

How to Cite:

Nopphakate, K., & Aunyawong, W. (2022). The relationship of tourism logistics management and destination brand loyalty: The mediating role of thailand tourist satisfaction. *International Journal of Health Sciences*, 6(S5), 356–366. <https://doi.org/10.53730/ijhs.v6nS5.7833>

The relationship of tourism logistics management and destination brand loyalty: The mediating role of thailand tourist satisfaction

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Abstract--The tourism industry is an important part of the economy of countries around the world. In high competitive and challenging situations, tourism entrepreneurs have adopted tourism logistics and marketing managements as their strategies. The objectives of this research are to study the effects of physical flow (PHF), information flow (INF), financial flow (FIF), infrastructure (IFS) and sustainability (SUS) on tourist satisfaction (TOS) and the effect of TOS on destination brand loyalty (DBL), including the mediation effect of TOS on the effect on PHF, INF, FIF, IFS on SUS of Thailand's tourists. The study used quantitative method research. The sample was 384 Thailand's tourists, arisen from convenience sampling. The instruments used in the research were questionnaires. The statistics used for data analysis were frequency, percentage, mean, standard deviation, confirmative factor analysis and structural equation modeling. The findings revealed that PHF, INF, FIF, IFS and SUS had a direct positive effect on TOS and TOS had a positive direct effect on DBL. In addition, TOS mediates the effect of PHF, INF, FIF, IFS and SUS on DBL. For practical recommendation, such findings can be a guideline for government and related agencies to design the tourism strategies and policy to satisfy the tourists. For theoretical recommendation, academicians and interested persons can bring the research results to conduct further research on other areas.

Keywords--tourism logistics management, tourist satisfaction, destination brand loyalty.

Introduction

The tourism industry is an important part of the economy of countries around the world. It is constantly evolving and expanding. This is partly a result of globalization, resulting in more convenient communication and transportation causing the economic expansion and more travelling. Many countries have introduced a tourism model according to changing behavior and needs of tourists since tourists want to seek out novelty. This makes the tourism industry highly competitive by focusing more on quality. Therefore, countries around the world have used various mechanisms to promote tourism in many forms with the aim of bringing more tourists into the country. For that reason, the tourism industry is the largest industry in the world (Tarasionak & Dziadok, 2019). Especially in Thailand, the tourism industry is very important to the country's economy. It is a catalyst for economic expansion that leads to employment, job creation, income distribution and investment in related businesses. It is an industry that is related to various types of businesses such as the hotel, tour guide, food and beverage, retail, souvenir transportation, etc. Hence, the expansion of the tourism industry is an important factor that will cause the continued expansion of other business sectors. Thus, the development of the quality tourism industry to be recognized internationally requires collaboration between the related public, private and non-profit organizations in preparing guidelines for developing qualitative tourism that can be put into practice to generate income for entrepreneurs in local tourist attractions. This increases the overall local economy and affects the overall economic system of the country as well (Laparojkit & Suttipun, 2022). However, in the global economic slowdown and the COVID-19 epidemic situation, the tourism industry in each continent has greatly contracted, by which Thailand is also affected (The World Tourism Organization, 2022; Economist Intelligence Unit, 2022), as shown in Figure 1.

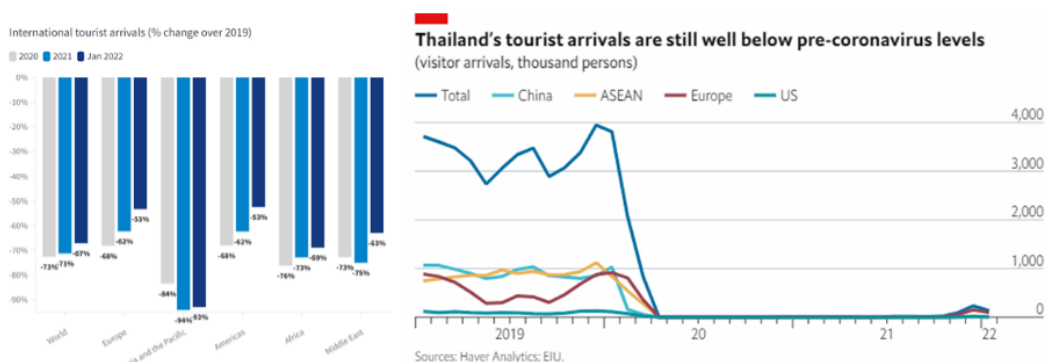


Figure 1 International and Thailand's Tourist arrivals

Source: The World Tourism Organization (2022) and Economist Intelligence Unit (2022)

