RICE Journal

of Creative Entrepreneurship and Management

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Rattanakosin International College of Creative Entrepreneurship, RMUTR

About Us

RJCM is an international journal for academics and scholars at the higher education level to communicate and share their viewpoints and academic work with fellow professionals in the areas of creative entrepreneurship and management as practiced in their fields of specializations in social sciences.

RJCM publishes three numbers per volume annually and welcomes contributors to submit their manuscript in January, May, and September of each year. We accept both academic and research papers in social sciences from contributors.

The length of the unformatted manuscript in WORD can be 15-25 pages in length including references. The contents of the manuscript should include (1) a title with the author's name, affiliate, email address and telephone contact, (2) an abstract of 150 words with 3-5 keywords, (3) an introduction, (4) a rationale and background of the study, (5) research objectives, (6) research methodology, (7) data collection procedure, (8) data analysis, (9) results and discussion, (10) research limitation (if any), (11) conclusion, (12) the author's biography of about 50-80 words, (13) acknowledgement(s) (if any), (14) references, and (15) an appendix or appendices (if any).

All interested readers and paper contributors please contact Editor-in-Chief 2: Ruja Pholsward, Ph.D., Associate Professor, Rattanakosin International College of Creative Entrepreneurship (RICE), Rajamangala University of Technology Rattanakosin (RMUTR), <rujajinda@gmail.com>, <ruja.pho@rmutr.ac.th>. Please kindly note that website submission will be advised after the first editorial screening.

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Note from Editors of *RJCM* Volume 1 Number 1

Dear *RJCM* Readers,

You are now with our first issue in Year 1 of *RICE Journal of Creative Entrepreneurship and Management* (*RJCM*). This issue contains six articles in the areas of tourism business operations and current issues, and projects generating tourism products and services.

In this issue, we have four papers in the area of tourism business operations and current issues: *"Identifying Airport Service Quality Driving Factors: A Case of an International Airport in Bangkok"* (Article 1), *"Forecasting Future Tourism Market Trends"* (Article 4), and *"Digital Currency in Tourism Markets in Thailand"* (Article 5). There is one paper on tourism management as part of holistic education "*The Best Practice of Creative Tourism Management in Agricultural Communities for Promotion of Holistic Education*" (Article 6). Two papers deal with ecotourism--a hydro-powered dam that trickles down local ecotourism operations, and rare plants in botanical gardens at the school level associated with tourism activities, respectively: *"Participation for Benefits: A Case Study of Ratchaprapa Dam Project"* (Article 2) *and "A Study of Guidelines for the Development of School Botanical Gardens in Prachuap Khiri Khan Province"* (Article 3). The paper contributors are from Kasetsart University, Bansomdejchaopraya Rajabhat University, Rajamangala University of Technology Rattanakosin, and Siam Technology College.

The editors-in-chief hope that the important issues and innovations in tourism business operations and current issues as reported and discussed in these research papers will be of value to both researchers and practitioners who may share the same research interest. If possible, the *RJCM* editorial team and the authors would appreciate our readers' feedback to these published articles. We do expect contributions from those who may wish to be part of our *RJCM* network.

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Dear *RJCM* Readers,

To materialize the vision of being *the university for entrepreneurial society* in promotion of the creative industry both in and outside Thailand, Rajamangala University of Technology Rattanakosin (RMUTR) has founded Rattanakosin International College of Creative Entrepreneurship (RICE) since 2018. RICE has its mission to develop and operate international programs that nurture entrepreneurial spirits and skills in students to foster the country's socio-economic advancement with their creativity in the specialized disciplines as well as competency in handling complex problem-solving tasks. This comes with the new challenges in the new world arena characterized by uncertainties as new normals, and rather unexpected patterns of interconnections across its boundaries.

RICE Journal of Creative Entrepreneurship and Management (RJCM) is developed as an international journal to disseminate research and academic papers in the fields of creative management and its related disciplines in diverse types of organizations and contexts. It is expected that both academics and practitioners can benefit from the published articles reporting findings of selected studies, current academic trends, and professional viewpoints. The journal is a scholarly peer-reviewed and fully referred to get a good impact in the international publication network.

In my view, this journal has an official role of RMUTR in supporting the University's goal on creating quality research work, as well as disseminating useful research findings and particularly, innovations in management science for applications both at the domestic and international levels. On these credentials, I hope that this journal will serve the identified purposes well and the editorial team will definitely try their professional best to work with paper contributors, reviewers and readers of publications.

With my best wishes for readers and paper contributors of *RJCM*.

Identifying Airport Service Quality Driving Factors:
A Case of an International Airport in Bangkok

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Abstract

Thai airports need to look at their service quality and passenger satisfaction to become an aviation hub of Asia. Managing Airport Service Quality–ASQ is not an easy task especially when a large number of travelers from budget airlines (Low-Cost Carrier or LCC) outpace the increment and renewal of airport facilities. Quite often, airports have to provide services for a large number of passengers on a limited budget. This study investigated a case of an international airport in Bangkok serving annually around 38 million passengers--mainly LCC. The management of the airport seeks to identify factors that yield passengers' overall satisfaction of the airport. The research objectives were to (1) uncover service quality rated by passengers of the studied airport, (2) identify factors that yield overall satisfaction of passengers, (3) uncover other factors that might help improve the service quality rating, and (4) propose evaluation guidelines for the airport to improve its service quality.

A self-administration survey was conducted with 341 domestic and international passengers using quota sampling in the fourth quarter of 2018. The survey collected data on service items in five categories: (1) Venue and Ambiance, (2) Effectiveness of the Accessibility and Directions Guiding, (3) Efficiency of Process Activities, (4) Discretionary Activities, and (5) Quality of Interaction with Service Personnel. The results showed that all service components are significantly and positively correlated with overall passengers' satisfaction with the airport. It was noted that the most important service component was "venue and ambiance," while the least correlated service component "efficiency of the process activities." In addition, ten interviewed Thai regular passengers, who rated the service quality low, revealed their undifferentiated expectation of services of airports serving LCC and those serving full service airlines. Mood was also found to be a contributing factor of low rating of service quality. From the obtained findings, the researchers recommend evaluation guidelines for the airport to improve its service quality.

Keywords: Airport service quality, driving factors, international airport, Bangkok

1. Introduction

The Thai government has been promoting the country to become Asia-Pacific's air transportation hub. The present administration has announced such a policy to be one of the prioritized agenda in its twenty-year national strategy and ordered a concrete orchestrations of efforts and resource relocations among various government authorities, private sectors and international organizations (Department of Public Relations, 2017). The strategy is tightly linked to the tourism strategy for sustainable development in that airports are the first point of destination impression generation and the link between origin destinations of foreign travelers (Manulang, Bendesa et al., 2015; Office of the Prime Minister, 2018). Strengthening airport competitiveness is, therefore, of high priority for Thailand's socio-economic development.

Currently, Bangkok, the capital city of Thailand has two airports. The newer and bigger one serves mainly full-service airlines and is located in the east of Bangkok while the smaller and older one is located in the north of Bangkok and mainly serves low-cost carriers – LLC. While the adoption of LLC among both international and domestic travelers is on the rise, the second airport is operated in various limitations ranging from space, venue, and operational constraints. The situation is coupled with increasing number and quality of facilities of airports in competing destinations. Sustenance and improvement of passenger satisfaction is, consequently, the key not only to the airports but also the country as a tourism destination.

This study aimed to (1) uncover service quality rated by passengers of the studied airport, (2) identify factors that yield overall satisfaction of passengers, (3) uncover other factors that might help improve the service quality rating, and (4) propose evaluation guidelines for the airport to improve its service quality.

2. Airport Industry and the Studied Airport

Traditionally, airports were regarded just as a transportation terminal and a public space where passengers had to follow the decisions of airlines in choosing particular airports in their routes (Fodness and Murray, 2007). Advancement of transportation technology, higher relative purchasing power of the general public, a more overt stance of previously socialist countries and liberalization of air transportation are among uncountable factors contributing to higher demand of air transportation and, consequently, a larger and more sophisticated airports (Zeithaml, Bitner et al., 2006; Fodness & Murray, 2007; Bezerra & Gomes, 2016).

Liberalization of air transportation, in particular, has made the competition among airports intense and the key success factors of airports are now efficiency of the facility usage and service quality (Fodness & Murray, 2007; Lupo, 2015; Bezerra & Gomes, 2016). Despite the fact that passengers choose their departing or arriving airports from airlines' choice and location, it is believed that customers' satisfaction with airport service quality is an intervening factor of how airlines choose particular airports into their routes (Fodness & Murray, 2007). Airport market demand is fluctuating on the air transportation demand which is, by nature, cyclical on economic conditions (Fodness & Murray, 2007). Intense competition among airports force airport managements to promote their service fees to airlines, thus causing a decline in airports' revenue. In such a light, airports actively seek measures to maximize non-aeronautical revenues, such as from retail, food and beverage, and other services that passengers consume while waiting to board (Fodness & Murray, 2007; Bezerra & Gomes, 2016; Pandey, 2016)

There are two key success factors of airports: efficiency and service quality—both tending to be in conflict. When airports would like to increase their efficiency, they normally take in more flights and shorten the turnaround times, as a result, service quality rendered to customers often decline. Service quality has become harder to sustain and improve for airports that serve LLC, yet maintaining the airline business model solely driven by efficiency (Channoi et al., 2016; Bezerra & Gomes, 2016). It can be argued that management of service quality for airports serving LLC is both difficult and complex in the operational environment and business models. The case is even more complicated for airports that are constrained by space, regulations, and operations.

In this research, the studied airport is an international airport in Bangkok located in the northern strip of the city. The airport used to be the main airport in 1914-2006. The airport was closed for over a year and reopened in 2007 to accommodate the rising demand of LLC connecting Bangkok to 49 domestic and international destinations. Each year, it serves more than 38 million passengers.

There are currently two terminals: Terminal one is for international flights and Terminal two is for domestic flights. Terminal two for domestic flights has newer and better maintained facilities. The traffic for international flights at Terminal one is highly congested with limited waiting areas and toilets. From the researchers' observation, service quality rating for international flights could be lower than that for domestic flights.

As known, the airport itself faces several spatial limitations by being flanked by the air force, and Vipavadi Rangsit Road—thus affecting space for parking and in the terminal. Its tight schedules and high traffic demands make it difficult for renovation work and expansion. The good point about the airport is its location near the city center but with its rather older facilities and not updated design. In this regard, customers' management has become a big challenge in providing quality services.

3. Airport Services and Service Quality

Airport space can be divided functionally into three areas, namely access interface, processing areas and flight interface (Pandey, 2016). *Access interface* refers to the areas where passengers access to and depart from the airport. *Processing areas* include all areas where passengers are processed ranging from ticketing, check-in, security inspection and boarding. *Flight interface* refers to the interaction between passengers and airlines which are normally taken place after passengers boarded the aircraft. The last area—flight interface-- is beyond the scope of this study.

Activity wise, airport services can be divided into two major types, namely process activities and discretionary activities (Bezerra & Gomes, 2016; Pandey, 2016; Cholkongka, 2017). *Process activities* include all services required for passengers to board the aircraft which tend to be similar across countries and are mostly demanded by law. They range from check-in to security screening and boarding. Process activities are normally evaluated on their efficiency, waiting time and courtesy of staff. *Discretionary activities* refer to services that passengers can voluntarily consume while waiting to board the aircraft. They are usually evaluated on the variety, and leisure of alternatives (Arif, Gupta et al., 2013; Bezerra & Gomes, 2016; Pandey, 2016).

As the main motivation of air passengers is a smooth transfer from land to air transportation; therefore, the importance of process activities should outweigh the importance of discretionary activities. While *process activities* deal with how effective airport services, including the quality of encounters with airport and airline personnel, are provided in the airport terminals, *discretionary activities* are usually assessed on how well they can make the waiting time more productive and well-maintained (Fodness & Murray, 2007).

Airport services in this study were therefore grouped into five categories, namely Venue and Ambiance, Effectiveness of Accessibility and Direction Guiding, Efficiency of Process Activities, Discretionary Activities, and Quality of Interaction with Service Personnel.

Considering the motivation of service for air passengers, efficiency of process activities and quality of interactions should constitute the critical determinants for passengers' overall satisfaction with their experience in the studied airport.

The present study had three hypotheses:
H1:   Domestic flight passengers rate service quality of the studied airport higher than international flight passengers.
H2:   Efficiency of Process Activities is the most critical airport service for overall passenger satisfaction.
H3:   Quality of Interaction with Service Personnel is the most critical airport service for overall passenger satisfaction.

4. Methodology

A survey questionnaire was designed after the criteria of the survey questionnaire of Airport Service Quality Survey used by International Airport Council. It contained 43 items asking for flight information, frequency of flight taken, purpose of flights, service quality rating, relative importance ranking, and passengers' in-airport behaviors. The questionnaire item list is given in Appendix A.

Composite variables were computed with reliability criteria of Cronbach's Alpha of 0.70 and above. For composite variables with normal score distribution (z-score is lower than 3.29) were further processed statistically. Variables not meeting normal score distribution criteria (z-score higher than 3.29) were processed with non-parametric statistics.

