

Digital Development to Strengthen Tourism Supply Chain Potential of Participatory Community-Based Tourism Enterprises

Dr. Tommanee Sooksai

College of Logistics and Supply Chain, Suan Sunandha Rajabhat University, Thailand

Dr. Wissawa Aunyawong

College of Logistics and Supply Chain, Suan Sunandha Rajabhat University, Thailand

Assoc. Prof. Mohd Rizaimy Shaharudin

Smart Manufacturing Research Institute (SMRI), Universiti Teknologi MARA, Malaysia

Dr. Kajornpong Poolsawad

Faculty of Education, Chulalongkorn University, Thailand

Jarinthip Prapairak

Damon Good Service Co., LTD.,

Abstract - This research aims to 1) to develop a prototype of digital data storage system for community enterprises, and 2) to study the satisfaction of digital data storage system usage of community-based enterprises for participatory community-based tourism supply chain. The study was mixed method research using the in-depth interview as a tool to collect data from 52 sample community enterprises in Phatthalung Province. The study found that in offering products and services to tourists, it consisted of the storefront and database software systems for product or service owners. The community could record data to present information on the history, origin of products, product information in digital media format. After that, the satisfaction study was conducted from two sample groups, which were users and information presenters in the system. It was found that the overall user satisfaction in all dimensions was at a highest level. When considered each dimension, the results of the evaluation of user satisfaction in the system developed in terms of system performance were at a highest level. The presentation satisfaction was at a highest level. The satisfaction in benefits was at a highest level. Moreover, overall 400 tourists' satisfaction in system in all dimensions was at a high level. When considered on each dimension, the results found that the satisfaction of tourists in system performance was at a high level. The satisfactions both in the form of presentation and in benefits were at a highest level, so the developed system can be used for efficient digital storage.

Keywords - Digital media information, Community Enterprise, Tourism, Supply Chain

INTRODUCTION

The advantages of information technologies and digital media system have become the main instruments for customers to access the internet and have thus become a crucial part of tourists' lives worldwide. Furthermore, they have totally changed consumer behaviors and tourism business processes. The global population spends more hours to use their smartphone, along with the related apps for social networking and communications, indicating an enormous growth in technological usage. Digital media system is a development for various industries such as tourism with regard to better consumer service and commitment. Tourists are addicted to mobile technology in their daily life. Mobile technology is a new business model in the tourism sector. Consequently, the government sectors have to comprehend the prominence of mobile technology and they should invest in applications and digital data systems to obtain benefits from e-tourism business revolution and innovative marketing techniques (Çınar, 2020).

While this digital change has mainly supported the tourism industry, not much is known about how it has impacted tourism experience. This lack is essential since knowledge on how customers use tourism-related applications during their trip could provide expressive perceptions into chances for tourism enterprises and deal with difficulties of tourists with inadequate access to resources to develop their tourism experiences. To cope with this problematic issue, unsatisfied requirements of tourists during their trip should be implicit well in order to discover solutions to them by tourism enterprises (Sinha et al., 2020).

At present, Thailand is vigilant and has more acceptances of technology applications. In addition, the government policies towards the digital economy and society give importance to technology usage so as to be integrated into structures and forms of economic activities, production, trade, services and other social processes, including interpersonal interaction. Thailand must therefore accelerate the adoption of digital technology as an important tool in driving the country's development (Aunyawong et al., 2020a).

In the context of Thailand, adopting digital technology can address challenges that can increase opportunities for country economic and social development. As the Ministry of Information and Communication Technology together with the Ministry of Science and Technology make a digital development plan to set the economic and social direction as a framework for implementing digital economic and social policies and has given importance to the development of domestic business capabilities in agriculture, production and service sectors, especially in the SMEs and community enterprises to compete in the modern world by creating equal social opportunities with information and services through digital media to enhance the quality of life of the people and prepare all personnel to have knowledge and skills suitable for living and working in the digital age in order to be consistent with the New Economy Era of the daily life of the people in society related to E-Business transaction. The community people are familiar with information Technology communication systems which facilitate the way of life. The direction of telecommunication continues to develop continuously and rapidly in the near future, together with the people's lifestyle changed to an online society that allows the operation of various activities of life easier. The entrepreneurs of various businesses therefore need to adapt themselves to meet the changes in technology and support the global society (Tirastittam, et al., 2020).