However, the tourism sector is still a service industry that helps drive the Thai economy. Incomes from tourism of both Thais and foreigners play an important role by accounting for about 20 percent of GDP. In addition, Thailand's tourism is a sector with potential as reflected in the World Economic Forum's Tourism Competitiveness Ranking. Moreover, in the past, the government has issued

"tourism measures" both the previous and the latest measures to stimulate incomes from both foreign and Thai tourists, such as extending the period of the Free Visa on Arrival measure, the One Hundred Single Tour Project, etc. From the past experience, stimulating the tourism sector is clearly effective for the economy because the tourism sector is strong. It is very rudimentary and responds very quickly to stimulus. It also has a positive effect distributed in many sectors whether it is accommodation business, restaurant, community enterprise and transportation business, etc., but those measures are short-term. For developing the potential of the tourism sector to help drive the Thai economy sustainably Long-term measures have to be taken as well. In the past, the tourism sector experienced structural problems that could affect its potential and long-term growth (Setthachotsombut & Aunyawong, 2020). The study, therefore, aims to study the factors that possibly affect the loyalty to tourist destination by focusing the casual factors, comprising tourism logistics management and tourist satisfaction. The findings can be a guideline for government and related agencies to design the tourism strategies and policy to satisfy the tourists. For theoretical recommendation, academicians and interested persons can bring the research results to conduct further research on other areas.

Literature review

Tourism logistics management

Logistics management is planning, improving and controlling the flow of goods and storage for maximizing efficiency and effectiveness from the origin of the product to the end consumer. In addition to the flow of physical goods, logistics management is also concerned with the flow of information as it supports the efficiency of logistics processes as well, whether inventory management, raw material management and packaging (Waiyawuththanapoom et al., 2021). Logistics is not just a management perspective, but logistics is also being integrated with other industries. Another characteristic is tourism logistics, which means the movement of tourists to a various travel place in precise and reliable time with logistics management (Augustyn, M., 1998; Banomyong, R, 2016).

Tourism logistics management started with the concept of tourist transport analysis until it combines transportation management with tourism to achieve appropriate efficiency. In addition, tourism logistics management is linked with supply chain management by integrating the work process of those involved in the movement of resources, whether goods, information and money, from the beginning to the end (e.g. suppliers, service providers) to ensure the most effective results in tourism industry. Tourism logistics management consists of 5 factors: physical flow, information flow, financial flow, infrastructure and sustainability (Setthachotsombut & Sua-iam, 2020; Nualkaw et al., 2021; Aunyawong et al., 2021). These factors can satisfy customers (Aunyawong et al., 2020a). Thus, the following hypothesis is proposed:

H1: Physical flow has a positive direct effect on tourist satisfaction.

H2: Information flow has a positive effect on tourist satisfaction.

H3: Financial flow has a positive effect on tourist satisfaction.

H4: Infrastructure has a positive direct effect on tourist satisfaction.

H5: Sustainability has a positive direct effect on tourist satisfaction.

Tourism marketing management

Marketing refers to the activities, institutions and processes for generating, collaborating, transporting and trading products or services that offer value to customers, partners and society. The customer obtains value from the marketplace and the marketplace obtains value from the customer. Marketing is complex since the customer demand cannot be forecasted. To ensure value creation, marketing plan depends on a set of guiding principles for generating, collaborating, transporting and trading products or services that offer value. Nevertheless, as the marketplace has developed to contain more services as opposite to just merchandises, the extended marketing mix to guide us in improving marketing tactics. The extended marketing mix considers not just the goods itself, which in the case of tourism is often a place; it also considers the people and processes involved in transporting products or services (Eiseman, 2018).

Tourism marketing management is how to manage tourism businesses and destinations in modern, global tourism field using marketing concept such as tourist satisfaction (TOS) and destination brand loyalty (DBL). TOS is reflected a precarious mean for measuring destination performance, as a satisfied tourist is more likely to recommend and return destination (Li et al., 2020). DBL refers to a deep attachment between the tourist and a tourism destination through the intention to revisit or by word of mouth referral (Rahman et al., 2020; Godovykh and Tasci, 2020). DBL have been identified as a conative component (Quoquab et al., 2020). TOS subsidizes to DBL and is conveyed by revisiting or recommending to others (Buhalis et al., 2020; Cakici et al., 2019). Tran et al. (2020), moreover, have depicted a relationship between TOS and DBL. Consequently, the following hypothesis is proposed:

H6: Tourist satisfaction has a positive direct effect on destination brand loyalty.