Self-administered survey was conducted with 341 respondents recruited by stratified random sampling where flights were selected by airport's management in English, Thai, and Chinese.

For variables using interval scales to measure, due to no absolute zero, were scored as follows:

1.00-1.80 are categorized in "improvement needed" zone.
1.81-2.60 are categorized in "poor" zone.
2.61-3.40 are considered "fair."
3.41-4.20 is considered good.
4.21-5.00 are considered excellent.

To find the service component contributing most to the overall satisfaction, correlations between composite variables and overall satisfaction were computed. Mean scores of satisfactions toward different service components were also compared between travelers of different profiles using analysis of variance (Aron & Aron, 1997; Manning & Munro, 2007; Neuman, 2011).

Variables showing significant difference between travelers of different profiles or behaviors were derived from qualitative data of semi-structured in-depth interviews with volunteering passengers. These respondents provided comprehensive views on their experience with airport service quality of the studied airport.

5. Findings

Out of 341 respondents, 196 (57.5%) are female and 144 (42.4 %) are male. One of them (0.3 %) did not provide the information. The majority of respondents were between 26-54 years (84.7 %) as shown in Appendix B.

As for nationality of the total 341 passengers participating in the study, the majority of the respondents were Thai (255 or 74.78%), and Chinese (39 or 11.43%). Respondents mainly traveled for leisure (165 or 48.38 %). As for class of service, 316 respondents (or 92.66%) traveled on economy class and 284 respondents (83.28 %) were 1-6 times on flight within the past six months. Most respondents traveled within the country (212 or 62.17%), followed by developed countries (49 or 14.36 %) and CLMV sub-region (34 or 9.97%).

Five composite variables were computed according to the priori theory, namely Venue and Ambiance, Effectiveness of Accessibility and Direction Guiding, Efficiency of Process Activities, Discretionary Activities, and Quality of Interaction with Service Personnel. The first composite variable was computed initially from 6 items. One item "Quality of Internet Signal" was excluded from the composite variable due to higher reliability. The composite variable "Venue and Ambiance" was calculated by averaging the score of the five question items as shown in Table 1. Reliability of the composite variables by Cronbach's Alpha was 0.893, > 0.70) and validity by item-to-total correlation higher than 0.5) (Manning and Munro, 2007; Morgan, Leech et al., 2013). According to Tabachnick and Fidell (1996) and Manning and Munro (2007), the score of the variable is normally distributed at z-score = 1.688, < 3.29 (critical value for sample size larger than 300) The composite variables were therefore ready for statistical processing.

Table 1: Composite Variable "Venue and Ambiance"

Component Variables		Mean	Standard Deviation	Z-Score	Item -to- Total Correlation
Adequacy of Toilets		3.565	1.073	2.219	0.724
Cleanliness of Toilets		3.542	1.023	2.876	0.721
Comfort of Waiting Areas and Passenger Gates		3.679	0.952	2.267	0.752
Cleanliness of Passenger Terminals		3.870	0.792	0.192	0.786
Overall Ambiance of the Airport		3.769	0.792	0.027	0.702
Cronbach's Alpha	0.893	Composite Variable Mean		3.704	
Standard Deviation	0.754	Z-score		1.688	

Table 1 reports that the studied airport's venue and ambiance are good (Mean = 3.704, S.D. = 0.754). Despite scores of all component variables are considered in the "good" zone, adequacy and cleanliness of toilet facilities are rated the lowest.

The second component of airport service quality is "Effectiveness of Accessibility and Direction Guiding." The service includes passengers' experience with how they get to and from the airport, how convenient it is for them to find directions and information in the airport. The composite variable was computed by averaging the scores of 8 items of the survey questionnaire as shown in Table 2.

Table 2: Composite Variable "Effectiveness of Accessibility and Direction Guiding"

Component Variables		Mean	Standard Deviation	Z-Score	Item -to- Total Correlation
Ground Transportation from/to Airport		3.552	0.845	1.592	0.669
Parking Facilities		3.081	0.982	0.082	0.653
Parking Fee		3.062	0.962	1.016	0.708
Adequacy of Trolley		3.661	0.829	0.826	0.625
Ease of Finding Way in the Airport		3.770	0.863	1.337	0.663
Ease of Finding Flight Information		3.874	0.830	1.690	0.565
Walking Distance		3.644	0.860	0.707	0.647
Ease of Connecting Flight		3.649	0.796	1.244	0.727
Cronbach's Alpha	0.884	Composite Variable Mean		3.532	
Standard Deviation	0.648	Z-score		1.059	

Table 2 shows the respondents' opinion on *accessibility and direction guiding* as "good," except the components related to parking quality and financial cost as "fair." The finding should alarm the management to pay attention to the parking facilities and its service fees. The composite variable was both reliable (Cronbach's Alpha = 0.884 > 0.70) and valid (item-to-total correlations > 0.50) (Neuman, 2011).

As seen in Table 2, the passengers found the studied airport "good" in accessibility and direction guiding (Mean = 3.532, S.D. = 0.648) and the score of the composite variable was normally distributed at z-score = 1.059, < 3.29 (critical value for sample size larger than 300). The statistics indicate readiness for further statistical processing.

The third component of Airport Service Quality is "*efficiency of core airport service processes*," namely check-in, passport inspection, security screening, baggage claims and custom inspection. The composite variable was computed by averaging score of 9 different items. All component service items were found "good" by the respondents. The composite variable was reliable (Cronbach's Alpha = 0.918, > 0.70) and valid (item-to-total

correlation > 0.50). The mean score of core service efficiency composite variable is 3.738 (S.D. 0.689) meaning that the respondents found the core service efficient. The score of this variable was normally distributed at z-score = 0.50 < 3.29 (critical value for sample size larger than 300), signifying readiness of the variable for further statistical processing (Manning and Munro, 2007; Neuman, 2011; Morgan, Leech et al., 2013). Table 3 presents the details of the composite variable "Efficiency of Core Processes."

Table 3: Composite Variable "Efficiency of Core Processes"

Component Variables		Mean	Standjard Deviation	Z-Score	Item -to- Total Correlation
Check-in Waiting Time		3.580	0.985	1.930	0.576
Efficiency of Check-in Staff		3.819	0.898	1.259	0.695
Passport Inspection Waiting Time		3.794	0.912	2.462	0.716
Meticulosity of Security Screening		3.798	0.919	1.968	0.732
Security Screening Time		3.824	0.868	1.241	0.771
Confidence in Security Screening		3.895	0.877	2.044	0.763
Arrival Passport Inspection		3.714	0.823	0.715	0.738
Baggage Claim		3.609	.0839	2.133	0.720
Custom Inspection		3.609	3.849	1.797	0.695
Cronbach's Alpha	0.918	Composite Variable Mean		3.738	
Standard Deviation	0.689	Z-score		0.50	

The fourth component of airport service quality is *discretionary activities* or activities that passengers can voluntarily engage themselves in while waiting to board the flight. Six question items were in the composite variable "discretionary activities" as illustrated in Table 4. It can be seen that while the respondents found quality and variety of catering (Mean = 3.649, S.D. = 0.958), bank machines (Mean = 3.703, S.D, = 0.899) and tax-free shopping services (Mean = 3.525, S.D. = 0.939) as "good." They rated internet service only fair (Mean = 3.256, S.D. = 1.078).

As for price of discretionary activities, the respondents rated the price of catering (Mean = 3.174, S.D. = 1.052) and tax-free shopping services (Mean = 3.198, S.D. = 1.028) as "fairly good," revealing customers' viewpoint on prices of the questioned goods or services as too high (Maholtra, 1999).

The composite variable was by averaging the scores of the six component variables. The composite variable was both reliable (Cronbach's Alpha = 0.868, > 0.70) and valid (item to total correlations > 0.50) (Manning and Munro, 2007; Morgan, Leech et al., 2013). The score

of this composite variable was normally distributed at z-score = 0.859 < 3.29 (critical value for sample larger than 300). From Table 4, it can be seen that the respondents rated the quality of "discretionary activities" at the studied airport as "very good" (Mean = 3.417, S.D. = 0.771); however, they revealed their "less-than-good" experience with internet access and prices of discretionary activities.

Table 4: Composite Variable "Discretionary Activities"

Component Variables		Mean	Standard Deviation	Z-Score	Item -to- Total Correlation
Quality and Variety of Catering Facilities		3.649	0.958	1.756	0.591
Food Cost		3.174	1.052	0.737	0.669
Sufficiency of Bank and ATM Machines		3.703	0.899	1.551	0.675
Tax Free Shopping Facilities and Assortment		3.525	0.939	1.571	0.701
Price of Tax-Free Shopping		3.198	1.028	0.820	0.777
Accessibility and Quality of Wifi Internet		3.256	1.078	1.571	0.594
Cronbach's Alpha	0.868	Composite Variable Mean		3.417	
Standard Deviation	0.771	Z-score		0.859	

The last component of airport service in this study dealt with the quality of interaction with service personnel and airline staff ranging from check-in or baggage drop process, immigration passport screening, security screening process, to airport attendants' help. The composite variable "interaction with service staff" was computed by averaging the scores of the four component variables. The composite variable was reliable (Cronbach's Alpha = 0.887, > 0.70) and valid (item-to-total correlations > 0.50) (Manning and Munro, 2007; Morgan, Leech et al., 2013). The score of the composite variable was normally distributed (at z-score = 2.393 < 3.29 (for sample larger than 300) (Manning and Munro, 2007). Table 5 shows the respondents rating service staff at the studied airport as "very good" (Mean = 3.875, S.D. = 0.783).

Table 5: The Composite Variable "Interaction with Service Staff"

Component Variables	Mean	Standard Deviation	Z-Score	Item -to- Total Correlation
Attentiveness and Helpfulness of Check-in Staff	3.856	0.918	3.091	0.779
Attentiveness and Helpfulness of Passport Controllers	3.887	0.857	2.724	0.797
Attentiveness and Helpfulness of Security Screeners	3.826	0.918	1.067	0.768
Attentiveness and Helpfulness of Airport Staff	3.869	0.958	3.189	0.678
Cronbach's Alpha	0.887	Composite Variable Mean		3.875
Standard Deviation	0.783	Z-score		2.393

In identifying the contribution of the five categories of airport services at the studied airport to passengers' overall satisfaction, the researchers had a multiple linear regression performed between the service categories as an independent variable and passengers' overall satisfaction as a dependent variable.

Table 6: Correlation between Airport Service Quality Dimensions and Multiple Linear Regression with Overall Satisfaction

Variables / Pearson's Correlation (Sig)	Interaction with Service Staff	Discretionary Activities	Efficiency of Core Activities	Accessibility and Direction Guiding	Venue and Ambiance
Overall Satisfaction	0.550 (0.000)	0.490 (0.000)	0.608 (0.000)	0.585 (0.000)	0.654 (0.000)
Venue and Ambiance	0.646 (0.000)	0.580 (0.000)	0.689 (0.000)	0.678 (0.000)	
Accessibility and Direction Guiding	0.750 (0.000)	0.793 (0.000)	0.786 (0.000)		
Efficiency of Core Activities	0.875 (0.000)	0.657 (0.000)			
Discretionary Activities	0.657(0.000)	R = 0.694	Adjusted R^2 = 0.482	F (5,130) = 24.188 (sig. =0.000)	Constant = 1.004
Independent Variables	**B**	**Beta**		**T-test**	**Sig.**
Venue and Ambiance	0.401	0.413		4.486	0.000
Accessibility and Direction Guiding	0.141	0.124		1.308	0.301
Efficiency of Core Process	0.281	0.253		1.717	0.088
Discretionary Activities	0.022	0.024		0.252	0.802
Interaction with Service Staff	-0.047	-0.049		-0.356	0.723

The five composite variables representing different categories of airport service quality were tested with multicollinearity problem using Pearson's correlation coefficient. Table 6 points to each airport service dimension being significantly correlated to each other but not exceeding the critical value (0.90) (Manning and Munro, 2007). The results signified that the five independent variables and the dependent variable were appropriate in multiple linear regression.

The multiple correlation coefficient (R = 0.694) was significant different from zero $F_{(5,130)} = 24.188$, $p < 0.05$ and 48.2 percent of variance of overall satisfaction can be explained by five independent variables as a set (R = 0.694, Adjusted R^2 = 0.482). Only "Venue and Ambiance" (Beta = 0.414, T = 4.486, $p < 0.05$) was found to be significantly and uniquely contributed to the prediction of "overall satisfaction." Effectiveness of Accessibility and Direction Guiding, Efficiency of Core Service, Discretionary Activities and Interaction with Service Staff were not found to provide any significant contribution to passengers' overall satisfaction (T = 1.308, $p > 0.05$, T = 1.717, $p > 0.05$, T = 0.252, $p > 0.05$, T = -0.356, $p > 0.05$). The researchers put the equation of prediction produced by this analysis among the variables as follows;

Overall Satisfaction = 0.401 Venue and Ambiance + 0.141 Efficiency of Accessibility and Direction Guiding + 0.281 Efficiency of Core Service + 0.022 Discretionary Activities – 0.047 Interaction with Service Staff + 1.004

From multiple linear regression performed above, hypothesis two (Efficiency of Process is the most critical airport service for overall passenger satisfaction) and hypothesis three (Quality of Interaction with Service Personnel is the most critical airport service overall passenger satisfaction) were rejected.