As discussed, the development of community-based tourism database via digital media system is extremely important and must be able to be creative and take full advantage of digital technology in tourism and the development of infrastructure, innovation, information, human capital and other resources to drive the sustainable development of community-based tourism. This study, therefore, aims to develop a prototype of a digital data storage system for community enterprises for participatory community-based tourism supply chain and to study the satisfaction of using community enterprises digital storage system for participatory community-based tourism supply chain.

LITERATURE REVIEW

Tourism supply chain

Tourism supply chain includes diverse products and services, such as accommodation and transportation. Tourism products are perishable since services cannot be stockpiled for forthcoming consumption (Setthachotsombut & Aunyawong, 2020). Tourism goods, moreover, cannot be inspected before buying and tourists need to travel to the destinations where tourism products are produced to consume these products. For this reason, the sale of tourism products significantly depends on their demonstration at point of sale. Tourism products have a complex nature because they contain numerous service factors, for example, dining, sightseeing and shopping. Finally, the tourism industry frequently encounters greater demand variation and more complicated changing aspects than its acquaintances by reason of an exhaustive competition among service providers (Palang & Tippayawong, 2019).

Community-Based Tourism

Community-based tourism is supposed to provide communities with distinctive chances by not only proposing monetary profits, but also improving their participation in tourism development in their regions in groundbreaking techniques (Rembulan et al., 2020). In enhancing and shaping tourism, local participants or owners make decision in tourism management for advantages of their communities, organizations or state-owned enterprises (SOEs). They support traditional conservation and are focused on the influence of tourism on their community environment. The inhabitants receive revenue as landlords, businesspersons, and product or service providers (Jermittiparsert et al. 2019).

Digital data storage system

Digital data storage system on tourism touches upon costumers' and suppliers' viewpoints in terms of right scheduling and responsiveness. The adoption of digital data storage system is considered a competitive advantage due to the differentiation of tourism enterprises. From the consumers' side, digital data can make probable superlative customization while from supplier view can exploit profits. It makes tourists higher experience, responding to their expectations (Samara et al., 2020).

User and tourist satisfaction

Satisfaction is defined as a judgement of persons on a product or service feature which provides a satisfying level of consumption fulfilment. It has been analyzed within a diversity of experience aspects. Measuring user and tourist satisfactions on digital data storage system leads to the strategies for developing tourism management. Regarding user satisfaction, it depends on accessibility, functions, ease of use and so on. Concerning tourist satisfaction, for the management aspect, the tourists were satisfied the uniqueness and local culture preservation. For the infrastructure aspect, the tourists were satisfied easy access to area of tourist attraction. For the service aspect, the tourists were satisfied helpful and polite shop assistants as well as willingness to help and take good care of them (Hiranphaet, 2019).

RESEARCH METHODOLOGY

The research methodology consisted of following steps: first, information on production sources, products, and services was collected. The target group was 52 registered tourism community enterprises (Sooksai & Aunyawong, 2020) selected purposively for one community-specific product or service. The consideration was based on 1) product produced and sold continuously for at least 6 months, 2) clear address of production place that can be examined and located in Phatthalung Province, 3) entrepreneur willingness to cooperate in providing information such as production processes, raw materials, selling prices, costs, packaging,

marketing promotion, transportation, publicity, etc., as specified in the unstructured in-depth interview form that comprised an open-ended question. The interview form was then checked for accuracy and Item-Objective Congruence Index (IOC) by experts with 3 points (Rovinelli and Hambleton, 1977) for interviewing according to the interview form guidelines set out for each question, as well as recording the interview with the image and video in order to collect information that was precise to the target group used in the research.

