Proceeding of the 4th International Conference on Hospitality and Tourism Management, Vol. 4, 2016, pp. 23-28

ISSN: 2357-2612 online
DOI: https://doi.org/10.17501/icoht.2016.4103

TRAVEL BEHAVIOR OF FOREIGN TOURISTS USING PUBLIC TRANSPORTATION IN NORTHERN OF THAILAND BY USING MULTILEVEL STRUCTURAL EQUATION MODELING

Anuphak Saosaovaphak[1], Chukiat Chaiboonsri[2] and Pairach Piboonrungroj[3]

Kazan federal university/ Institute of Psychology and Education

Abstract

This research is to provide a theoretic framework regarding foreign tourists using public land transportation in the north of Thailand. It focuses on the need of foreign tourists to employ roadway and railway transportation as a medium for travelling. Based on literature, two latent variables consisting of economic variables and public land transportation variables are connected; they both would have an impact on the need of foreign tourists visiting the north of Thailand. Survey research was conducted to collect the data from foreign tourists of two multilevel areas: upper/lower areas and region. A total of 400 responses were analyzed by using multilevel structural equation modeling analysis (MSEM). The results indicated that they are a high relationship between the economic variables and public land transportation variables for foreign visitors who wanted to visit whole areas in the north of Thailand, whereas there is low relationship between the economic variables and public land transportation variables for those foreign visitors who wanted to visit between upper north and lower north of Thailand. This research suggests that all involved parties promoting tourism industry in the north of Thailand should focus on both economic factors and public land transportation factors. However, they should be concerned that economic factors are more related to public land transportation factors for tourists who want to travel the whole region, whereas economic factors are less related to public land transportation factors for tourists who want to travel between of sub region (between the upper north and the lower north of Thailand)

Keywords: Tourism, Multilevel Structural Equation Modeling Introduction

INTRODUCTION

Travel and tourism is an important economic sector in many countries around the world (Ecola & Wachs, 2012) The significance of tourism to the Thai economy is widely accepted as it is the main source of foreign revenue and an important part of current accounts which then provides a significant contribution to the Gross Domestic Product (GDP) and employments (Sookmark, 2011). According to

World Travel and Tourism Council (2015, p. 3), "the direct contribution of travel and tourism to GDP is expected to grow by 6.7% per annual to THB2,045.0 per annual (11.7% of GDP) by 2025".

Further, the role of transportation has been recognized as a key role for developing tourism for many decades (Musa & Ndawayo, 2011). For instance, Hunter (1965) and Wilson (1966) asserted that transportation can impact on regional development while Filani (1995) clarified the role of transportation toward rural development.

Although most international tourists always visit Bangkok, they eventually extend traveling to the

countryside (Sompong & Rampai, 2015). The north of Thailand is one of most popular tourist destinations where the area is 128,480 km2 which is approximately 25% of country, and 90 % of upper northern area is covered by sloping, complex highland with hilly and mountainous (Panomtarinichigul, N.D.) while lower northern area has various tourist destinations related history of Sukhothai regime (Jewcharoensakul, 2013). While the Thai Government has many campaigns to promote the tourism industry such as "Ethnic

Tourism on Hill Tribes" (Ishii, 2011), "Tourism for Learning Intellectualities" (Srichoochart & Suriya, 2011) "Thai Kitchen to the World Project" (Sompong & Rampai, 2015) and so on, public transportation between cities may cause significant negative impact to tourism industry expenditure (Albalate & Bel, 2009). This also can imply that the transport and tourism industries are very closely connected (Albalate & Bel, 2009). In northern Thailand, there are three main mode of transportation including roadways, railways, and airways which tourists can employ to travel between sub regions.

OBJECTIVES

To identify what factors (economic and transportation related factors) influence on the need of foreign tourists to visit the upper and lower regions of northern Thailand

To examine how the relationship between those influencing factors impact on the need of foreign tourists to travel the sub-region (between the upper north and the lower north of Thailand)

LITERATURE REVIEW

The travel and tourism industry and the nation's transportation system have significant interdependent impacting on economy (King & Bowie, 2007). It has been confirmed that economic related factors influence on the demand for travelling (Ecola & Wachs, 2012; Litman, 2013). Those factors may include income level (Fouquet, 2012), the number of family numbers (The Organisation for Economic Cooperation and Development (OECD, N.D.), budget for travelling (Litman, 2013), budget for accommodation (Moisă, 2010) trip purpose (McFedden, 1974), and etc.