H7: Tourist satisfaction mediates the effect of physical flow on destination brand loyalty.

H8: Tourist satisfaction mediates the effect of information flow on destination brand loyalty.

H9: Tourist satisfaction mediates the effect of financial flow on destination brand loyalty.

H10: Tourist satisfaction mediates the effect of infrastructure on destination brand loyalty.

H11: Tourist satisfaction mediates the effect of sustainability on destination brand loyalty.

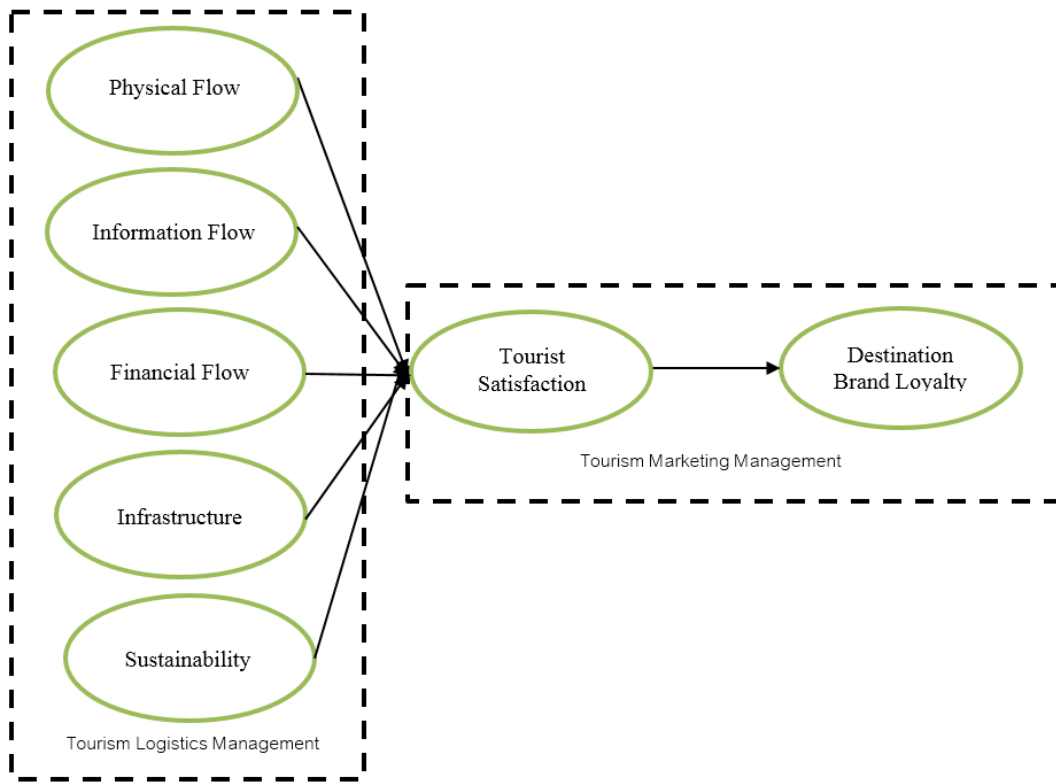


Figure 1: Research Conceptual Framework

Research Methodology

This research is quantitative research. The population in this section includes tourists in Thailand. When 500 questionnaires were distributed, 384 responses were returned. The response rate was 76.8 percent. The sample size was good in terms of the adequacy as suggested by Comrey and Lee (1992). The sampling was done by convenience sampling. The personal information of respondent was shown in Table 1.