To test Hypothesis One, one way analysis of variance was performed between overall satisfaction and terminals of the departure flights. While Terminal one was for international flights and Terminal two for domestic flights, the analysis of variance would show whether or not domestic passengers rate their satisfaction with airport service quality higher than international flight passengers.

Table 7: Analysis of Variance between International and Domestic Flight Passengers on Overall Satisfaction with International Airport

Service	Statistics	Overall Mean	International Flights	Domestic Flights	Remarks
Overall Satisfaction	$\bar{x}$	3.917	3.936	3.907	Levene Statistics = 2.941, df (1,337) = p > 0.05 One Way ANOVA: F (1,337) = 0.130, p = 0.719, >0.05

One-way analysis of variance indicates insignificant difference between international and domestic passengers' overall satisfaction with the studied airport's services. Levene's statistic which serves as the test of homogeneity was found to be insignificant (Levene

Statistics = 2.941, df (1,337) = p > 0.05) signifying that the data were appropriate for analysis of variance. However, the F statistics has shown insignificant differences between passengers taking international and domestic flights (ANOVA: F (1,337) = 0.130, p = 0.719, >0.05). Hypothesis One was therefore rejected.

However, the researchers took a further step to compare overall satisfaction of Thai and international passengers and have found significant differences between the two groups of respondents regardless of destinations and departure terminals.

Table 8: One-way Analysis of Variance between Thai and International Passengers on Overall Satisfaction

Service	Statistics	Overall Mean	Foreign Passengers	Thai Passengers	Remarks
Overall Satisfaction	$\bar{x}$	3.917	4.117	3.795	Levene Statistics = 2.381, df (1,325) = p > 0.05 One Way ANOVA: F (1,325) = 4.117, p = 0.000, <0.05

Table 8 reports that Thai and International Passengers were appropriate for one-way analysis of variance (Levene Statistics = 2.381, df (1,325) = p > 0.05); Thai passengers rated the quality of the airport services at the studied airport (Mean = 3.795) significantly lower than international passengers (Mean = 4.117) (One Way ANOVA: F (1,325) = 4.117, p = 0.000, <0.05). The finding triggered the interest of the researchers to look into lower satisfaction of Thai passengers.

The researchers decided to conduct semi-structured interviews with ten Thai passengers conveniently recruited during the survey of the subsequent quarter. The informants were asked (1) was it convenient for them getting to the airport as compared to other airports in Thailand?, (2) was it smooth for them getting through the processes in boarding the flight?, (3) did the studied airport provide sufficient *discretionary facilities* for them while waiting to board the flight?, (4) were the staff members pleasant and helpful?, and (5) were the airport building and surrounding pleasant? Probing was occasionally done to get a deeper insight into the passengers' satisfaction (Patton, 2002; Hennink et al., 2011).

Among the ten informants, one of them found the airport's service quality "fair" (3 out of 5), 6 of them found the airport "poor" (2 out of 5) and 3 of them found the airport "very poor" (1 out of 5). It was noted that Thai passengers found that getting to the studied airport was problematic with limited public transportation (such as the sky train). They complained about poor taxi services and the use of taxi meter ignored by drivers. In addition, parking was problematic in terms adequacy and unreasonable fees. Worse still, they reported poor arrangement and hospitality shown by security officers at the departure and arrival ramps.

Here are eight excerpts from the interview data, expressing their discontent with:
Parking and taxi:

"I used this airport when I was young and it is, if not worse, similarly difficult to get to this airport. I don't understand why other countries even those who started developing their countries later than us surpass us now. This airport should take Suvarnabhumi airport as their benchmark of quality, although it is difficult to get a *parking* at SVB, you can choose to get there by *taxi* and you have time dragging your baggage down. You can even get there by Airport Rail Link."

Traffic and taxi

"My daughter always complained when she drops me off at this airport because there were *cars taxis and vans messily* dropping somebody off and security officers whistling to rush us to get off the car" "I used to take taxis too, they requested not to use the meters and the requested price is out of question I feel ripped off. I don't understand why we can't arrange it as nicely as Japanese airports I visited with my family."

The two excerpts above show the passengers' frustration over the studied airport regarding transportation access and services. Experienced passengers would expect quality facilities and services to access airports and airlines upon their arrival and departure (Gnoth, 1997; Lovelock et al., 2001; Chi & Qu, 2008).

Check-in process and security screening

"The check-in ladies are nice and so are the identity control. What I find unacceptable is the *security screening*. I don't know what to screen. The officers do not smile and they even make fun of you when you do not know what not to bring on board. They act as if you know nothing and are from rural areas."

High price of food and merchandise

"You have more and more *food choices and things to buy* here but *their prices are unacceptably high*. I know that the price of things at airports tend to be high, but this is something like 50% higher. See? Even the newspapers reported that food cost at Thai airports are much higher."

"I don't get the idea of *charging the food exceptionally high* while you make money from ticket selling. We paid dearly for air tickets and we also have to pay dearly for food. Girl (she called herself aunt), my lunch today at this airport is worth a whole week market fee at home."

Interaction with service staff

"Security screening officers are similar everywhere. They think that they have all the power to block you there or let you pass through your flight. I have seen worse than what I experienced today….*Anyway, you have to admit that people, in general, at Suvarnabhumi airport are much nicer and better trained*. They know

how to approach you….” “…. that's not an excuse of being unprofessional [at an LCC-based airport]. They should know that their airport is older and *passengers are cramped in the hall*, *they should make sure that they receive good services*.”

“Normally, I am forgiving but security screening attendants are rude and look down on Thai passengers. I have observed, they only do this to Thais and Chinese.”

“Low cost or not [LCC-based airport] is not the question, *does low cost means rude and rough*?”

As shown in the excerpts, all interviewed passengers—regardless of the intensity of experience in air travel—expected good and reasonable services. Though they were asked whether they would consider the quality of services and facilities as pertinent to LCC, they responded with their expectation of reasonable, not poor, services provided by the airport under study. This was very clear with the passenger who commented “Low cost or not [LCC-based airport] is not the question, *does low cost means rude and rough*?”

It is true that LCC airport management might wish passengers not to compare the studied airport in Bangkok with the newer international airport in Samut Prakarn next to Bangkok, but that was not possible because certain facilities had to be of air terminal standard, as expressed by two interviewed passengers:

“I feel stressed using this airport. Suvarnabhumi is not the best of course but *this airport is much worse. Toilets are smelled and crowded,* passenger halls are old and sometimes hot. *I don't know if the airport switch on all the air cons…* look at Malaysia, Vietnam or even many airports in China, they are better managed… after all, the airport should remember that it is one of the major airports of Thailand and is located in the capital city.”

“The airport is old is one thing but I have to sit on the floor while waiting to board as *passengers are flocked in the hall and it's hot.* I feel like almost fainted. There was no air to breathe… I have never felt the same at Suvarnabhumi or even in other countries.”

From the interview data which correspond with the survey data reported in Tables 1-5, it seemed imperative for the management of the airport under study to take a prompt action to remedy the services urgent in priority, particularly transportation and taxi, high price of food and merchandise, cleanliness of toilets, and acceptable conditions of air conditioning and ventilation. Certainly, the management should have a systematic check-up and follow-up of upgraded services and facilities.

6. Discussion

As stated in the research objectives to uncover service quality rated by passengers of the studied airport and identify factors that yield overall satisfaction of passengers, the obtained findings pointed to process activities as not significantly contributing to the

overall satisfaction of the airport service quality. The respondents to the survey tended to be in favor of discretionary activities (Table 4) and interaction with service staff (Table 5). In particular, they were not satisfied with cleanliness of toilets (Table 1), parking quality and high price of merchandise and high service fees (Table 2), and rather high prices of discretionary activities and only "fair" internet service. In fact, no any type of activities (process or discretionary activities) or interaction with airport service staff determines the level of satisfaction with the airport (Fodness & Murray, 2007; Manulang et al., 2015; Bezerra & Gomes, 2016). The only factor that significantly contributed to overall satisfaction of the airport is *venue and ambiance* which, according to multiple linear regression, was found to be the only factor that uniquely contribute to airport service quality rating.

The findings confirm the variable and intangible natures of service products--in this study, an airport. Statistics showed that passengers evaluated the quality of their service rendered at the airport (overall satisfaction) based on how they are satisfied with the airport's physical evidence – venue and ambiance and that services are evaluated variedly on the evaluator's air travel experience. The airport under study should, therefore, seek to urgently upgrade its facilities and services to provide the quality proxy and shape good mood of passengers (Davidson et al., 2002; Zeithaml et al., 2006; Faullant et al., 2011).

It should be noted that the second most important aspect of airport service quality is *efficiency of the core service* which concerns mainly with check-in, passport control and security screening. The third most important service aspect is *accessibility and direction provision.* While *discretionary activities* often provide non-aeronautic revenue streams to the airport, they have very little impact on overall satisfaction (Bezerra & Gomes, 2016; Pandey, 2016).

As for the three hypotheses the researchers set to uncover other factors that might help improve the service quality rating, or propose evaluation guidelines for the airport to improve its service quality, all of them were rejected (Tables 6 and 7). To be specific, domestic flight passengers did not rate service quality of the studied airport higher than international flight passengers; efficiency of *process activities* was not the most critical airport service for overall passenger satisfaction; and neither quality of *interaction with service personnel* was the most critical airport service for overall passenger satisfaction. However, from the results of the study reported in Tables 1-5, the researchers could use those variables identified as problematic, like parking, cleanliness of toilets, high service fees and high prices of merchandise and discretionary activities, to propose them for evaluation items to improve the studied airport's service quality.

7. Conclusion

Airport service quality has become increasingly important as it strengthens competitiveness of the aviation, tourism and hospitality industry. Importantly, the two success factors, *efficiency and service quality*, tend to contradict. This study was conducted to identify the most critical service that yielded overall satisfaction of passengers of an international airport in Bangkok serving LCC (Low-Cost Carriers). The findings reveal that most services were rated in the range "good," and the one factor *venue and ambiance* increased overall satisfaction. International and domestic flights passengers did not significantly differ in their rating of airport service quality, but Thai and foreign passengers differed in their rating. In-depth

interviews were conducted with Thai passengers to find out the reasons for their rather low rating of service quality. It was found that Thai passengers had expectation of standard services and facilities provided by airports regardless of the LCC or a full international status. This is a critical basis for the airport management to operate in terms of passengers' overall satisfaction. Future studies on such a critical basis could be pursued with all stakeholders in the airport communities in order to obtain a so-called *satisfaction benchmark* for all parties concerned.

8. The Authors

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10. Appendix A: Questionnaire Items

Variable	Items	Measurement
Flight Information	1. Airlines	Open Ended Question
	2. Flight Dates and Times	Open Ended Questions
	3. Destination	Multiple Choice • Non-tourism domestic destinations • Domestic tourism destinations • ASEAN 5 International Destinations • CLMV International Destinations • Non-ASEAN Developed Countries • Non-ASEAN Developing Countries • China
	4. Class of Cabin Service	Multiple Choice • First Class • Business Class • Economy Class
Travel Motivation	5. Travel Motivation	Multiple Choice • Leisure • Business • Other
Familiarity with Air Transportation	6. Frequency of Air Travel within past 12 months	Multiple Choice • 1-2 times • 3-5 times • 6-10 times • 11-20 times • 21 times and more
Service Quality	How would rate the quality of the following services Venue and Ambiance 7. Internet Access 8. Adequacy of Toilets 9. Cleanliness of Toilets 10. Comfort of waiting areas and passenger gates 11. Cleanliness of passenger terminals 12. Overall ambiance of the airport Effectiveness of Accessibility and Direction Guiding 13. Ground Transportation from/ to Airport 14. Parking Facilities 15. Parking Fees 16. Adequacy of Trolley 17. Ease of finding way in the airport	5 Point Likert Type Scales (1 = Improvement Needed / 5 = Excellent)

Variable	Items	Measurement
	18. Flight information screens 19. In-terminal walking distance 20. Ease of making connecting flights Effectiveness of Process 21. Check-in time 22. Efficiency of Check-in staff 23. Passport inspection waiting time 24. Meticulosity of Security Screening 25. Security Screening Time 26. Confidence in Security Screening 27. Arrival Passport ID inspection 28. Baggage Claim 29. Custom Inspection Discretionary Activities 30. Quality of Restaurant 31. Availability of Bank Machines 32. Quality of Shopping Facilities Quality of Interaction with Service Personnel 33. Courtesy and Helpfulness of Check-in staff 34. Courtesy and Helpfulness of Passport Inspectors 35. Courtesy and Helpfulness of Security Screening Staff 36. Courtesy and Helpfulness of Airport Staff	
Travel Behavior	37. Choice of Ground Transportation to DMK	Multiple Choice • Private Car • Bus Shuttle • Taxi • Rail/ Subway • Rental Car • Other
	38. Arrival Time Prior to Flight Time	Multiple Choice • Less than 30 minutes • 30-45 minutes • 45-60 minutes • 1 Hour – 1 Hour 15 minutes • 1 Hour 15 minutes – 1 Hours 30 Minutes • 1 Hours 30 Mins – 2 Hours • More than 2 Hours
	39. Check in Mode	Multiple Choice • Self service desk • Check in desk • Internet Check in • Mobile Phone Check in • Bag Drop Off Desk • Other