Second, for the development of a digital storage system prototype of community enterprises for participatory community-based tourism supply chain, the researchers planned to determine the problems and studied the feasibility in technical, economic, and operational dimensions. The system was analyzed in 2 parts: the storefront system for the tourists visiting the website with the main operating screen as an e-Commerce system to buy community enterprise products, and the database software system for community product owners to record their information in digital format. The system was then designed by synthesizing information from the documents and interviews using tools called System Flowcharts, Context Diagram, Data Flow Diagram and ER Diagram. When the system was developed and installed successfully, so information technology experts assessed its suitability. After the assessment has been completed, tourism experts assessed the suitability of the information and provided instruction manuals for administrators and community enterprises before using to find satisfaction in digital data storage system usage of community enterprises and tourists in Phatthalung Province.

Third, the study on the satisfaction in digital storage system usage of community enterprises for participatory community-based tourism supply chain in Phatthalung Province was divided into two parts: the assessment of satisfaction in digital storage system usage of the community enterprises which had the status of user, and the assessment of satisfaction in digital storage system usage of the community enterprises that accessed to the system, which were A 400 tourists arisen from convenience sampling based on Krejcie and Morgan (1970)'s table at a 95% confidence level, using five-point rating scale satisfaction questionnaire, as recommended by Likert (1932).

RESEARCH RESULTS

For community-based tourism supply chain in Phatthalung Province, services and products delivered to tourists were divided into 6 groups (Intujanyong et al, (2014: (1Accommodation, (2Travel Agents, (3Tourism Publicity Agencies, (4Tourism Business and Activities, (5Business and food services, and (6Travel Business. All groups were consistent with and affected the development of a digital data storage prototype for community enterprises that served to deliver products and services to tourists. Therefore, the developed community enterprise digital data storage system consisted of two parts: a storefront system for tourists who visit websites in Thai language, as shown in Figure 1. The customers could buy community enterprise products and find details on addresses, travels, and points of interest within Phatthalung Province, as shown in Figure 2. Database software system was provided for product or service owners to be able to record in order to present historical information, product sources, and product information in the form of digital media, such as images, audio, clips, videos. The system afforded the linkage to the social media of each community enterprise in asking for more details from manufacturers of community enterprises, as shown in Figure 3.