Modes of transport include airways, railways, roadways, waterways, cable, pipeline and space; it also involved with infrastructure, vehicles, and operations. (Onyeocha et al., 2015). Indeed, transport is important because it enables trade between peoples, which then establishes development (Beaver, 2002). According to American Public Transportation System (2007), the need for using mode of transportation is also influenced by the personal need. There is also some evidence showing that the need to use mode of transportation may depend on various factors such as safety concern, impact of having children and household responsibilities, impacts of transportationdemand management programs, flexible schedule, emergency services, personal security, and so on (Richardson, Huang, Ebarvia, & Kearney, 2000). This then is a deeply held commitment to rebuy service consistently in the future thereby causing repetitive purchasing (Oliver, 1999).

CONCEPTUAL FRAMEWORK

Regarding previous literature, two latent variables consisting of economic variables and public land transportation variables are connected; and this can be constructed the conceptual framework as figure 1.

METHODOLOGY AND SCOPE OF STUDY

This research employed a survey approach by analyzing data collected from 400 foreign tourists of two multilevel areas: upper and lower areas of northern Thailand during August – December, 2015.

Regarding traditional structural equation models, all latent variables and indicators contrast between typically subjects and are assumed to be independent across subjects. However, this reseach practiced by using multilevel settings where units are nested in clusters, leading to within-cluster dependence. This means the different approaches to extend structural equation models for such multilevel settings was examined. The most common approach is to formulate separate within-cluster and between-cluster models.

Since the total of 400 responses were analyzed by using multilevel structural equation modeling analysis (MSEM), in this research, however, the MSEM algorithm is employ so as to fit a between group Confirmatory Factor Analysis (CFA) model

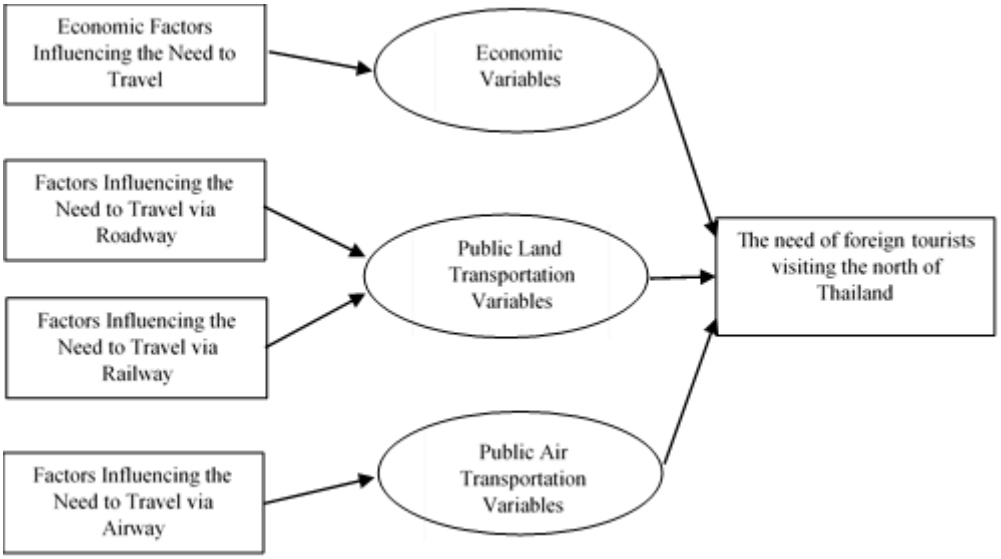

Figure 1: Conceptual Framework

and a within group CFA model to a 2-level data set

(the upper north and the lower north of Thailand)

This research specifies the data set in two level consisting of 1) foreign tourists visiting the sub.region area (within group), and 2) foreign tourists visiting the whole region (between group). This can be shown as the equation bellow

$$Y_{ij} = \beta_j + A_w i_j + r_w \quad \text{(First Level)} \quad (4)$$

Equation (5) specify the structural equation for between cluster.