Variable	Items	Measurement
Personal Profile	40. Nationality and Country of Residence	Open-ended Question
	41. Gender	Multiple Choice • Male • Female
	42. Age Group	Multiple Choice • 16-21 • 22-25 • 26-34 • 45-54 • 55-64 • 65-75 • 75 and Older
Additional Comments	43. Additional Comments	Open-ended Question

11. Appendix B: Respondents' Profile and Travel Behavior

Variables	Frequency	Percentile
RESPONDENT PROFILES		
Gender		
Female	196	57.5
Male	144	42.4
Missing	1	0.3
Total	340	99.7
Age Group		
26-34 Years Old	109	32
34-44 Years Old	86	25.2
45-54 Years Old	52	15.2
22-25 Years Old	42	12.3
55-64 Years Old	29	8.5
16-21 Years Old	15	4.4
65-75 Years Old	5	1.5
75 Years and Older	2	0.6
Missing	1	0.3
Total	340	99.7
Nationality Groups		
Thai	255	66
China	39	11.4
European	16	4.7
Asian (Developing Countries)	15	4.4
Asian (Developed Countries)	11	3.2
North American	9	2.6
Oceanian	5	1.5
British	4	1.2
Russian	4	1.2
Latin American	1	0.3
Missing	12	3.5
Total	329	96.5

TRAVEL BEHAVIOR		
Purpose of Travel		
Leisure	165	48.4
Other	122	35.8
Business	54	15.8
Total	341	100
Class of Service		
Economy	316	92.7
Business	15	4.4
First	10	2.9
Total	341	100
Past Six Months Air Travel Frequency		
1-2 Times	113	33.1
3-5 Times	104	30.5
6-5 Times	67	19.6
11-20 Times	33	9.7
More than 21 Times	23	6.7
Missing	1	0.3
Total	341	99.7
Destinations		
Non-tourism Domestic	120	35.2
Domestic Tourism	92	27.0
International (Developed Countries)	49	14.4
International (CLMV)	34	10.0
International (ASEAN Five)	21	6.2
China	21	6.2
International (Developing Countries)	4	1.2
Total	341	100

Participation for Benefits:
A Case Study of Ratchaprapa Dam Project

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Abstract

The objective of this research was to study benefits from natural source management of tourism gained by people in the protected areas of Ratchaprapa Dam in Suratthani Province, Thailand. The researcher used in-depth interviews to collect data from 60 subjects under study. The subjects were key informants on a voluntary basis—business operators, tourists, and officers in Khao Sok National Park. The obtained data were analyzed by content analysis. The findings revealed that the villagers received benefits from the offseason products and developed entrepreneurship in sustainable tourism. They provided for tourists' activities, such as sightseeing the dam, seeing the morning mist, swimming, feeding fish, paddling and cave visit tours. All activities have helped the villagers earn additional income for betterment of living in their community.

Keyword: *Participation, Ratchaprapa Dam, benefits, sustainable tourism*

1. Background and Rationale of the Study

Tourism is an industry that plays an important role in generating income for the country (Ministry of Tourism and Sports, 2016). The tourism industry has created investment and employment in many other related businesses, resulting in local income distribution and various tourism developments in conservation areas. These adhere to sustainable tourism principles in line with the sufficiency economy concept. Nowadays, tourists prefer ecotourism with incentives in traveling for the values, needs, and places, as seen in the southern region featuring many tourist attractions, such as waterfalls, mountains, sea, and Ratchaprapa Dam. Surat Thani Province is one of the major tourist destinations for both Thai and foreign travelers. The number of tourists in this area increased to an average of 300,000 persons in 2016--generating income for the community at 65 million baht. Currently, most of the tourists are Thai, but the number of foreign tourists is increasing (Ministry of Tourism and Sports, 2017a). Chinese tourists have called Ratchaprapa Dam "Guilin of Thailand" for similarity in natural beauty of limestone mountains. The Dam is used as an irrigation reservoir--managing water to prevent flood, and generating hydro-powered electricity for the local communities (Seniwong, 2014).

Ratchaprapa Dam, originally known as Chiew Lan Dam, was constructed in 1982-1987 as a project under King bhumibol's intitiative. Its name was changed to Ratchaprapa

meaning the light of the kingdom by the Crown Princess Maha Chakri Siridhorn in 1987. The Dam carries multi purposes on energy, and water resource developments. Its system connects electricity with irrigation and water management; the water produced through the electricity generating system will enter the irrigation channels for agriculture and consumption of the local communities. It has also been planned that the Dam is to produce other relevant trickle-down effects on tourism to yield benefits in support of the local economy.

The dam construction had a substantial impact on the environment because the valleys were flooded, the soil fertility eroded, and the wildlife sanctuary with rare plant species eliminated. The forest area was gone and the surrounding vegetation dead; local people had to evacuate from the dam site to relocate themselves to the areas designated by the Electricity Generating Authority of Thailand (EGAT). Soon after the construction, the dam has become a tourist attraction for its scenery of beautiful limestone mountains like at Guilin in China, and the nearby green forest has gained back its fertility to attract both local and foreign tourists. The local communities responded to tourists' visits with silk weaving demonstration, and small businesses on local guides and souvenir products. In particular, the reservoir of the Ratchaprapa Dam is an important source of freshwater fisheries that can bring good income to villagers and support their rice planting (Community Strengthening Bureau of Sufficiency Econonomy, 2011; Steering Subcommittee of Sufficiency Economy, 2015).

Since the initial purpose of the dam construction was on hydro-powered electricity and irrigation, not on tourism, the researchers were interested in the dam's trickle-down effects on tourism for the local communities and would like to investigate the benefits of tourism management in the conservation areas. This was a case study of Ratchaprapa Dam in Surat Thani Province on benefiting people in the communities by sustainable ecotourism. The researchers would like to find out the benefits as perceived by tourists visting Ratchaprapa Dam.

2. Literature Review

As known worldwide, *sufficiency economy* is first regarded as a philosophy in life to support reasonable existence by having enough of five basic necessities pertinent to Thai people—water, food, clothing, shelter and medicine. For a decent living to attain food through planting rice and growing fruit frees and vegetables, the government on the national scale has considered water management for effective irrigation as the foundation for economic development in agro production. In this regard, the dam construction fundamentally aimed at reservoir for irrigation and hydro power for electricity. Sufficiency economy however has its primary focus on individuals and small communities to be self-sufficient with five basic necessities for survival from acute poverty. Individual and small communities can proportionally allocate their land for a small pond, a planting area of fruit trees and vegetables, small poultry farming, and housing. Such allocation is for self-sufficiency of families and communities without resorting to buying commodities from outside businesses (Community Strengthening Bureau of Sufficiency Economy, 2011).

It requires knowledge of sufficiency economy, diligence, and great care in planning and work process in keeping a good balance in production and consumption. Work in sufficiency

economy helps individuals' adjustment to rapid and extensive changes in the social and cultural environment inside the country, and the economic trend in the outside world. What matters most for individuals and small communities is to survive from being poverty-stricken (Community Strengthening Bureau of Sufficiency Economy, 2011: 7). The sufficiency economy principles are based on moderation, reasonable spending, and good self-immunity for decent living. The Steering Subcommittee of Sufficiency Economy (2015) put emphasis on five domains: knowledge, prudence, integrity in operators check, planning for decision, and taking action on the decision made. The explanations are as follows:

1. Knowledge. It is important to have the knowledge of Thai local wisdom and traditional lifestyle to cope with changes over time of crises, as well as good understanding of sustainability of development.

2. Prudence. Individuals and family need to be moderate and cautious in making steps into investing, producing and calculating risks involved.

3. Integrity in operators check. This is guided in three steps:
   Modesty refers to moderation in production and consumption.
   Reasonableness means the practically appropriate level of sufficiency by taking into careful consideration all factors involving the use of water and expected results, for instance.
   Immunity refers to preparation for effects from changes that might happen in the future, both near and far.

4. Planning. This is a condition prior to decision-making on activities that require both knowledge and morality.
   Knowledge Condition. This includes scientific and academic knowledge to carry out planning and precautions in practice.
   Moral Condition. This must be strengthened with awareness of morality— honesty, patience and perseverance in executing the target work with success.

5. Action. This means executed operations with expected results and received feedback.

As described, sufficiency economy has it foundation on water and its moderate use to generate five basic necessities for decent living of individuals and communities. Excess from investment and production can be distributed into the local or national economy for additional income or wealth, if desired. The bottom line is for individuals or communities to be self-sufficient and free from all poverty-stricken conditions. On this basis, sufficiency economy can extend itself to further benefit the country's economy, society, environment, knowledge source, and technology.

3. Scope of Research

The researcher was to collect in-depth interview data on *economic, social environmental and managerial benefits from sustainable tourism activities* from 60 key informants on a voluntary basis—business operators, tourists, and officers of Khao Sok Park. The participating operators and officers work in the communities and the government sector; they have been involved in managing and overseeing development in the Ratchaprapa Dam area as a tourist destination.

4. Research Objective

The objective of this research was to study benefits from natural source management of tourism gained by people in the protected areas of Ratchaprapa Dam in Suratthani Province, Thailand.

5. Research methodology

The researchers used a qualitative research method by in-depth interviewing 60 participants who were (1) business operators, (2) tourists and (3) officers of Khao Sok National Park. Twenty participants per group volunteered their responses to the interview questions. They were asked about the tourism management process in the community, appropriate tourist management styles, and the problems and existing obstacles in the operations of tourism management. The interviews were video- and audio-recorded with consent from the interviewees and the obtained data were later content-analyzed for a clear picture of the benefits gained from tourism activities to the local communities, as perceived by the business operators, tourists, and officers of Khao Sok National Park.

6. Data Analysis

The researchers systematically analyzed the in-depth interview data by using the content analysis method for results detailed as 29 classified items under seven issue categories: (1) economic benefits in 5 items, (2) social benefits in 6 items, (3) environmental benefits in 2 items, (4) management benefits in 4 items, (5) reception benefits in 2 items, (6) participation in leadership in 3 items, and (7) benefits and participation in control in 7 items (see Table 1 for 7 Issue Categories and 29 classified items of Participants' Responses).

Table 1: Interview Issues and Participants' Responses

Interview issues	Summary of Participants' Responses
Economic benefits	1. At present, most tourists are Thai people but the trend of foreign tourists is increasing. When tourists come in, the local community receives income from services provided by the community. 2. The people in the community can sell many souvenirs. 3. The benefit for communities is in the members earning benefit. 4. If looking at the economic direction, tourists are interested in reviewing their visit via online media. The word of mouth attracts more tourists. Aside from increased income for the community, the country also earns more domestic income. 5. If looking at the economic direction, tourists help create a good reputation for sustainable tourism development for the communities and the villagers to have a new career in small businesses in local guide services, restaurants and souvenirs.
Social benefits	1. The community participates in providing services for tourist attractions. 2. Tourists' safety requires electricity for various hotels and accommodations. 3. Tourism provides for people in the village to show friendliness and warm hospitality to tourists. 4. Social security helps the local people to earn income from trade. 5. People can work to earn more income and reduce social problems related to drug. 6. Ratchaprapa Dam has beautiful nature; as a result, people in the area are proud of their location and make it known to foreign tourists.
Environmental benefits	1. Ratchaprapa Dam gives environmental benefits. It helps to reduce the severe flooding in the lower areas, and produces electricity from hydro power. 2. Cultivation in the local area of Tha Khun Subdistrict Khiri Rat Nikhom and Phunphin districts makes off-season plant growing possible by using water from the dam. The reservoir of the dam supports freshwater fishery for provision of economic products as well as a tourist attraction beneficial to the communities in the area.
Management benefit	1. Employment benefits for community members in participating in planning for good management. 2. Budget allocation. 3. Allocated areas for earning income from small businesses. 4. Evaluation and reporting on tourism-related feedback.