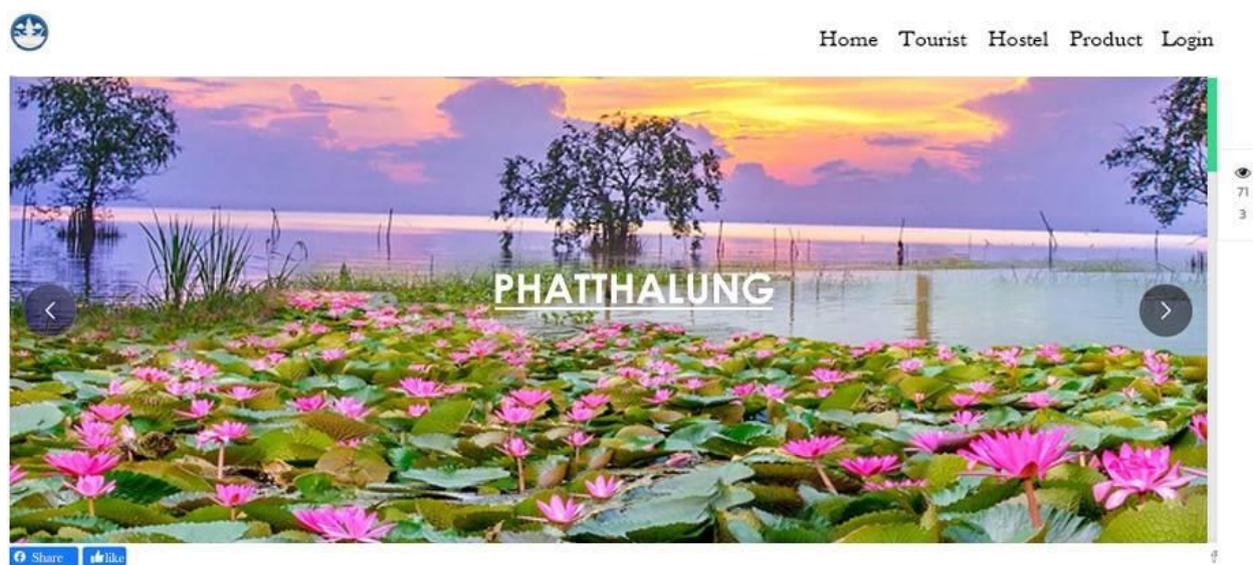


Figure 1

Home Screen of Community Enterprise Digital Data Storage System

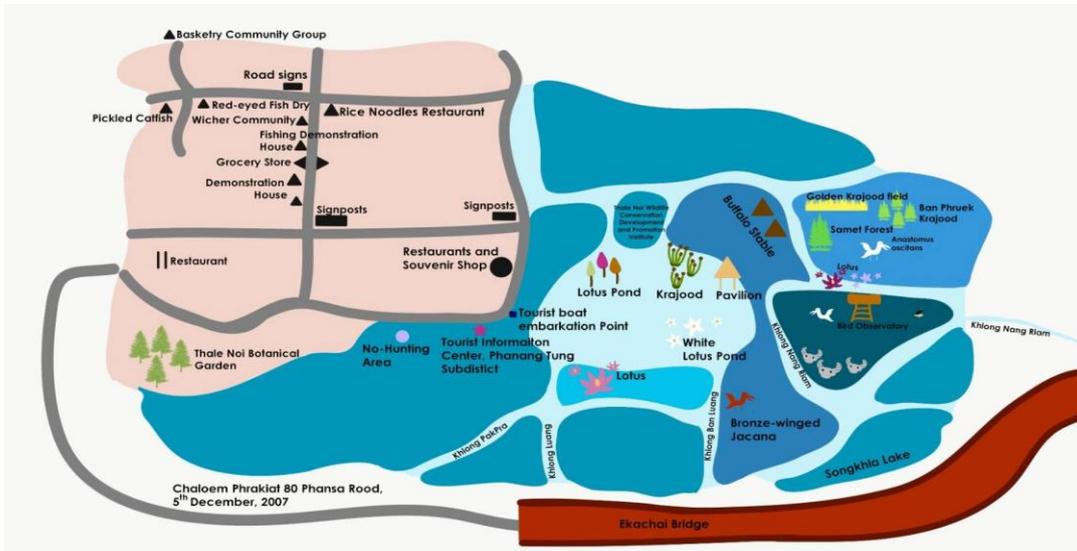


Figure 2

Tourism Map in Phatthalung Province

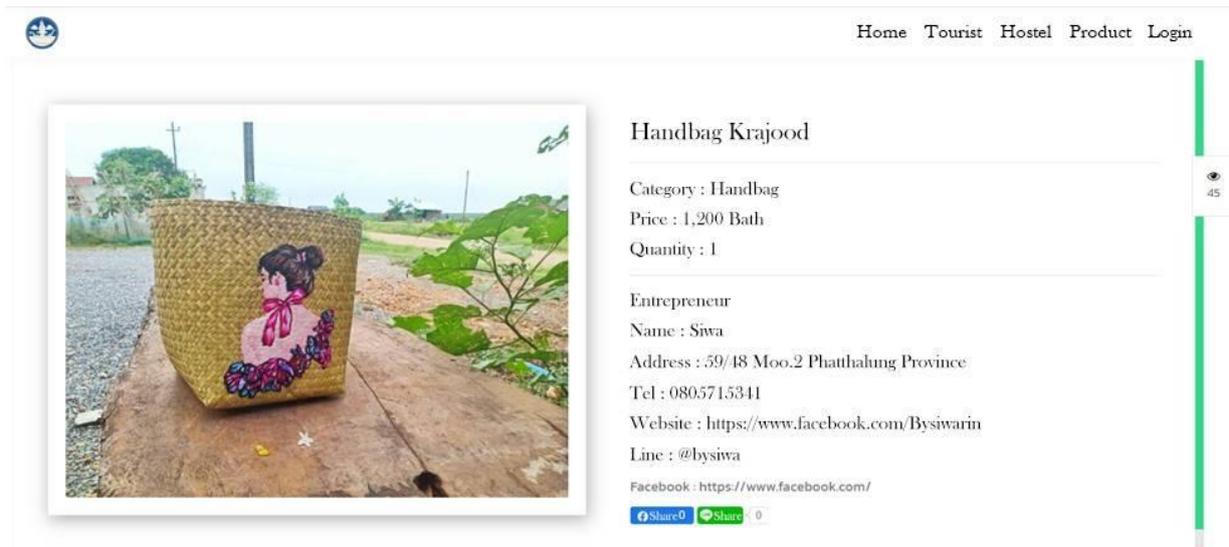


Figure 3

Community product presentations

From the study of users' satisfaction in digital storage system usage of community enterprises for participatory community-based tourism supply chain in Phatthalung Province by using the manuals created to convey knowledge, including steps and methods in accessing and managing the system, it was found that the users' overall satisfaction towards data storage system was at a highest level, with a mean of 4.70. When considered each dimension, the results found that users' satisfaction in system was at a highest level, with an overall mean of 4.64, followed by users' satisfaction in presentation form at a highest level, with an overall mean of 4.93, and users' satisfaction in benefits at a highest level, with an overall mean of 4.54, as shown in Table 1.

Table 1

Results of users' satisfaction assessment with a digital storage system

No.	Assessment list	SD	M	Level
1.	Satisfaction in System			
	1.1 Inputting information into the system	0.50	4.56	Highest
	1.2 Content information display	0.37	4.83	Highest
	1.3 Logging in	0.00	5.00	Highest
	1.4 Logging out	0.60	4.56	Highest
	1.5 Membership	0.73	4.28	High
	Total Mean	0.44	4.64	Highest
2.	Satisfaction in Presentation Form			
	2.1 Overall style of information displayed on the first page	0.37	4.83	Highest
	2.2 Appropriateness and beauty of color, font, and size	0.31	4.89	Highest
	2.3 Composition Suitability	0.00	5.00	Highest
	2.4 Language Usage	0.00	5.00	Highest