$$\beta_j = \gamma_{00} + \gamma_B N_j + u_B \quad \text{(SecondLevel)} \quad (5)$$

$$T = W + B \quad (1)$$

When combining eqaution **(**4**)** and **(**5**)** together,

$$\Sigma_T = \Sigma_W + \Sigma_B \quad (2)$$

equation **(**6**)** can be represented as follows ·

$$S^T = Sw + S^B \quad (3)$$

$$Y_{ij} = \gamma_{00} + \gamma_w n_{ij} + u_B + r_w \quad \textbf{(}6\textbf{)}$$

While T is the entirety of multilevel structural This study hence specifies the entirety of Covariance equation for this *research*, S represents the Matrix for both within cluster and between cluster as *Covariance* Metrix for within-cluster, and B is for equation **(**7**)** and **(**8**)** as shown below between cluster.

$$\square_{w} \square\square_{w}\square_{w} \square\square'_{w} \square D_{W}$$ (First Level) (7)

The structural equation for within cluster is shown as equation (4) as follows.

$$\square_{B} \square\square_{B}\square_{B} \square\square'_{B} \square D_{B}$$ (Second Level) (8)

RESULT AND DISCUSSION

The result indicated that there is no relationship between public air transportation variable and the need to travel in the north of Thailand. However, the research found out that they are a high relationship between the economic variables and public land transportation variables for foreign visitors who wanted to visit whole areas in the north of Thailand (3.69.19), whereas there is low relationship between the economic variables and public land transportation variables for those foreign visitors who wanted to visit between upper north and lower north of Thailand (3.01). This means that the foreign tourists who have more advantages in terms of economic related factors are more likely to travel between of sub-regions (between the upper north and the lower north of Thailand) while those who have less advantages in terms of economic related factors are more likely to travel only with in sub-region (within the upper north or the lower north of Thailand)

CONCLUSION AND RESEARCH IMPLICATION

This research suggests that all involved parties promoting tourism industry in the north of Thailand should focus on both economic factors and public land transportation factors. However, they should be concerned that economic factors are more related to public land transportation factors for tourists who want to travel the whole region, whereas economic factors are less related to public land transportation factors for tourists who want to travel between of sub region (between the upper north and the lower north of Thailand)