The reception Benefit	1. The participation in the organization is the mission performance of each individual or many people on coordinating various tasks for success. 2. There is agreement on the need and direction of change for participation in decision making on project operations, participation, and gained benefits.
Participation in leadership	1. The community leaders take a very important role in community development; they lead communities to identify what is suitable and linked to national development. Leaders can bring about change in the communities. 2. The community leaders can inspire people to participate in tourism development and encourage the latter to feel confident in being part of success in tourism development. 3. The community leaders organize activities for participation for the latter's benefits and understand the participants' role in tourism development.
Benefit and participation in control	1. There is management planning in the organization. The heads of each level have assigned tasks in each section to manage according to the plan to reach the work target. 2. Participation is vitally important because it allows people in the communities to do activities together, express opinions for improvement, and create a sense of unity for members in the communities. This is to empower people in the communities in that they themselves are the great drive for success in planned activities, and certainly with support from the local authorities. In fact, those who can take full credits for success have to be participating members of the communities. 3. The government and the public sector have created principles of participation together. To make each other aware of needs and existing problems, they are deeply involved in the activities and development plans of the communities toward the goal on sustainability. 4. There is a good opportunity for the public to participate in tourism operations or share suggestions as alternatives to government administration. 5. The process in which target people are provided with opportunities for tourism operations is to be explicated to the public. 6. There is a need to explicate the process in allowing people to get involved in carrying out tourism co-development, decision-making, problem-solving, creative knowledge and expertise sharing in conjunction with the use of appropriate technology, and support to monitor the performance of the organizations and their related staff members. 7. The people or communities develop their capacity to manage and control the use and distribution of resources and production factors that exist in their communities for economic growth and good social living with dignity. Participation of the public sector should be in the area of building awareness and encouraging the use of local wisdom for the local communities to reach sound and practical decision for their own benefits. The government or public sector should only take a scaffolding role in giving support for social and economic development--not dealing with direct or indirect exploitation in all forms that would affect tourism operations of the communities.

7. Discussion and Conclusion

The results on *economic benefits* point to income from tourists coming in the local communities. Tourism business operations range from cruising tours on the Dam, rafting, paddling, cave visiting, fishery and feeding fish tours, and seeing the morning mist tours, to accommodations, restaurants, and souvenirs. These bring all good income to people in the communities nearby Ratchaprapa Dam. The word of mouth has spread reputation of the Dam as a major tourist attraction in the South of Thailand (Seniwong, 2014; Janchai, 2016). Tourists sharing their comments and pictures online attract both local and foreign tourists. Undeniably, social media plays an important role in today's communication, and tourists rely on online sources for their choice of their planned travel.

Social benefits involve people in the communities taking care of tourist attractions and tourists' safety, and in turn feeling a sense of solidarity among the community members. The communities therefore need access to electricity for various hotels and accommodations. Friendliness and warm hospitality from people in the area create a sense of safety for incoming tourists, and help the local people to earn income from small tourism businesses. Social problems, such as drug and subservient livings have declined to a great extent, as observed and commented by all parties concerned (Janchai, 2016; Ministry of Tourism and Sports, 2016). This was the former case with tourism safety management of Hua Hin District, Prachuap Khiri Khan Province in that the guidelines for tourism safety must arise from the strong cooperation of all stakeholders concerned--government, private sectors, local communities, and tourist authority offices. *Tourism safety management* requires (1) enforcing laws and imposing penalties for offenders seriously, (2) developing safety and sanitation systems in tourist destinations, (3) coordinating and cooperating among agencies, (4) having good, professional guides for tourists, (5) improving the quality of transportation, (6) developing mechanisms and methods for receiving incident reports, (7) developing the work system by the government sector, and (8) solving problems of deception and exploitation of tourists (Ministry of Tourism and Sports, 2016, 2017a).

Tourism safety management also requires coordinating functions and responsibility from the private sector and the community. Ministry of Tourism and Sports (2016, 2017a) specifies functions and responsibility clearly. Functions for *the private* sector are (1) strictly abiding by law, (2) coordinating with government agencies, (3) improving the standard quality of tourist attractions and establishments, (4) improving the quality of personnel, (5) having systems for surveillance and security, and (6) having keen awareness for sustainable tourism. *The community* has duties of (1) helping monitor various risks, (2) reporting relevant risks to responsible government officials, and (3) assisting tourists in times emergency or natural disaster. Tourists themselves have duties: (1) being aware of potential dangers and (2) familiarizing themselves with information about destinations to visit (George, 2003; Community Strengthening Bureau of Sufficiency Economy, 2011).

Environmental benefits at Ratchaprapa Dam are abundant regarding alleviation of flooding and generation of hydro-powered electricity. In particular, irrigation for plant cultivation in the vast plain of Tha Khun Subdistrict in Khiri Rat Nikhom District and Phunphin District can support off-season plant cultivation and rice farming by using water from the Dam. In addition, the Dam's reservoir makes possible freshwater fishery as well as a new tourist attraction for the community in that area.

Management benefits involve people's participation in planning for operations and responsible persons in charge. Included are budget allocation, assessment, and tourism-related reporting (George, 2003). The tourism industry needs to promote and train people in the communities to provide tourism products and services efficiently. The community members with keen awareness of economic benefits from tourism have developed a sense of pride in the community identity, and therefore helped each other to prevent drug-related crimes

(Seniwong, 2014; Janchai, 2016). Community members currently tend to put long-term benefits before the short-term ones. Leadership of community leaders links local benefits to the national development policy in that planning and managing of various tasks with specific duties and responsibilities result in effective monitoring for follow-ups and evaluation. It is without doubt that all kinds of benefits derived from sustainable tourism at Ratchaprapa Dam cannot do without the consistent work process, effective management, and coordination/ cooperation from all stakeholders concerned (Steering Subcommittee of Sufficiency Economy, 2015; Ministry of Tourism and Sports, 2017a).

As seen in the interview results and discussion of the obtained findings, it was clear to the researchers that members of the communities in the Dam's areas have gained a great deal of benefits—be it economic, social, environmental and managerial. *Limitations of operations* on tourism products and services seemed to lie in after-operation assessment to provide feedback for further improvement. The interviewed participants did not pinpoint severe problems or obstacles in their tourism operations, most probably due to their rather effective problem-solving skills in good coordination and cooperation. The researchers, however, felt that the area of assessment for follow-ups and evaluation would be worth further exploration to make a complete picture of the communities' participation for benefits from sustainable tourism at Ratchaprapa Dam.

8. The Authors

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A Study of Guidelines for the Development of School Botanical Gardens in Prachuap Khiri Khan Province

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Abstract

This research aimed to study the current conditions and management of botanical gardens in schools in Prachuap Khiri Khan Province, and to develop guidelines for the effective operational methods of the school botanical garden in Prachuap Khiri Khan Province. This research used both quantitative and qualitative methods. The subjects were 400 students selected by multi-step random sampling from eight schools in Prachuap Khiri Khan Province. They were to provide quantitative data by responding to the questionnaire. The total of 38 subjects—18 executives, teachers, and 20 experts--gave qualitative data by semi-structured interview. Quantitative data were analyzed by frequency, percentage, mean, standard deviation, t-test value, F-test, and qualitative data by content analysis. The results of the study revealed the highest demand of school botanic gardens in four areas: (1) more plants in a botanical garden, (2) clear signboards on plants for visitors, (3) appropriate classification and grouping of plants by region, and (4) sitting or resting areas. The interview results highlighted a need for a management for the school botanical garden in four aspects: (1) plant management in the garden, (2) administration of the botanical garden area, (3) utilization management, and (4) facilities for botanical garden school administration. The obtained findings were to generate guidelines for the development of botanical gardens to suit schools in three aspects: (1) resource, (2) utilization, and (3) creation of awareness.

Key words: Development guidelines, school botanical garden,gardent administration,
Prachuap Khiri Khan Province

1. Introduction

Rajamangala University of Technology Rattanakosin (RMUTR) is one of the agencies participating in the Plant Genetic Conservation Project under the Royal Initiation of Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG). The five-year master plan (2016-2021) and the participatory process of the participating agencies were to conserve and develop plant genetic resources of the country to be sustainable heritage and raise the public's awareness of plant genetic conservation. In putting projects and activities into reality, those agencies in charge have integrated botanical garden projects into school planning and administration. In this regard, Rajamangala University of Technology Rattanakosin has campaigned and promoted activities in the form of youth and general public training programs for the conservation of local plant genetic resources (Simachokdee, 2002). The University has followed some royal ideas on plant genetics conservation, particularly on teaching and training children to be conscious of the conservation

of plants and enjoy the beauty of nature and gardening work. This is also to help school children to understand the significance of plant conservation while reducing stress experienced in school life and demands from family (Crane, et al., 2009; Chinariyarit et al, 2017).

2. School Botanical Garden Project

"School Botanical Garden" is one of the activities meant to conserve plant genetics by exposing the youth to the flora and beauty of nature in support of further conservation of plants in the school garden area. The school botanical garden project can be used as part of learning subjects in the basic education curriculum (Ruangdetsakul, 2009; Naksen, 2013). It houses a collection of living plants, stores information on plants, and supports continuing education. Samples of dry, local plants are collected and planted in the school. Students will do local wisdom report recoded plant data and their new learning knowledge. There is a study corner for teaching and learning media in various subjects in accordance with local conditions. The botanical garden project brings awareness to students not to violate nature and to be ready for volunteer work in public interest (http://www.rspg.or.th/botanical_school/school_bot_11.htm: Retrieved January 12, 2019).

The school botanical garden project in Prachuap Khiri Khan Province had nine schools: (1) Wang Klai Kangwon School, (2) Ban Madue Thong School, (3) Ban Thung Yao School, (4) Ban Tha Kham School, (5) Ban Suan Luang School, (6) Ban Klong Loi School, (7) Ban Nonghoi School, (8) Prachuap Wittayalai School (Muang District), and (9) Ban Khao Chao Border Patrol Police School. The participating schools were able to carry out the project on their own, but were not systematically evaluated to what extent their project operation met the criteria of the Plant Genetic Conservation Project under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG). As kown, there have been questions about the development and strengthening of operational facilities to be utilized in raising awareness of plant genetic conservation, and enhancement of the learning process of natural resources. In addition, people queried about management efficiency through participation of all departments and personnel in particular schools. In their views, there could be limitations arising from the lack of readiness of personnel in the project operation, and the lack of integrative knowledge and expertise in plant species analysis. For all these issues mentioned above, the researcher felt the urgent need to investigate the project's administration with a review on the management model of botanical gardens used in schools in Prachuap Khiri Khan Province. The researcher would seek both quantitative and qualitive data. It was expected that the obtained information can serve as as a guideline for the schools participating in the botanical garden project to operate their school's botanical garden effectively, and expand the project's operation to other external communities to help conserve local plant genetics nationwide.

3. Research Objectives
   The study had three objectives:
        1. To identify the current condition and existing problems in the operation of the school botanical garden in Prachuap Khiri Khan Province.
        2. To study the operational administration of the school botanical garden in Prachuap Khiri Khan Province
        3. To create a guideline for the management model of the school botanic garden in Prachuap Khiri Khan Province for efficiency in operations.

4. Research Methodology
        4.1 The Participants
        The population used in this research were administrators, faculty body and students at nine schools operating a botanical garden in Prachuap Khiri Khan Province.
        The participants providing quantitative data were students at eight schools operating a botanical garden in Prachuap Khiri Khan Province. For the sample group, the researcher used the formula after Nara Srivaiwanichkul And Chusak Udomsri (2009).

$$\frac{P(1-P)Z^2}{e^2}$$

Which assigned	n	=	Sample size
	P	=	Proportion of the population for radomizing
	Z	=	Confidence level set by the researcher
	e	=	Expectation value

        The researcher determined the confidence value at 95% with 5% anticipation. The number of samples calculated was 380.16 people, but in this study, the researcher assigned a sample of 400 people using a multistage sampling method of random sampling. The researcher used three steps as follows.
        Step 1: Determined the area for the research by selecting the specific area of Prachuap Khiri Khan Province which consists of eight districts, namely Muang District, Kuiburi District, Thap Sakae District, Sam Roi Yot District, Pranburi District, Bang Saphan District, Hua Hin District, and Bang Saphan Noi District.
        Step 2: Drew a lottery for nine schools in Prachuap Khiri Khan Province to collect quantitative data .
        Step 3: Divided the proportion of the sample group in each district to obtain the sample group in eight schools, 50 students, totaling 400 people by the simple random sampling method.
        As for the participants to provide qualitative data, the researcher used a convenience sampling method to obtain:
            (1) Eighteen administrators and teachers in schools operating the botanical garden in Prachuap Khiri Khan Province, and

(2) Twenty experts in botanical garden.

4.2. Research Instruments

The quantitative research had three parts:

Part 1 on the participants' general information on gender, age, education level, purpose of using the school botanical garden, and influencing persons on the use of the school's botanical garden.

Part 2 on the participants' viewpoints on the needs of the operation of the botanical garden management in schools in Prachuap Khiri Khan province on the scale of 1-5 with the following scoring criteria:

Score	Level of need
5	most
4	very
3	moderate
2	low
1	very low

The researcher set the interval of scores as follows:

Interval score	Level of need
4.51-5.00	most
3.51-4.50	very
2.51-3.50	moderate
1.51-2.50	low
1.00-1.50	very low

Part 3 on the participants' other suggestions.

The qualitative part gathered information from documents and research papers related to the operation of the botanical garden, and semi-structured interview questions to collect data on the operation of the botanical garden in eight schools in Prachuap Khiri Khan Province.

4.3. The Research Instrument contruction

The researcher used five steps in constructing the instruments to collect quantitative and qualitative data as follows:

1. Studied information from books, documents, concepts, theories and related research create the questionnaire to cover research objectives.