Table 1
Personal Information of Respondents

| Demographic information | Numbers (n.) | Percentage (%) |
|-------------------------|--------------|----------------|
| 1. Gender | | |
| Male | | 37.80 |
| Female | 239 | 62.20 |
| Total | 384 | 100.00 |
| .2Age | | |
| Less than 20 years | 7 | 1.80 |
| 20-29 years | 253 | 65.90 |
| 30-39 years | 117 | 30.50 |
| 40-49 years | 7 | 1.80 |
| Total | 384 | 100.00 |

| | | |
|-----------------------|-----|--------|
| 3. Status | | |
| Single | 329 | 85.70 |
| Married | 51 | 13.30 |
| Widower hood | 1 | 0.30 |
| Divorce | 3 | 0.80 |
| Total | 384 | 100.00 |
| 4. Occupation | | |
| Student | 28 | 7.30 |
| Business owner | 187 | 48.70 |
| Company employee | 100 | 26.00 |
| General Employee | 9 | 2.30 |
| Others | 60 | 15.60 |
| Total | 384 | 100.00 |
| 5. Educational Levels | | |
| Under Bachelor | 107 | 27.90 |
| Bachelor | 234 | 60.90 |
| Above Bachelor | 43 | 11.20 |
| Total | 384 | 100.00 |

A questionnaire was an instrument used as research instrument to collect data. The instrument accuracy was checked for validity and reliability. The validity consisted of content validity using IOC >0.5 and construct validity using confirmatory factor analysis (CFA), while the reliability was checked for Cronbachs' alpha coefficient >0.8 (Cronbach, 1990). The five-point Likert scale questionnaire comprised the items related on research variables and based on the concepts of past studies as discussed in literature review. For quantitative data interpretation, the criteria were recommended by Best and Kahn (2006).

For data analysis, first, the level of variables in the research were analyzed using descriptive statistics, including mean, standard deviation (S.D.), Skewness (Sk), and Kurtosis (Ku). The skewness between -3 and $+3$ and kurtosis between -10 to $+10$ indicating a normal distribution when using SEM (Kline, 2011) were considered. Second, discriminant validity was tested based on Maximum Shared Variance (MSV) $<$ Average Variance Extracted (AVE) and Average Squared Shared Variance (ASV) $<$ AVE; Also, the latent variable's AVE should be greater than the squared correlation between the latent variable and all other variables. In addition, the convergent validity was tested taking into account that the composite reliability value must be greater than 0.7 and $AVE > 0.5$ (Fornell & Larcker, 1981). Third, CFA was used to check the construct validity of the questionnaire. Forth, path analysis was used to examine the research hypotheses. Fifth, model fit indicators and the criteria of C.R. or t-value >1.96 were based on hypothesis s proposition by Diamantopoulos and Siguaw (2000).

Research Results

The descriptive statistical results showed that the manifest variables averaged between $3.25 - 4.11$, which was at a high level and had a standard deviation between $.52$ and $.69$. The variable with the highest mean was tourist satisfaction, while the variable with the lowest mean was infrastructure, as shown in Table 2.

Table 2
Descriptive Statistics

| Variable | No. of items | Mean | S.D. | Ranking | Interpretation |
|---------------------------|--------------|------|------|---------|----------------|
| Destination Brand Loyalty | 4 | 4.01 | 0.56 | 3 | High |
| Physical Flow | 5 | 3.72 | 0.63 | 4 | High |
| Information Flow | 5 | 3.33 | 0.65 | 6 | Moderate |
| Financial Flow | 5 | 3.64 | 0.69 | 5 | High |
| Infrastructure | 3 | 3.25 | 0.64 | 7 | Moderate |
| Sustainability | 4 | 4.05 | 0.55 | 2 | High |
| Tourist Satisfaction | 3 | 4.11 | 0.52 | 1 | High |

After CFA were investigated. The test results on composite reliability, convergent validity and discriminant validity depicted that all factors, comprising destination brand loyalty, physical flow, information flow, financial flow, infrastructure, sustainability and tourist satisfaction, were meet the acceptable criteria, as shown in Table 3.