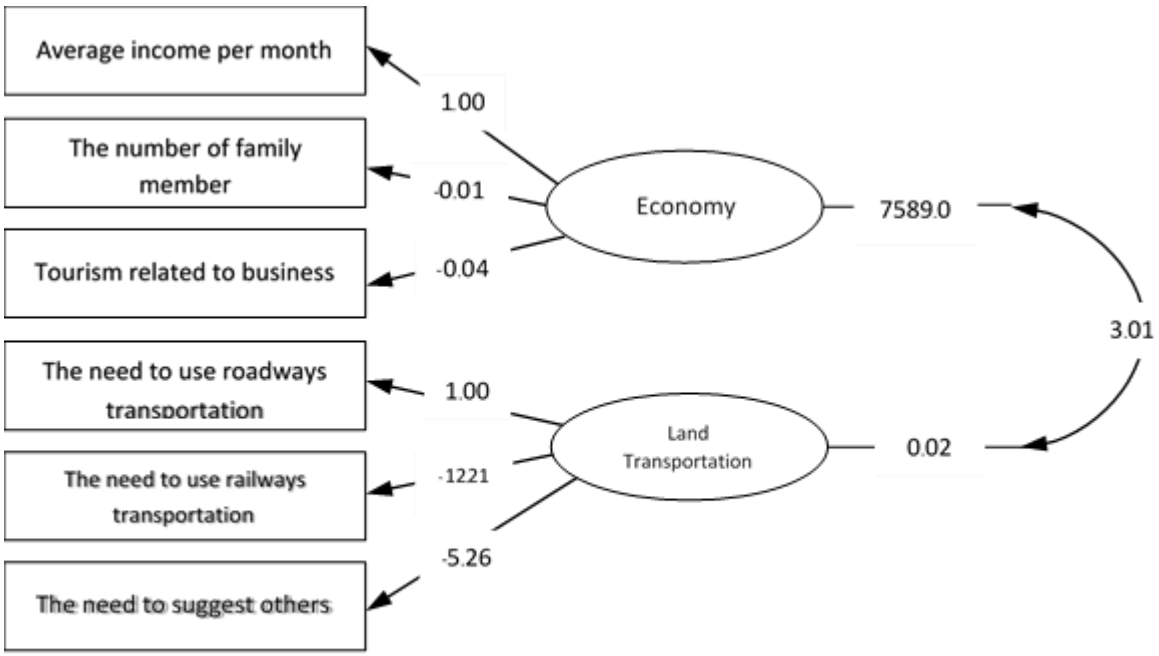

Figure 2: The Result for the within Model

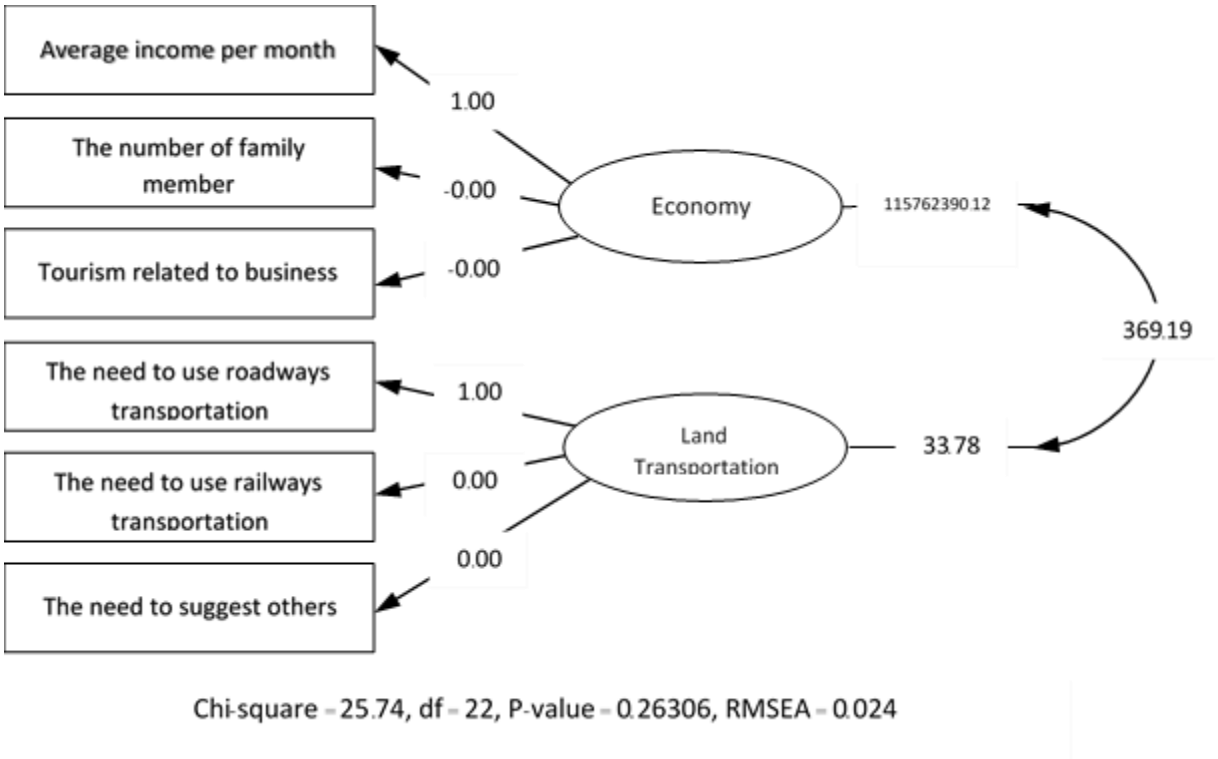

Figure 3: The Result for the between Model

REFERENCES

Albalate, D., & Bel, G., 2009, Tourism and urban public transport: holding demand pressure under supply constraints. Tourism Management, 1-9.