2. Created the questionnaire and consult with experts in verifying coverage and content validity and adjusting the questionnaire as suggested for the final version.

3. Calculated the confidence value of the questionnaire.

4.4. Instrument Quality Testing

The researcher used three experts in botanical garden to verify consistency of the research objectives, and calculated consistency value (Item-Objective Congruence Index: IOC) of the questions used between 0.60 - 1.00, as the quality criteria for data collection.

For the confidence level of the questionnaire, the researcher tried the questionnaire with a group of 30 students in the area, with the same characteristics as the sample group. The confidence value of the whole questionnaire was at 0.887.

5. Data Collection

The researcher collected both quantitative and qualitative data in the following steps:

5.1 Collected from primary sources by interviewing school administrators, teachers, experts in botanical garden, and some students in schools in Prachuap Khiri Khan Province.

5.2 Collected from secondary sources by studying documents, and research theories related to school botanical garden work.

This study used both quantitative and qualitative data for a complete picture of the operation of the botanical garden project in Prachuap Khiri Khan Province.

6. Statistics Used in Data Analysis

The researcher used both descriptive abd inferential statistics to analyze quantitative and qualitative data as follows:

1. Used descriptive statistics to analyze quantitative data by frequency, percentage, mean and standard deviation to describe the needs of those involved in the administration of the botanical gardens in schools in Prachuap Khiri Khan Province.

2. Used inferential statistics with the data in the questionnaire parts 1 and 2 to compare differences between the means of two independent sample groups. The researcher tested the value of t (Independent Sample t-test) for testing the gender hypothesis. Differences were compared between two or more samples using ANOVA one-way analysis of variance.

7. Research Conceptual Framework

The researcher used methods of both quantitative research and qualitative research. The researcher established a conceptual framework as a guideline in the study as follows.

Figure 1: Research Conceptual Framework

Quantitative data (Quantitative Data) General characteristics of respondents. 1 Gender 2 Age 3. Education Level 4. Cumulative GPA 5. Purpose of using the school botanical garden 6. People who influence the access to the school's botanical garden.	Operating conditions of the botanical gardens in schools in Prachuap Khiri Khan Province area (1) General condition (2) Current problems (3) Implementation of standards (4) Development of standards (5) Solutions to improve operations and Management
Qualitative data (Qualitative Data) 1. Standards of botanical gardens, schools of RSPG in 4 aspects (1) Operating standards (2) 5-component learning management standards (3) Training standards (4) Measurement and implementation standards 2. Development standards for the Porian Botanical Garden of the DEPO 4 sides (1) Management of plants in the garden (2) Management of the botanical garden area (3) Utilization management (4) Facilities	Opinion of experts in gardening School Botany (1) Operational Standards (2) Learning Management Standards (3) Training Standards (4) Evaluation and Implementation (5) Management Problems and Obstacles (6) Pathway Development Guidelines botany Suitable school
	Guidelines for the development of botanical gardens in schools in the district Prachuap Khiri Khan Province

8. Data Analysis and Research Results

The researcher followed the study conceptual framework shown in Figure 1 and analyzed the obtained data in response to the research objectives. The results of data analysis were divided into four parts.

8.1. **Part 1.** The researcher reported the results of the qualitative data analysis from the interviews.

8.1.1. General Condition of School Botanical Garden

8.1.1.1. Number 9 provincial school [Ban Khao Chao Border Patrol Police School] in Prachuap Khiri Khan gave preliminary information on its botanical garden within school under the RSPG guidelines.

8.1.1.2 The school has managed the botanical garden continuously since 2016. In the past, a small botanical garden was built and developed for students and school personnel to learn that the size and suitability of the botanical garden in the early stage.

8.1.1.3 The administration and system of the botanical garden have been designed to meet the main objectives of the operation. Arranged by the RSPG guidelines were a building for learning, plan for visitors, labels for flowers, ornamental plants and perennials in the gardens. Thai names, official English names and the birthplace-based names were used to create long-term recognition and knowledge of people who visit the school's botanical garden.

8.1.1.4 There was an operation of the botanical garden within the school on the basis of a short-term, medium-term and long-term program having been established. Such planning was in conjunction with the Ministry of Education's basic education curriculum management.

8.1.2. Existing Problems of School Botanical Garden

8.1.2.1 Procurement of rare plants or local plants grown in schools may not be comprehensive due to limited personnel of the school.

8.1.2.2 The scope and size of the school may require proper management of the botanical garden.

8.1.2.3 Lack of plant family analysis expertise and lack of readiness of some personnel in terms of understanding of the project's significance.

8.1.2.4 Not up to expected standards of school botanical garden by the RSPG guidelines

8.1.2.5 Other problems related to budget, some personnel's cooperation, maintenance of water and fertilizer, adjustment of school layout and landscape, and some limitations of the project being integrated into the main instruction of the basic education curriculum.

8.1.3. Guidelines for the Standard Development of the School Botanical Garden

According to experts, the guidelines for the development of school botanical gardens include operation methods and procedures, and pattern of management in accordance with the master plan of RSPG on (1) resource framework, (2) utilization frameworkand, and (3) creating awareness framework.

8.2. Part 2. The researcher reported the results of the quantitative data analysis from the questionnaire on the need for the operation of the botanic garden management in schools in Prachuap Khiri Khan Province as shown in Table 1.

Table 1: Results on the Need for the Administration of Botanical Garden in Schools in Prachuap Khiri Khan Province

Item	Needs for Operation of Botanical Garden Management in Schools in Prachuap Khiri Khan Province	$\bar{x}$	SD	Level of need	Rank
1	Management of plants in the garden	4.03	0.59	very	4
2	Administration of the botanical garden area	4.09	0.61	very	3
3	Utilization management	4.32	0.57	very	1
4	Facilities	4.27	0.46	very	2
	Total	**4.18**	**0.40**	**very**	

Table 1 reports the overall demand for botanical garden management in schools in Prachuap Khiri Khan province at a high [very or much needed] level ($\bar{x} = 4.18$, S.D. $= 0.40$). The four items reveal high [very or much needed] levels accordingly: utilization management ($\bar{x} = 4.32$, S.D. $= 0.57$), the facilities ($\bar{x} = 4.27$, S.D. $= 0.40$), the administration ($\bar{x} = 4.09$, S.D. $= 0.61$) and the management of plants in the garden ($\bar{x} = 4.03$, S.D. $= 0.59$).

8.3. Part 3. The researcher reported the results of comparison of the needs for the implementation of botanical gardens in schools. Table 2 shows four items [reported earlier in Table 1] were significantly different from each other at the level 0.05.

Table 2: The results of the comparison of the needs of the administration of the botanical garden in schools in Prachuap Khiri Khan Province

Source of Variance	SS	df	MS	F	Sig
Management of plants in the garden					
Between groups	6.934	3	2.311	6.830	0.000
Within the group	134.009	396	0.338		*
Total	140.942	399			
Administration of the botanical garden area					
Between groups					
Within the group	50.195	3	16.732	64.688	0.000
	102.425	396	0.259		*
Total	152.620	399			
Utilization management					
Between groups	58.580	3	19.527	102.564	0.000
Within the group	75.392	396	0.190		*
Total	133.972	399			
Facilities					
Between groups	65.715	3	21.905	389.308	0.000
Within the group	22.281	396	0.056		*
Total	87.996	399			
All items included					
Between groups	26.831	3	8.944	93.519	0.000
Within the group	37.871	396	0.096		*
Total	64.702	399			

8.4. Part 4. The researcher reported the results as related to the guidelines for the development of botanical gardens for schools in Prachuap Khiri Khan Province on the following points:

1. Administration of the botanical garden was to integrate the project into activities in different learning groups by using the standard format of RSPG program activities (Chen & Sun, 2018).

2. The project was to include student needs in developing their school botanical gardens as pertinent to the local area or community by (1) bringing ornamental plants to plant in botanical gardens, (2) providing appropriate signs and labels for plants and their positions, (3) arranging sitting or resting areas for visitors, and (4) sequencing and classifying plants by group or region.

3. The project was to integrate its contents and activities into the basic education curriculum with emphasis on learning resource, community development, and environmental conservation (Pholsri, 2004).

9. Discussion of Results and Conclusion

From the results of the study reported in Section 8 above, it is worth mentioning that the bonatical garden project in fact aims at educating visitors with knowledge of local and rare plants to value their natural treasure and environment and create long-term recognition (Richard et al., 2009). In particular, the school is expected by RSPG guidelines to take into account the integration of teaching and learning science, effective management of the botanical garden in the school, and the development of environmental science learning resources for the community (Pholsri, 2004).

The information on demand development of school botanic gardens in Prachuap Khiri Khan Province shows that students who are studying at different grade levels of both junior and senior high schools were positive to the implementation of the project. They required effective management approach to make it acceptable for students' appreciation, as earlier reported in the work of Techakomol (2015). In this regard, the schools with such a project looked for a good management model of the botanical garden project to adopt and modify to suit their school context. From the interview data, Kaeng Nuea Pittayakom School Ubon Ratchathani Province could serve as a good model on the basis of high satisfaction of students, school personnel and stakeholders involved.

As for people who could influence the implementation of the botanical garden in schools in Prachuap Khiri Khan Province, this issue could vary with different students' characteristics, behaviors and their assigned duties in the botanical garden area. The project supervisor or the leading teacher as well as botanical garden experts could inspire students with a sense of pride and social responsibility for their national treasure, specific challenging assignments, and good peer interactions while working on the project, as earlier emphasized by Patcharakul (2014). The method of project assessment in teaching and learning could be

in the form of school activities used at Thairath Wittaya School 23 (Wat Khok Node, 2013) in Academic Year 2013.

The study found that the preparation and use of teaching plans, teaching media, and learning resources could improve the teaching quality for the botanical garden activities at Thairath Wittaya School 23. It should be noted that the teaching behavior of teachers before and after the project was of prime importance as it affected the students' academic achievement as well (Wat Khok Node, 2013).

The researcher considered the evaluation model as vitally important to enable the schools and concerned stakeholders in the community to understand the value of the botanical garden project and the schools' efforts in implementing the project. This can lead to continuous improvement and result in long-term benefits for students. This is in accordance with the research of Tiangsakul et al. (2016) who discussed the model for the evaluation of the school botanical garden project and proposed garden development in the discipline of Botany in the form of a sustainable learning life science center.

10. Research Recommendation

Based on the obtained findings, the researcher would like to suggest a careful planning for suitable number and diversity of plants inthe school botanical garden so that sufficient care could be efficiently handled by those assigned students and teachers in particular schools. As for visitors or community frequenters, the schools could arrange for visit hours and responsible personnel to supervise the botanical garden tour, and feedback form could be used by visitors for the schools to receive relevant feedback for improvement in services.

As for facilities for visitors as mentioned in the questionnaire and interview data, the schools might have to handle a reasonable budget as well as seek help and advice from the communities concerned. This could be done with small group discussions with community leaders, relevant stakeholders, school administrators, teachers, and students to find suitable solutions in particular school contexts. The researcher would recommend further research into effective or challenging activities in the botanical garden project as well as the assessment or evaluation methods for various aspects of the project's operations.

11. Acknowledgment

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Forecasting Future Tourism Market Trends

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Abstract

It has been recognized among countries that tourism stands as an important hospitality industry for bringing in a good amount of revenue for national development. Since competition in this industry is fierce, host countries need to use information technology to operate effectively in the tourist market. In particular, forecasting future travel market trends serves as an important tool to differentiate tourism products and services while creating future product value. Based on this marketing scenario, the researcher aimed to explain and justify the need to forecast future tourism market trends. The researcher used a bilingual online survey questionnaire on 15 variables to collect data from 1,600 Thai and foreigner participants. The 5-level estimation questionnaire was tested for IOC at .765 which was considered appropriate to create an online bilingual questionnaire via the Google program. The results from the survey analysis revealed positiveness in future tourism market trend factors and consumer behaviors.

Keyword: *Trend forecast, tourism market factors, future tourist market trends, hospitality industry*

1. Introduction

All countries have generally aimed at tourism in the hospitality industry as an economic tool with a profound impact on the country's development. Each country wants to attract a large number of tourists by promotional activities. They have taken the promotion of tourism seriously and implemented a variety of promotion mechanisms for more tourists all year round. As known, tourism has become the world's largest industry which has been expanding rapidly worldwide. The World Tourism Organization (2001) with its 2020 vision reported about 500 million people traveling to Europe and the Pacific, the Middle East and Africa each ear. The forecast shows that regions with high tourism growth include Asia Pacific, China, India, the Middle East and Central Europe. In Russia and Latin America, tourists traveled within the region; intra-region tourists counted 1200 million people and about 378 million people were long haul tourists (Agenda 21 for the Baltic Sea Region, 1998; World Tourism Organization, 2001).