	Total Mean	0.17	4.93	Highest
3.	Satisfaction in Benefits			
	3.1 Easier product presentation	0.49	4.39	High
	3.2 More marketing channels	0.45	4.72	Highest
	3.3 Convenience and ease of use	0.50	4.50	Highest
	Total Mean	0.48	4.54	Highest
	Overall Mean	0.36	4.70	Highest

From the study on satisfaction of digital storage system of community enterprises for participatory community-based tourism supply chain in Phatthalung Province assessed by tourists who used the main operation screen from displaying digital data of products and services, the results found that overall tourist's satisfaction towards data storage system website was at the highest level with a mean of 4.59. When considered on each dimension, the results found that tourists' satisfaction in system was at a high level, with a total mean of 4.45, followed by the tourists' satisfaction in presentation form at a highest level, with a total mean of 4.68, and tourists' satisfaction in benefits at a highest level, with a total mean of 4.63, as shown in Table 2.

Table 2

Results of tourists' satisfaction assessment towards the websites

No.	Assessment list	SD	M	Level
1.	Satisfaction in System			
	1.1 Speed of loading content information	0.80	4.40	High
	1.2 Speed of loading images	0.67	4.50	Highest
	1.3 Speed of loading video clips	0.78	4.30	High
	1.4 Channel to contact manufacturers	0.66	4.60	Highest
	Total Mean	0.73	4.45	High
2.	Satisfaction in Presentation Form			
	2.1 Overall style of information displayed on the first page	0.49	4.60	Highest
	2.2 Appropriateness and beauty of color, font, and size	0.80	4.60	Highest
	2.3 Composition Suitability	0.30	4.90	Highest
	2.4 Language Usage	0.66	4.60	Highest
	Total Mean	0.56	4.68	Highest