Table 3
Reliability, convergent and discriminant validity

| | | α | CR | AVE | MSV | ASV | Remarks |
|---------------------------|-------|----------|------|------|------|------|------------|
| Destination Brand Loyalty | Brand | 0.91 | 0.84 | 0.55 | 0.44 | 0.41 | Acceptable |
| | | 4 | 4 | 2 | 5 | 7 | |
| Physical Flow | | 0.88 | 0.82 | 0.58 | 0.46 | 0.42 | Acceptable |
| | | 1 | 3 | 8 | 4 | 0 | |
| Information Flow | | 0.90 | 0.80 | 0.57 | 0.47 | 0.41 | Acceptable |
| | | 2 | 7 | 1 | 6 | 3 | |
| Financial Flow | | 0.89 | 0.81 | 0.56 | 0.46 | 0.42 | Acceptable |
| | | 3 | 6 | 9 | 3 | 6 | |
| Infrastructure | | 0.87 | 0.82 | 0.58 | 0.48 | 0.43 | Acceptable |
| | | 5 | 5 | 2 | 1 | 2 | |
| Sustainability | | 0.86 | 0.80 | 0.56 | 0.46 | 0.42 | Acceptable |
| | | 4 | 9 | 3 | 2 | 3 | |
| Tourist Satisfaction | | 0.90 | 0.83 | 0.57 | 0.47 | 0.42 | Acceptable |
| | | 4 | 5 | 4 | 1 | 9 | |

Notes: Threshold of reliability: CR>.70; Convergent validity: AVE>.50; Discriminant validity: AVE>MSV, ASV<AVE. CR =composite reliability; AVE = average variance extracted; MSV = maximum shared variance; ASV = average shared variance.

The results indicated that structural equation model had construct validity due to the following indices: Chi-Square = 44.389, df = 41, p-value = .351, χ^2/df = 1.124, GFI = .977, AGFI = .954, TLI = .998, CFI = .998, RMR = .007, RMSEA = .022. In addition, H1-H11 was supported with statistical significance at the 0.001 level, by which physical flow had a positive direct effect on tourist satisfaction, with a standard coefficient of .690, information flow had a positive direct effect on tourist satisfaction, with a standard coefficient of .696, financial flow had a positive

direct effect on tourist satisfaction, with a standard coefficient of .638, infrastructure had a positive direct effect on tourist satisfaction, with a standard coefficient of .711, sustainability had a positive direct effect on tourist satisfaction, with a standard coefficient of .717, and tourist satisfaction had a positive direct effect on destination brand loyalty, with a standard coefficient of .342. In addition, tourist satisfaction mediates the effects of physical flow, information flow, financial flow, infrastructure and sustainability on destination brand loyalty, with standard coefficients of 236, 238, 218, 243 and 245, respectively, as shown in Table 4 and Figure 3.

Table 4
Structural Model Results

| | Standard coefficients | S.E. | t | P | Support |
|-------------------|-----------------------|-------|-------|-------|----------------|
| PHF -> TOS | 0.690 | 0.053 | 8.661 | 0.000 | H1: supported |
| INF -> TOS | 0.696 | 0.062 | 7.395 | 0.000 | H2: supported |
| FIF -> TOS | 0.638 | 0.098 | 6.284 | 0.000 | H3: supported |
| IFS -> TOS | 0.711 | 0.081 | 7.452 | 0.000 | H4: supported |
| SUS -> TOS | 0.717 | 0.077 | 8.557 | 0.000 | H5: supported |
| TOS -> DBL | 0.342 | 0.085 | 8.273 | 0.000 | H6: supported |
| PHF -> TOS -> DBL | 0.236 | - | - | 0.000 | H7: supported |
| INF -> TOS -> DBL | 0.238 | - | - | 0.000 | H8: supported |
| FIF -> TOS -> DBL | 0.218 | - | - | 0.000 | H9: supported |
| IFS -> TOS -> DBL | 0.243 | - | - | 0.000 | H10: supported |
| SUS -> TOS -> DBL | 0.245 | - | - | 0.000 | H11: supported |