American Public Transportation System. ,2007, Public Transportation: Benefits for the 21st Century. Retrieved 16 MARCH, 2016, from http://www.apta.com/resources/reportsandpublicat ions/documents/twenty_first_century.pdf Beaver, A. (Ed.),2002, Wallingford: CAB International.

Ecola, L., & Wachs, M., 2012, Exploring the Relationship between Travel Demand and Economic Growth, In The RAND Corporation (Ed.): Prepared for: Federal Highway Administration, USA.

Filani, M. O. ,1995, The Geography of Nigeria: Extension Studies Programme. Ibadan: Dabfol Printers.

Fouquet, R. ,2012, Trends in income and price elasticities of transport demand (1850-2010). Energy Policy, 50, 50-61.

Hunter, H. ,1965, Transport in Soviet and Chinese Development. Economic Development and Cultural Change, 14, 71-84.

Ishii, K. ,2011, The impact of ethnic tourism on hill tribes in Thailand. Annals of Tourism Research, 39(290-310).

Jewcharoensakul, S.,2013, Tourist industry promotion: Aim to introduce Thai foods matching with northern program's tours to serve sustainable tourism," Research Report Submitted to National Research Council of Thailand, Thailand Research Fund, Bangkok, Thailand,

King, A. C., & Bowie, A.,2007, Relationships between Transportation and Tourism: Interaction between State Departments of Transportation and State Tourism Offices: A report for "National Cooperative Highway Research Program Transportation Research Board of the National Academies.

Litman, T. A. ,2013, Understanding Transport Demands and Elasticities: How Prices and Other Factors Affect Travel Behavior. Retrieved 12 March 2016, from http://www.vtpi.org/elasticities.pdf

McFedden, D.,1974, The Measurement of Urban Travel Demand. Journal of Public Economics, 3, 303-328.

Moisă, C. O.,2010, Aspects of the Youth Travel Demand, Annales Universitatis Apulensis Series Oeconomica, 12(2), 575-582. Musa, I. J., & Ndawayo, B. A. ,2011, The Role of Transportation in the Development of Tourism in Nigeria Tourisms: An International Multidisciplinary Journal of Tourism, 6(Number 1), 297-305

Oliver, R. ,1999, Whence consumer loyalty? J Mark, 63(3), 433-444

Onyeocha, A., Nnaji, L., Anyanwu, L. A., Ajoku, S. T., Opoola, A., Faith, Y. E., & Maduakolam, C. C., 2015, The impact of Road Transportation Infrastructure on Tourism Development in Nigeria. Pearl Journal of Management, Social Science and Humanities, 1(2), 48-55.

Panomtarinichigul, M., N.D., Research on Sustainable Hill Farming in Northern Thailand. Paper presented at the Paper presented at "Department of Water-Atmosphere-Environment: Institute for Hydraulics and Rural Water Management". University of Bodenkultur, Wien, Austria.

Richardson, B. C., Huang, H.-C., Ebarvia, B. N., & Kearney, O. P. ,2000, Toward Estimating Intelligent Transportation System Benefits Based on User Needs, In Office for the Study of Automotive Transportation: The University of Michigan Transportation Research Institute (Ed.).

Sompong, N., & Rampai, N.,2015, Knowledge Management of Thai Local Food on the Route of Northern Tourism in Thailand. International Journal of Information and Education Technology, 5(9, September), 664-667.

Sookmark, S., 2011, An Analysis of International Tourism Demand in Thailand (Doctor of Philosophy (Economics)), National Institute of Development Administration Bankok.

Srichoochart, S., & Suriya, K. ,2011, Factors influencing the intention to purchase an innovative tourism service for learning Northern Thai intellectualities using a conditional Logit model. Thailand Econometrics Society, 3, 233 - 238.

The Organisation for Economic Co-operation and Development (OECD)., 2016, Measuring the Role of Tourism in OECD Economies. Retrieved 12 March 2016, from http://www.oecd.org/cfe/tourism/2401928.pdf

Wilson, G. W. ,1966, The Impact of Highway Investment on Development: Brookings Institution. World Travel and Tourism Council.,2015, Travel & Tourism Economic Impact 2015 Thailand. London.