With the reported statistics of the number of tourists worldwide, acceleration of the number, particularly as supported by information communication technology, would be possible in sight. Information communication technology has been used by countries to compete in the tourist market by creating value for future products and boosting the demand for tourism and leisure. All countries have been well aware of the fierce competition and tried to campaign quality travel plans and packages to potential customers. These plans and packages are catered for the needs and preferences of tourists for pursuit of knowledge, experience, way of life and culture (Oliveira, Araujo & Tam, 2019). Those people involved in the tourism industry try

to find ways to accommodate their customers from different economic, social and cultural backgrounds who are diverse in behaviors related to or preferences for consumption of tourism goods and services. Taken into consideration are five known factors: economic, social, technological, biological and political (Buhalis & Amaranggana, 2015; Monphan, 2016).

2. Literature review

2.1. Situation of the Tourism Industry in Thailand

The tourism industry or the service sector plays an important role in the economy of Thailand. It has generated income as number one value of the total trade in services while supporting other related businesses, such as hotels and local accommodations. Restaurants, souvenir shops and transportation services have become part of investments in foreign currency of hundreds of billion baht per year. Domestic circulation flows from Thai people traveling in the country counted as hundreds of million baht in 2009; the country had income from foreign tourists of about 527,326 million baht or about 8.5 percent of the total export value (51% of the export value of the service sector or approximately 5 percent). Tourism accounted for more than 2 million people, or 6-7 percent of the entire workforce. It has helped distribute income and employment to rural areas. The revenue has also contributed to the trade deficit during the time of Thai exports being slowed down in line with the world economy. Obviously, in making a plan for effective tourism, the country must provide sufficient infrastructure as a strong foundation for the tourism industry (Monphan, 2016; Almuhrzi & Al-Azri, 2019).

2.2. Changes in Tourist Behaviors

Changes in tourist behaviors have been reported in the tourism literature in five areas (Agenda 21 for the Baltic Sea Region, 1998; Boley & Green, 2016) as follows:

(1) Consumer behavior changes according to economic conditions caused by economic downturn--resulting in tourists being cautious about the value for money. In particular, competitors have turned to price strategies to survive in the shrinking tourist market. This triggers the so-called *last minute behavior* that affects booking/ purchase of travel products and services for greater value.

(2) Tourists currently prefer to travel short distances. They may choose to travel more in the same country or within the same region. This has prompted various economic activities being integrated into tourism in a cooperation framework.

(3) Tourists tend to choose special interest tourism, such as health tourism, adventure tourism, sport tourism, and conference and exhibition tourism. Such a form of tourism focuses on learning experiences.

(4) Tourists' caring about health and exercise creates health tourism and sport tourism, as seen in countries providing health or treatment packages as well as organizing sport events. Thailand is one of the countries well equipped with facilities and services in organizing international sport events.

(5) Tourists' interest in social, cultural and environmental preservation traditions is gaining popularity in tours related to sustainable development in specific areas. This new trend is inevitably transforming tourism into a new dimension of service management that emphasizes nature and scenery as tourism products (Agenda 21 for the Baltic Sea Region, 1998; Boley & Green, 2016).

2.3. Future Tourism Trends

The tourism literature reports future tourism trends as follows:

- Obligation travel group is considered a future trend in tourism. Obligatory tourists refer to those who need to travel to carry out necessary activities, such as business transactions and negotiations, religious events, festivals, and weddings. They travel with a clear purpose and tour organizers need to arrange for other needed activities outside of the main activity, particularly visiting important tourist attractions.

- Ethical traveler groups refer to travelers with a focus on ethics. They pay attention to the surrounding environment, the environmental impact, the amount of carbon dioxide emitted by air travel. These concerns directly affect this group of tourists. Most travel plans focus on the nature of tourism for community service in the form of volunteer work or participation in reality activities.

- Simplicity attracts travelers who avoid the hassle of managing their trips, and prefer convenience provided by their travel agencies for touring arrangements. They tend to use travel agency services for various tour packages of their choice.

- Tourists who seek a life reward are those travelers who pursue a life reward from work by indulging in luxury products as well as services for relaxation and better health.

- Tourists seeking cultural differences are those who take the opportunity to travel to discover new cultures different from their own. These travelers are looking for new experiences as inspiration in life.

- Tourists seeking outstanding social presence are those travelers who seek prominence in society. They want to share their travel experiences via social media to showcase a classy travel experience. They also seek acceptance and praise from the surrounding society.

(Buhalis & Amaranggana, 2015; Monphan, 2016; Almuhrzi & Al-Azri, 2019).

3. Research Objective

This research was to identify by the survey method, factors that forecast future tourism market trends.

4. Research Methodology

This research used a survey questionnaires on 15 variables to collect data from 1,600 Thai and foreign participants on a voluntary basis. The researcher used a quantitative research method. The researcher tested the constructed questionnaire for IOC at .765. The tool was therefore considered appropriate for data collection in Thai and English (See 15 variables in Table 1). The bilingual questionnaire was used to collect data online via the Google program.

5. Results of the Study

It was found from data collection that the respondents were male (670 or 41.9%) and female (930 or 58.1%). The respondents' salary data were: 334 (20.9%) earned more than 55,000 baht; 498 (31.1%) between 45,001-55,000 baht; and 387 (24.2%) between 30,001-45,000 baht; 381 (23.8%) between 15,000-30,000 baht.

As for the nationality variable, there were 877 (54.8%) Thai respondents, and 723 (45.2%) foreigners.

Table 1: Results of Responses to the Questionnaire in 15 Variables

Variables or Issues	Statistical Analysis				
	$\bar{X}$	SD	β	t	Sig
Social factors. Most of the population has higher education. There is a better standard of living. Having less working hours. Giving more time to travel	4.433	0.640	.007b	.261	.794
Economic factors. More competition for tourism causing the prices of travel products and services to be lower and tourists have high expectations for tourism services. There are more bargains.	4.401	0.454	-.007b	-.268	.789
Technological factors. The rapid development of communication technology has resulted in quick and easy access to information that helps in planning travel.	4.363	0.454	-.016b	-.623	.533
Biological factors. The integrity of nature is of great added value. Future travelers will be looking for sustainable and environmentally responsible destinations.	4.347	0.466	-.008b	-.300	.764
Political factors. The high rate of terrorism has led to tourists mistakes, worries and a feeling that the safety of traveling is less.	4.366	0.466	.044b	1.737	.083
Taking into account the value of money. The more concern with money, the more last minute thinking before the trip to decide on the booking/purchase of travel products and services in order to get the best value.	4.336	0.471	.045b	1.799	.072
Short distance travel. They may choose to travel more in the same country or within the same region.	4.382	0.481	.013b	.522	.602

Interested in tourism in a special interest (Special Interest Tourism), such as health tourism, adventure tourism for conferences and exhibitions and sports tourism.	4.387	0.454	.062b	2.480	.013
Social and environmental responsibility. Preservation of original cultural traditions is gaining popularity with tourists.	4.434	0.458	.046b	1.794	.073
The group travels to carry out the necessary activities.	4.385	0.474	.015b	.588	.557
Groups that need convenience from the source.	4.364	0.486	.007b	.272	.786
Groups concerned with environmental factors and ethical planning in tourism.	4.327	0.486	.001b	.036	.971
Groups rewarding themselves for work.	4.391	0.472	.021b	.845	.398
Groups seeking to discover new cultures which are different from what is familiar.	4.406	0.452	.023b	.923	.356
Popular groups sharing travel experiences through social media and wanting to be accepted.	4.443	0.438	.043b	1.706	.088

The researcher found from Table 1 that the future tourism market trends could lie in (1) *Popular groups sharing travel experiences through social media* (Mean = 4.443, S.D. = 0.438) and (2) *Groups seeking to discover new cultures which are different from what is familiar* (Mean = 4.406, S.D. = 0.452), and (3) *Social and environmental responsibility for preservation of original cultural traditions* (Mean = 4.434, S.D. = 0.458).

When considering the mean and standard deviation of future tourism market trends, the researcher found the results in Tables 2-3.

Table 2: Results of Model Summary

Model Summary					df	F	sig
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
Thai tourists	.089a	.008	.007	.497	1	12.87	000 **
Foreign tourists	.109b	.012	.011	.496	2	9.53	.000 **
a. Predictors: (Constant), Behavior 4.							
b. Predictors: (Constant), Behavior 4, Behavior 3.							

Regression equation analysis was performed to analyze the feasibility of the future tourism trends which turned out positive. Thai tourists are valuable (R square. = .089) and foreign tourists (R square =.109). However, the values for both groups by R square were low, probably due to general human behavior prediction.

Table 3: Results of Correlations

		Nationality	Factor 1	Factor 2	Factor 3	FactoR 4	FactoR 5	Behav 1	Behave2	Behave3	Behave 4	Behave 5	TRavel 1	TRavel 2	TRavel 3	TRavel 4	TRave l5	TRavel 6
Pearson Correlation	Nationality	1.000	.012	.001**	-.006**	.007**	.058*	.054*	.026*	.069	.097	.059*	.033*	.013	-.005**	.023*	.026*	.048*
	Factor 1	.012	1.000	.120	.210	.052*	.071	.027*	.086	.040*	.058*	.102	.102	.038*	.027*	.058*	.050*	.039*
	Factor 2	.001	.120	1.000	.107	.178	.021*	.084	.058*	.152	.080	.122	.097	.076	.034*	.027*	.044*	.021*
	Factor 3	-.006	.210	.107	1.000	.046*	.121	.010**	.136	.084	.105	.121	.089	.109	.052*	.024*	.048*	.032*
	Factor 4	.007	.052	.178	.046	1.000	.028*	.201	-.009**	.140	.132	.148	.110	.086	.010**	.041*	.059*	.062
	Factor 5	.058	.071	.021	.121	.028	1.000	.086	.153	.033*	.160	.140	.135	.122	.029*	.032*	.011**	.009**
	Behavior1	.054	.027	.084	.010	.201	.086	1.000	.103	.206	.104	.190	.102	.085	.026*	.057*	-.004**	.025*
	Behavior2	.026	.086	.058	.136	-.009	.153	.103	1.000	.160	.165	.042	.084	.080	.088	.067	.058*	.033*
	Behave3	.069	.040	.152	.084	.140	.033	.206	.160	1.000	.096	.156	.068	.067	.136	.054*	.054*	.022*
	Behavior4	.097	.058	.080	.105	.132	.160	.104	.165	.096	1.000	.217	.148	.080	.029*	.068	.037*	.060
	Behavior5	.059	.102	.122	.121	.148	.140	.190	.042	.156	.217	1.000	.150	.113	.006**	.041*	.020*	.054*
	Travel 1	.033	.102	.097	.089	.110	.135	.102	.084	.068	.148	.150	1.000	.135	.107	-.001**	.050*	.072
	Travel 2	.013	.038	.076	.109	.086	.122	.085	.080	.067	.080	.113	.135	1.000	.056*	.020*	-.024*	.058*
	Travel 3	-.005	.027	.034	.052	.010	.029	.026	.088	.136	.029	.006	.107	.056	1.000	.116	.057*	.070
	Travel 4	.023	.058	.027	.024	.041	.032	.057	.067	.054	.068	.041	-.001	.020	.116	1.000	.121	.113
	Travel 5	.026	.050	.044	.048	.059	.011	-.004	.058	.054	.037	.020	.050	-.024	.057	.121	1.000	.118
	Travel 6	.048	.039	.021	.032	.062	.009	.025	.033	.022	.060	.054	.072	.058	.070	.113	.118	1.000

** Statistically significant at the .01 level.

 * Statistically significant at the .05 level.

5.1. Variables for Correlation Analysis

The researcher earlier listed 15 variables as shown in Table 1 and added one more variable *Behavior 4 = Health-conscious and tourist-conscious*, labeled as Variable 9 in Table 3 on Correlation Analysis as shown below.

1. Factor 1 = Social Factors. Most respondents have higher education and a better standard of living. They have less working hours and give more time to travel and pay more attention to the environment. This includes mental relaxation from the stressful routine of work or social conditions. Moreover, their increased awareness of ethics and morality will have an effect on tourist attractions; tourists will not tolerate animal torture and unfair use of labor of women and young children.

2. Factor 2 = Economic factors. More competition in tourism causes the prices of travel products and services to be lower and tourists have high expectations of tourism services. There are more bargains. Tourists have been looking for cheaper and good quality options.

3. Factor 3 = Technological factors. The rapid development of communication technology factors has resulted in quick and easy access to information that facilitates travel planning, such as travel reservations, airfare, rental cars, trains, hotels and other destinations. Tourists tend to travel on their own.

4. Factor 4 = Biological factors. The integrity of nature is of great added value. Future travelers will be looking for sustainable and environmentally responsible destinations. Inevitably, tourist attractions have to be rich in nature to gain popularity.

5. Factor 5 = Political factors. The high rate of terrorism has led to tourists' unintentional mistakes, worries and a feeling that the safety of traveling is not sufficient.

6 . Behavior 1 = Considering more value for money. Tourists' last minute behavior to decide on booking/ purchasing of travel products and services.

7. Behavior 2 = Taking short distance travel. Tourists may choose to travel more in the same country or within the same region.

8. Behavior 3 = Interested in special interest tourism. Special Interest Tourism focuses on health, adventure, conferences, exhibitions, and sports. Tourists want to learn and gain new and different experience in each tour.