Note: Threshold of acceptable hypothesis: P-value > .05, t-value > 1.96

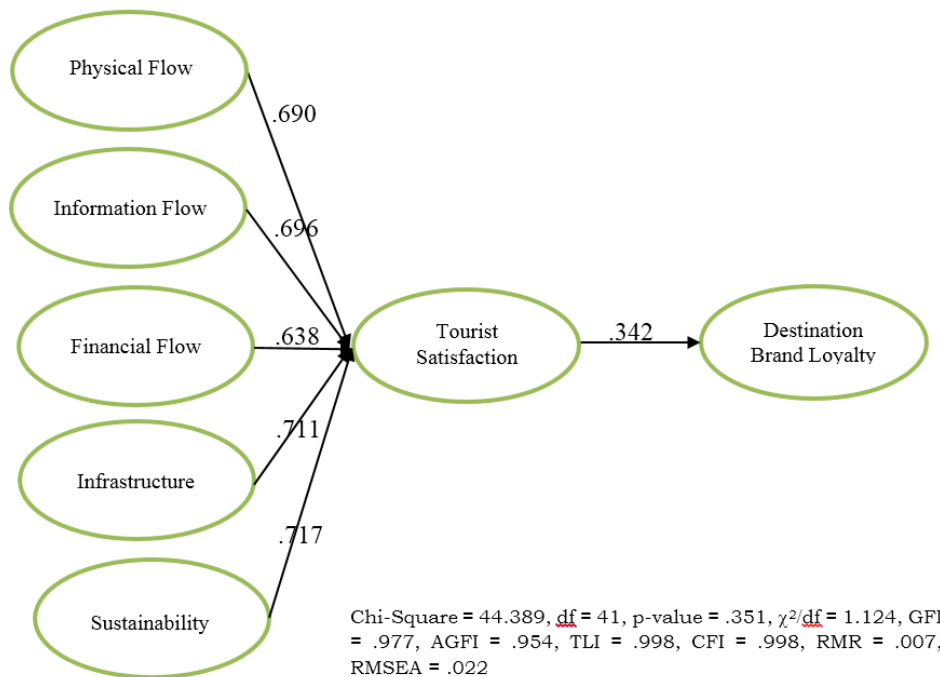


Figure 3: Structural Equation Model

Discussion and Conclusion

The hypotheses are proposed in the literature section of the study for investigating the effects of tourism logistics management factors on tourist satisfaction and destination brand loyalty, including the mediation effect of tourist satisfaction. The results have depicted that first, physical flow, information flow, financial flow, infrastructure and sustainability has a positive significant effect on tourist satisfaction. The tourist satisfaction arises from the convenience and safety in terms of travelling and finance. Public relations and transportation, moreover, can support the travelling. In addition, environmental concern is another adherent (Setthachotsombut & Sua-iam, 2020; Aunyawong et al., 2020a; Waiyawuththanapoom et al., 2021). Second, tourist satisfaction has a positive significant effect on destination brand loyalty and mediates the effect of tourism logistics management factors on destination brand loyalty. Satisfaction with this destination when compared with tourist's expectation, including their time and effort, affects loyalty of tourists to the destination and advices to other people to visit this destination (Buhalis et al., 2020; Cakici et al., 2019; Tran et al., 2020).

For practical recommendation, such findings can be a guideline for tourism industry to improve their logistics management. Tourism entrepreneurs should manage physical, information and financial flows together with infrastructure and sustainability effectively according to research results so that the entrepreneurs can satisfy customer and generate the tourist loyalty to the destination. For theoretical recommendation, academicians and interested persons can bring the research results to conduct further research on other potential industries, such

as automotive and food industries (Aunyawong, 2020b; Pintuma & Aunyawong, 2021), plus technological and innovative issues (Waiyawuththanapoom, 2020) should be considered since they are essential factors in logistics and supply chain management.

References

- Augustyn, M., & Ho, S. (1998). Service Quality and Tourism. *Journal of Travel Research*, 37(1), 71-76.
- Aunyawong, W., Waiyawuththanapoom, P., Setthachotsombut, N., & Wisedsin, T. (2020a). Roles of 7R logistics management and consumer satisfaction on marketing performance of local bottled water SMEs in Thailand. *Test Engineering and Management Journal*, 83, 12220-12229.
- Aunyawong, W., Wararatchai, P., & Hotrawaisaya, C. (2020b). The influence of supply chain integration on supply chain performance of auto-parts manufacturers in Thailand: a mediation approach. *International Journal of Supply Chain Management*, 9(3), 578-590.
- Aunyawong, W., Wararatchai, P., Shaharudin, M.R., Hirunpat, A., & Rodpangwan, S. (2021). The mediating role of transportation practices during the COVID-19 crisis in Thailand. *The Open Transportation Journal*, 15(1), 170-181.
- Banomyong, R. (2016). *Measuring Logistics and Supply Chain Performance Textbook*. Bangkok: ITL Trade Media.
- Best, J. W., & Kahn, J.V. (2006). *Research in Education. (10th ed.)*. Cape Town: Pearson Education Inc.
- Buhalis, D., Parra Lopez, E., & Martinez-Gonzalez, J.A. (2020). Influence of young consumers' external and internal variables on their e-loyalty to tourism sites. *Journal of Destination Marketing & Management*, 15, 1-10.
- Cakici, A.C., Akgunduz, Y., & Yildirim, O. (2019). The impact of perceived price justice and satisfaction on loyalty: the mediating effect of revisit intention. *Tourism Review*, 74(3), 443-462.
- Comrey, A., & Lee, H. (1992). *A first course in factor analysis*. Hillsdale, NJ: Erlbaum.
- Cronbach, L. J. (1990). *Essentials of psychological testing (5th ed.)*. New York: Harper Collins Publishers.
- Diamantopoulos, A., & Siguaw, J.A. (2000). *Introducing LISREL*. London: Sage Publications.
- Economist Intelligence Unit (2022). *Thailand's tourist arrivals are still well below pre-coronavirus levels*. Retrieved from <https://www.eiu.com/n/thailand-to-fully-reopen-to-tourists-on-july-1st/>
- Eiseman, D. (2018). Marketing Sustainable Tourism: Principles and Practice. Camilleri, M.A. (Ed.) *Tourism Planning and Destination Marketing. Emerald Publishing Limited, Bingley*, 121-140.
- Fornell, C., & Larcker, D.F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.
- Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling (5th ed.)*. New York: The Guilford Press.
- Godovykh, M., & Tasci, A.D.A. (2020). The influence of post-visit emotions on destination loyalty. *Tourism Review*, doi: 10.1108/TR-01-2020-0025.