No.	Assessment list	SD	M	Level
3.	Satisfaction in Benefits			
	3.1 Easier product finding	0.00	5.00	Highest
	3.2 More access to community products	0.49	4.40	High
	3.3 Convenience and ease of use	0.50	4.50	Highest
	Total Mean	0.33	4.63	Highest
	Overall Mean	0.54	4.59	Highest

DISCUSSION AND CONCLUSION

The results of the development of a digital data storage system prototype for the tourism enterprises include a member information management system, tourism enterprise data storage system, and a system to display product and service information of community enterprises. As consistently suggested by past studies, to make the digital media more attractive and to increase the number of tourists, community enterprises need to generate stories for tourists' perception and information acknowledgment in the tourism supply chain because it makes credibility to products and services of tourism enterprises (Setthachotsombut & Aunyawong, 2020; Hiranphaet, 2019) and . However, the stories should have community's own identity, such as community problems, success, stories that affect the communities or villagers, or even the production process of community products to motivate buying decision of customers and to create sustainable development of community-based tourism, as in line with Sommanawat et al. (2021) and Soonthornpipit et al. (2021).

Implementation of digital storage system prototype transmission to the tourism enterprises in the new period of experiencing problems from COVID- 19epidemic in Thailand has caused the transmission operation has to be adjusted for suitability by preparing user manual. The findings portrayed that users' overall satisfaction in digital storage systems was at the highest level because today entrepreneurs are more familiar with digital system adoption to create their competitiveness such as community enterprises in Thailand (Chaisit & Muenthong, 2020) and tourism firms in India (Sharma et al., 2021).. Moreover, overall tourists' satisfaction in digital storage system website was at a highest level since information technology and innovation are continually evolving to meet new needs of customers in Thailand (Tirastittam et al., 2020; Waiyawuththanapoom et al., 2020) as well as providing digital data about destination image and utility technology satisfies international tourists, for example in New Zealand (Saini & Arasanmi, 2021) and Spain (Ballina et al., 2019).

Further research is necessary to emphasize renting efficient hosting by studying the speed of digital information transmission with large and big data, including support qualifications in appropriate software development (Aunyawong et al., 2020b). Furthermore, to enable research to create operational sustainability, a prototype learning center should be developed. Government agency, besides, should oversee and develop the center continuously. The introduction of a digital storage system prototype should be transferred to community-based tourism enterprises in Phatthalung Province for storing databases for community enterprises in other areas by considering the characteristics of community enterprises and improving system consistency.

ACKNOWLEDGEMENT

Research paper received the fiscal year 2020 budget from National Research Council of Thailand (NRCT) under the contract no. "๓12344/2563". Tommanee Sooksai is the corresponding author. Her email address is tommanee.so@ssru.ac.th.

REFERENCES

- [1] Aunyawong, W., Waiyawuththanapoom, P., Pintuma, S., & Sitthipo, P. (2020a). Supply chain business intelligence and the supply chain performance: The mediating role of supply chain agility. *International Journal of Supply Chain Management*, 9(2), 368-375.
- [2] 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.
- [3] Ballina, F.J., Valdes, L., & Del Valle, E. (2019). The Phygital experience in the smart tourism destination. *International Journal of Tourism Cities*, 5(4), 656-671.
- [4] Chaisit, J., & Mueanthong, P. (2020). The development of community enterprise knowledge base management system in Nakhon Sawan with ontology. *Journal of Graduate Review Nakhon Sawan Buddhist College*. 8(2), 237-246.
- [5] Çınar, K. (2020). Role of Mobile Technology for Tourism Development, Hassan, A., & Sharma, A. (Ed.). *The Emerald Handbook of ICT in Tourism and Hospitality*, Emerald Publishing Limited, Bingley, 273-288.
- [6] Strategy and Information Division for Provincial Development. (.(2021Development Plan, Phatthalung 5Year 2022-2018 Annual Review .2021Phatthalung: Phatthalung Provincial Office.

