount of mysticism about trade policy, because the fact that it's global and touches on one of the most famous insights in economics, the theory of comparative advantage, gives it an amount of mind space somewhat disproportionate to its actual economic importance. (p. 3).
- **Paraphetical Citing**
  - *One Author*  
Author's Last name (Year) in-text paraphetical citation (paraphrase).  
Isenberg (2007) argues that cross-border migration is increasing. **Or**  
Paraphrase (Last name, Year)  
Cross-border migration is increasing (Isenberg, 2007).
  - *Two Authors*  
First author's Last name and second author's Last name (Year) paraphrase.  
Kerr and Isenberg (2007) argued that cross-border migration is increasing. **Or**  
Paraphrase (first author's Last name & second author's Last name, Year).  
Cross-border migration is on the rise (Isenberg & Kerr, 2007).

- *Three to Five Authors*

All authors' Last names (Year) paraphrase.

Kerr, Issenberg, and Steward (2007) argued that cross-border migration is increasing. **Or**  
Paraphrase (all authors' Last names, Year).

Cross-border migration is increasing (Isenberg, Kerr, & Steward, 2007).

For all subsequent in-text paraphrases, first author's Last name followed by "et al." and the publication year.

Isenberg et al. (2007) found that the event resulted in thousands of people flocking to the border.

**Or**

The event resulted in thousands of people flocking to the border (Isenberg et al., 2007).

**Full References**

The following formatting rules apply:

- References appear at the end of the manuscript body in alphabetical order by the first word in the reference (usually the author's last name, sometimes the title).
- All References must have a corresponding in-text citation in the manuscript.
- If more than one work by an author is cited, list them by earliest publication date first.
- If the list contains more than one item published by the same author(s) in the same year, add lower case letters immediately after the year to distinguish them (e.g. 1983a).
- If there is no author, the title moves to the author position (filed under the first significant word of the title).
- Reference list entries should be indented half an inch or 12 mm (five to seven spaces) on the second and subsequent lines of the reference list for every entry - a hanging indent is the preferred style (i.e. entries should begin flush left, and the second and subsequent lines should be indented).
- Double-space all reference entries.

Follow APA Referencing Style format for each source type listed as shown below. For any source type not shown below, go to the APA website for references.

• **Book**

- *One Author*

Author, F. M. / Organization. (Year). *Topic Title*. City: Publisher.

Nagel, P. C. (1992). *The Lees of Virginia: Seven generations of an American family*. New York: Oxford University Press.

- *Two Authors*

Author, F. M., & Author, F. M. (Year). *Topic Title*. City: Publisher.

Nagel, P. C., & Sampson, T. (1995). *Seven generations of an American family*. New York: Oxford University Press.

- *Three Authors*

Author, F. M., Author, F. M., & Author, F. M. (Year). *Topic Title*. City: Publisher.

Nagel, P. C., Sampson, T., & Hubbard, A. J. (1992). *The Lees of Virginia: Seven generations of an American family*. New York: Oxford University Press.

• **Journal**

Author, F. M. (Year). Title of article. *Title of Journal*, vol. (issue), pp xxx-xxx.

Turner, R. A. (2007). Coaching and consulting in multicultural contexts. *Consulting Psychology Journal: Practice and Research*, 59(4), 241-243.

- Website  
Author, F. M./ Organization. (Year of Publication). Web page title. Retrieved (Date) from URL Address.  
Bogati, S. (2013, October 14). Hospitality Industry in Nepal. Retrieved November 3, 2018, from <http://hospitalityindustryinnepal.blogspot.com/>
- Newspaper  
Author, F. M. / Organization (Year, month, day published). Title of article. *Title of newspaper*, page.  
Parker, T. D. (2009, August 3). Getting rid of side stitches. *The Washington Post*, p. E1, E4.

**7. Formatting Figures and Table**

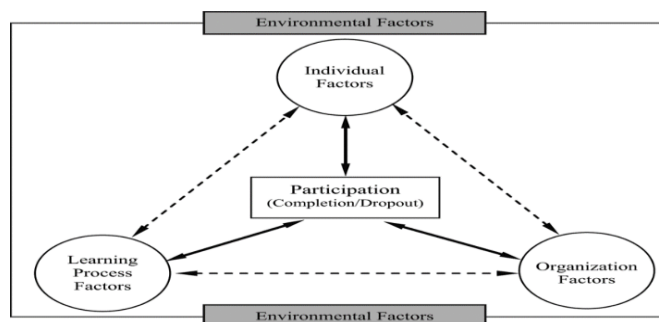
There are two different styles for graphics in APA format: **Figures** (charts, images, pictures) and **Tables**.

- Figures
  - The first graphic (chart, drawing, or image) will be labeled as Figure 1 and be the first one mentioned in the article.
  - Subsequent ones will follow in the appropriate numeral order in which they appear in the article.
  - Follow APA Referencing Style format for each source type listed as shown below. This means that both the Title and the Source are written below the Figure.



**Figure 1:** Name of Picture

**Source:** Author’s Last name OR Organization’s name (Year, Page number OR Online)  
Khoman (2017, p. 137)



**Figure 1:** Conceptual framework

**Source:** Author’s Last name OR Organization’s name (Year: Page number OR Online)  
Wang (2019: p. 45)

- Tables

Tables are labelled separately to Figures and should follow the instructions below.

- The first Table will be labeled as Table 1 and be the first Table mentioned in the article.
- Subsequent ones will follow in the appropriate numeral order in which they appear in the article. This means that Tables are labelled separately to Figures.
- The APA Referencing Style format for a Table differs to that of a Figure. A Table has the Title above the Table, and the Source will be listed below.

**Table 2:** Domestic Tourism in Ayutthaya and Sukhothai in 2004

| Type of Data<br>(2004) | Ayutthaya | Sukhothai |
|------------------------|-----------|-----------|
| Visitor Thai           | 3,023,933 | 1,915,975 |
| Foreigners             |           | 1,107,958 |

**Source:** Author's Last name OR Organization's name (Year: Page number OR Online)  
Tourism Authority of Thailand (2005: Online)

For any source type not shown above, go to the APA website for references.

### References

- APA (2010). *Publication Manual of the American Psychological Association* Washington, D.C.: American Psychological Association (6th ed). Retrieved April 5, 2019 from: <https://opentextbc.ca/researchmethods/chapter/american-psychological-association-apa-style/>
- Bogati, S. (2013, October 14). *Hospitality Industry in Nepal*. Retrieved November 3, 2018 from <http://hospitalityindustryinnepal.blogspot.com/>
- Kerr, W. R., & Isenberg, D. J. (2007) "Take Advantage of Your Diaspora Network." *Harvard Business School* Background Note 808-029, August. (Revised July 2008.) (Featured in a 2008 *Harvard Business Review* write-up.)
- Krugman, P. (2019, May 13) Trump's trade war is killing the 'Pax Americana'. *The Bangkok Post*, p. 9.
- Nagel, P. C. (1992). *The Lees of Virginia: Seven generations of an American family*. New York: Oxford University Press.
- Nagel, P. C., & Sampson, T. (1995). *Seven generations of an American family*. New York: Oxford University Press.
- Nagel, P. C., Sampson, T., & Hubbard, A. J. (1992). *The Lees of Virginia: Seven generations of an American family*. New York: Oxford University Press.
- Parker, T. D. (2009, August 3). Getting rid of side stitches. *The Washington Post*, p. E1, E4.
- Turner, R. A. (2007). Coaching and consulting in multicultural contexts. *Consulting Psychology Journal: Practice and Research*, 59(4), 241-243.