- Laparojkit, S., & Suttipun, M. (2022). The causal factors influencing repurchase intentions of local tourists in Thailand during COVID-19 crisis. *Journal of Tourism Futures*, <https://doi.org/10.1108/JTF-05-2021-0122>
- Li, H., Lien, C.H., Wang, S.W., Wang, T., & Dong, W. (2020). Event and city image: the effect on revisit intention. *Tourism Review*, doi: 10.1108/TR-10-2019-0419.
- Nualkaw, S., Wararatchai, P., Sommanawat, K., & Aunyawong, W. (2021). Service value of transportation service providers for e-commerce products in the new economy era: creativity, society and environment. *Psychology and Education Journal*, 58(4), 2016-2023.
- Pintuma, S., & Aunyawong, W. (2021). The effect of green supply chain management practices on environmental, operational and organizational performances of seafood manufacturers in Thailand. *International Journal of eBusiness and eGovernment Studies*, 13(2), 33-48.
- Quoquab, F., Mohammad, J., & Mohd Sobri, A.M. (2020). Psychological engagement drives brand loyalty: evidence from Malaysian ecotourism destinations. *Journal of Product & Brand Management*, 30(1), 132-147.
- Rahman, M., Moghavvemi, S., Thirumoorthi, T., & Rahman, M.K. (2020). The impact of tourists' perceptions on halal tourism destination: a structural model analysis. *Tourism Review*, 75(3), 575-594.
- Setthachotsombut, N., & Aunyawong, W. (2020). Agro-tourism service enhancement in Nakhon Pathom Province, Thailand: on capability increasing of the hospitality of agriculturists. *International Journal of Supply Chain Management*, 9(6), 1403-1414.
- Setthachotsombut, N., & Sua-iam, G. (2020). Tourism value chain management and tourism logistics in Ubon Ratchathani Province, northeast Thailand. *African Journal of Hospitality, Tourism and Leisure*, 9(1), 1-12.
- Tarasionak, A.I., & Dziadok, V.M. (2019). The Development of the Tourism and Hospitality Industry, Sergi, B.S. (Ed.) *Modeling Economic Growth in Contemporary Belarus (Entrepreneurship and Global Economic Growth)*. Emerald Publishing Limited, Bingley, 163-180.
- The World Tourism Organization (2022). *International tourist arrivals (% change over 2019)*. Retrieved from <https://www.unwto.org/news/tourism-enjoys-strong-start-to-2022-while-facing-new-uncertainties>
- Waiyawuththanapoom, P., Tiratittam, P., Aunyawong, W., & Keerativutisest, V. (2020). The impact of innovation related organizational climate and organizational performance: mediating role of innovative work behavior in Thailand. *International Journal of Innovation, Creativity and Change*, 14(10), 774-794.
- Waiyawuththanapoom, P., Vaiyavuth, R., Tirastittam, P., Zin, S. S., Wongsanguan, C., Aunyawong, W. (2021). Does proactive logistics management enhance business management?. *Polish Journal of Management Studies*, 24(1), 457-471.