- [7] Hiranphaet, A. (2019). Supply chain management factors affecting tourists' satisfaction towards Thung Bua Daeng Floating Market, Thailand. *African Journal of Hospitality, Tourism and Leisure*, 8(4), 1-14.
- [8] Jermsittiparsert, K., Joemsittiprasert, W., & Phonwattana, S. (2019). Mediating role of sustainability capability in determining sustainable supply chain management in tourism industry of Thailand. *International Journal of Supply Chain Management*, 8(3), 47-58.
- [9] Krejcie, R.V., & Morgan, E.W. (1970). *Educational and Psychological Measurement*, 608-609.
- [10] Likert, R. A. (. (1932A Technique for the Measurement of Attitudes. *Arch Psychological*, .55-1
- [11] Palang, D., & Tippayawong, K.Y. (2019). Performance evaluation of tourism supply chain management: the case of Thailand. *Business Process Management Journal*, 25(6), 1193-1207.
- [12] 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.
- [13] Pintuma, S., Khaengkhan, M., Waiyawuththanapoom, P., & Aunyawong, W. (2020). Moderating effect of information sharing on the relationship of supply chain management capabilities and business performance: A study of the food industry. *International Journal of Supply Chain Management*, 9(2), 341-351.
- [14] Rembulan, C.L., Helmi, A.F., & Riyono, B. (2020). The fluid power: constructing the concept of power in community-based tourism in Indonesia, *Journal of Enterprising Communities: People and Places in the Global Economy*, 14(4), 515-537.
- [15] Rovinelli, R. J., & Hambleton, R. K. (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. *Dutch Journal of Educational Research*, 2, 49-60.
- [16] Saini, S., & Arasanmi, C.N. (2021). Attaining digital advocacy behaviour through destination image and satisfaction. *International Journal of Tourism Cities*, 7(1), 119-134.
- [17] Samara, D., Magnisalis, I., & Peristeras, V. (2020). Artificial intelligence and big data in tourism: a systematic literature review. *Journal of Hospitality and Tourism Technology*, 11(2), 343-367.
- [18] 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.
- [19] Sharma, K., Jain, M., & Dhir, S. (2021). Analysing the impact of artificial intelligence on the competitiveness of tourism firms: a modified total interpretive structural modeling (m-TISM) approach. *International Journal of Emerging Markets*, <https://doi.org/10.1108/IJOEM-05-2021-0810>.
- [20] Sinha, R., Hassan, A., & Ghosh, R.K. (2020). Changes in Tourism Destination Promotion with the Technological Innovation, Hassan, A., & Sharma, A. (Ed.). *The Emerald Handbook of ICT in Tourism and Hospitality*, Emerald Publishing Limited, Bingley, 213-228.
- [21] Sommanawat, K., Hotrawaisaya, C., Waiyawuththanapoom, P., Srisawat, S., Aunyawong, W., Jermsittiparsert, K. (2021). The role of technological management, idea implementation, sustainable process innovation and logistic competency, *Journal of Management Information and Decision Sciences* 24(S1), 1-13.
- [22] Sooksai, T., & Aunyawong, W. (2020). Development guidelines for digital information storage and management of the supply chain of tourism enterprises with community participation in Phatthalung. *Journal of Logistics and Supply Chain College*, 6(1), 34-44.
- [23] Soonthornpipit, H., Kortana, T., & Aunyawong, W. (2021). Expansion opportunities of community enterprises in Thailand to China. *Psychology and Education Journal*, 57(8), 86-97.
- [24] Suphandee, T., Siphai, S., & Phuphayang, N. (2019). The development of database systems Chaiyaphum products for develop to "Starup Chaiyaphum". *Journal of Kanchanaburi Rajabhat University*, 8(2), 191-199.
- [25] Tirastittam, P., Jermsittiparsert, K., Waiyawuththanapoom, P., & Aunyawong, W. (2020). Strategic Leadership, organizational innovativeness and the firm supply performance: The mediating role of information technology capability, *International Journal of Supply Chain Management*, 9(2), 291-299.
- [26] Waiyawuththanapoom, P., Tiratittam, P., Aunyawong, W., & Keeratitvutisest, 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.