9. Behavior 4 = Health-conscious and tourist-conscious. Tourists are interested in body exercise, health programs and sport competitions.

10. Behavior 5 = Social and Environmental Responsibility. Preservation of original cultural traditions is gaining popularity among tourists.

11. Travel 1 = Travel to carry out necessary activities.

12. Travel 2 = Need convenience from data source.

13. Travel 3 = Want to bring environmental factors and ethical planning in tourism.

14. Travel 4 = Want to reward oneself for getting a job done.

15. Travel 5 = Want to focus on finding new cultures which are different from what is familiar.

16. Travel 6 = Want to share travel experiences through social media and want to be accepted.

5.2. Correlation Coefficients between Independent and Dependent Variables

The researcher analyzed the tourism market trends by Pearson's Correlation Coefficient Analysis (Pearson's product-moment correlation) between factor variables, behavior variables, and tourism trend factors. As shown in Table 3, there were 13 pairs of variables with a correlation coefficient at the .01 level. The results are reported below:

1. Nationality relates to Economic factors showing more competition for tourism causing the prices of travel products and services to be lower and tourists have high expectations for tourism services. There are more bargains (R =.001, Sig = 0.001).
2. Nationality relates to Technological factors: communication technology has been rapidly developed, resulting in quick and easy access to information that helps in planning travel (R = -.006, Sig = 0.001).
3. Nationality relates to Biological factors. The integrity of nature is of great added value. Future travelers will be looking for sustainable and environmentally responsible destinations. (R = .007, Sig = 0.001).

4. Nationality relates to the need for convenience from the tourism service source (R =.013, Sig = 0.001).

5. Nationality relates to Environmental factors and ethical planning in tourism (R = -.005, Sig = 0.001).

6. Technological factors. The rapid development of communication technology has resulted in quick and easy access to information that helps in planning travel. This is associated with greater consideration for the value of money. Tourists' last minute behavior to decide on the booking / purchase of travel products and services is to seek value (R = .010, Sig = 0.001).

7. Biological factors. The integrity of nature is of great added value. Future travelers will be looking for sustainable and environmentally responsible destinations. Related to consumer behavior, changing conditions for tourists includes preference to travel for short distances. Tourists may choose more of *domestic travel or within the same region* (R = -.009, Sig = 0.001).

8. Biological factors. The integrity of nature is of great added value. Future travelers will be looking for sustainable and environmentally responsible destinations. This is related to the adoption of *environmental factors and ethical planning in tourism* (R = .010, Sig = 0.001).

9. Political factors. The high rate of terrorism has led to tourists' unintentional mistakes, worries and a feeling that the safety of traveling is not sufficient. This is related to finding *new cultures unfamiliar* (R = .011, Sig = 0.001).

10. Political factors. The high rate of terrorism has led to tourists' unintentional mistakes, worries and a feeling that the safety of traveling is not sufficient. This is related to *popularity of sharing travel experiences through social media and wanting to be accepted* (R = .009, Sig = 0.001).

11. Consumer behavior can be adjusted according to economic conditions. Coming from the economic downturn, tourists take into account the value of money for traveling experience in new cultures that are unfamiliar (R = .009, Sig = 0.001).

12. Social and Environmental Responsibility. Preservation of original cultural traditions is gaining popularity among tourists. This is related to *the environmental factors and ethical planning in tourism* (R = .006, Sig = 0.001).

13. Travel to carry out the necessary activities. This is related to *rewarding oneself for work* (R = -.001, Sig = 0.001).

5.3. Correlation Coefficients Statistically Significant at .05 Level

The results on Correlation Coefficients statistically significant at the .05 level are reported below:

1. Nationality correlates with political factors. The higher the rate of terrorist incidents, the more tourists feel less safe about traveling (R = .058, Sig = 0.005). Also statistically significant are: (1) Considering more value for money, last minute behavior to decide on booking/purchasing travel products and services to seek value (R =.054, Sig = 0.005); (2) Consumers' behavior has been adjusted according to the situation of tourists, preferring to travel in a short distance, which may choose more domestic travel or within the same

region (R = .026, Sig = 0.005); (3) Social and environmental responsibility--tradition preservation (R = .059, Sig = 0.005); (4) The original culture is gaining popularity with tourists (R = .033, Sig = 0.005); (5) Rewarding oneself for work (R = .023, Sig = 0.005); (6) Finding new cultures that are different and unfamiliar (R = .026 Sig = 0.005); and (7) Sharing travel experiences through social media and wanting to be accepted (R = .048 Sig = 0.005).

2. Social factors. Most of the respondents have higher education and a better standard of living. They work fewer hours and give more time to travel. Also statistically significant are: (1) Future travelers are looking for sustainable and environmentally responsible travel destinations (R = .052, Sig = 0.005); (2) Considering more value for money takes place, tourists show their last minute behavior to make decisions on reservation / purchase of tourism products and services to seek value (R = .027, Sig = 0.005); (3) Tourists tend to be interested in special interest tourism, health tourism and adventure tourism (R = .040, Sig = 0.005); (4) Interest in health and sport tourism (R = .058, Sig = 0.005); (5) The convenience of touring reservation services (R = .038 Sig = 0.005); (6) Ethical travel planning (R = .027, Sig = 0.005); (7)   Rewarding oneself for work done (R = .058, Sig = 0. 005); (8) Finding new cultures that are different and familiar (R = .050, Sig = 0.005); and (9) Sharing travel experiences through social media and wanting to be accepted (R = .039, Sig = 0.005).

3. Economic factors. More competition for tourism causes the prices of travel products and services to be lower and tourists have high expectations of tourism services. There are more negotiations in relation to political factors. Statistically significant variables are: (1) The higher the rate of terrorism incidents, the more travelers feel unsafe (R = .021, Sig = 0.005); (2) Tourists tend to travel in the same country or within the same region (R = .058, Sig = 0.005); (3) Ethical travel planning (R = .034 Sig = 0.005); (4) Rewarding oneself from work done (R = .027, Sig = 0.005); (5) Finding new cultures that are different and unfamiliar (R = 044, Sig = 0.005); and (6) Sharing travel experiences through social media and wanting to be accepted (R = .021, Sig = 0.005).

4. Technological factors in communication have been rapidly evolving, resulting in quick and easy access to information that helps in planning travel. This is related to biological factors in the integrity of nature for added value. Statistically significant variables are: (1) Future travelers will be looking for sustainable and environmentally responsible attractions (R = .046, Sig = 0.005); (2) Ethical travel planning (R = .052, Sig = 0.005); (3) Rewarding oneself from work done (R = .024, Sig = 0.005); (4) Finding new cultures that are different and unfamiliar (R = .048, Sig = 0.005); and (5) Sharing travel experiences through social media and wanting to be accepted (R = .032, Sig = 0.005).

5. Biological factors. The integrity of nature is of great added value. Future travelers will be looking for sustainable and environmentally responsible destinations.This factor correlates with political factors. The higher the rate of terrorist incidents, the more tourists are likely to make unintentional mistakes, show anxiety and feel unsafe on the trip (R = .028, Sig = 0.005). Other statistically

significant variables are: (1) Rewarding oneself for work done (R = .041, Sig = 0.005); and (2) Finding new cultures that are different and unfamiliar (R = .059, Sig = 0.005).

6. Political factors. The higher the rate of terrorist incidents, the more tourists tend to make unintentional mistakes, show anxious, and feel unsafe. Safety of tourism is less related to special interest tourism, health and adventure tourism (R = .033, Sig = 0.005), Environmental factors and ethical planning in tourism (R = .029, Sig = 0.005), and Rewarding oneself for work done (R = .032, Sig = 0.005).

7. Consumer behavior can be adjusted according to economic conditions. Coming from the economic downturn, tourists are cautious about the value for money. This is related to Environmental factors and ethical travel planning (R = .026, Sig = 0.005), Rewarding oneself for work done (R = .057, Sig = 0.005), and Sharing travel experiences through social media and wanting to be accepted (R = .025, Sig = 0.005).

8. Tourists tend to travel short distances. They may choose to travel more in the same country or within the same region. This is related to the current social and environmental responsibility, and preservation of original cultural traditions (R = .042, Sig = 0.005), Finding new cultures that are different and unfamiliar (R = .058, Sig = 0.005), and Sharing travel experiences through social media and wanting to be accepted (R = .033, Sig = 0.005).

9. Tourists currently prefer special interest tourism. This is related to Rewarding oneself for work done (R = .054, Sig = 0.005), Finding new cultures that are different and unfamiliar, followed by Sharing travel experiences through social media and wanting to be accepted (R = .054, Sig = 0.005).

10. Interest flow of tourists in health, exercise and sport tourism is related to Environmental factors and ethical planning in tourism (R = .029, Sig = 0.005). This is also related to Finding new cultures that are different and unfamiliar (R = .037 Sig = 0.005), Rewarding oneself for work done (R = .041, Sig = 0.005), Discovering new cultures (R = 0.241, Sig = 0.005), Sharing travel experiences through social media and wanting to be accepted (R = .020, Sig = 0.005).

11. Traveling to carry out necessary activities is related to Finding new cultures that are different and unfamiliar (R = .054, Sig = 0.005).

12. Convenience from the touring sources or agencies for information is related to Environmental factors and ethical planning in tourism (R = .056, Sig = 0.005). This is also related to Rewarding oneself for work done (R = .020, Sig = 0.005), Finding new cultures that are different and unfamiliar (R = .024, Sig = 0.005), and Sharing travel experiences through social media and wanting to be accepted (R = .058, Sig = 0.005).

13. Environmental factors and ethical planning in tourism are related to Finding new cultures that are different and unfamiliar (R = .057, Sig = 0.005).

6. Discussion and Conclusion

It can be seen from the results of the study that specific factors or variables could serve as good potential areas for development in future tourism trends. They are (1) Social factors that deal with tourists' education background, income, working hours, and time for traveling; (2) Economic factors that focus on competition regarding prices of travel products and services, and high expectations of tourism services from bargains; (3) Groups that are interested in environmental factors and ethical planning in tourism; (4) Groups that seek to discover new cultures which are different and unfamiliar from their own; and (5) Popular groups sharing travel experiences through social media and wanting to be accepted.

It was clear that the variable Natio nality is related to Economic factors, Technological factors, Biological factors; and nature tourism is of great added value. Future travelers will be looking for sustainable and environmentally responsible destinations, as reported earlier in the work by Pan et al. (2018) who emphasized relationship between tourism and sustainability from a cross-disciplinary perspective. The cross-disciplinary elements are important in sustainable tourism, including green energy, green transportation, green buildings, green infrastructure, green agriculture and smart technology. The future trend of tourism will potentially lead to a transformational change to the green economy. This particular future trend in tourism has called attention from all parties concerned to plan for sustainable tourism and encourages research into different fields to examine broader community/cultural, environmental / ecological and energy / water / food relationships.

Technological factors deal with rapid development of communication technology for quick and easy access to information that supports travel planning. The use of communication technology enables travelers to decide on the reservation/ purchase of tourism products and services for greater value, as studied by Buhalis & Amaranggana (2015). These researchers addressed the issues of change in tourism as affected by Information Communication Technology (ICT) in the form of E-tourism and the Internet. Interactions between tourism organizations and consumers need a new design for the entire process of developing, managing and marketing tourism products and destinations. Thus, all stakeholders involved in tourism and hospitality are gradually seeing their roles changing and presenting new opportunities and challenges. The researchers signified the future of E-Tourism with center on technology-based service operations and consumers' communication. Consumers will be provided with services and new experiences. A new data structure is needed for tourism organizations to manage their internal functions, relationship with partners and interactions with consumers and all stakeholders concerned. Tourism organizations will have to manage their resources with innovation for competitiveness in their operations in the very near future and beyond.

As for Biological factors, the integrity of nature is a great added value for future travelers who will look for sustainable and environmentally responsible tourism destinations. Tourists may choose to travel domestically in the country or within the same region. Such a trend was noted by Boley & Green (2016) for importance of a sustained symbiotic relationship between the tourism industry and sleepless environmentalists. The shift of growing land from natural conditions to unsustainable exploitation has resulted in the two becoming allies in the fight to protect the remaining natural landscape for the tourism industry. This partnership introduces the sustainable symbiotic relationship presented between

the conservation of natural resources and the competitiveness of ecotourism destinations. Under this symbiotic relationship, ecotourism destinations will benefit in the form of increased competitiveness through the protection of quality natural resources while the conservation of natural resources is of greater value due to scarcity of resources. These are recognized as the foundation of the ecotourism industry and drive all the economic benefits involved in the direction of environment protection for ecotourism.

It is evident that consumer behaviors can be adjusted according to economic conditions. The economic downturn would result in tourists being cautious about their choice of travel destinations to experience new cultures that are different and unfamiliar. Oliveira, Araujo & Tam (2019) pointed out that travel practices and destination decisions are increasingly affected by trust in peer opinions transmitted via social media. It is important to understand the behavior of people commonly known as "ambushers" who travel and tend to share their rather negative experiences with others. The researchers identified three social influence theories and structures: *identification*, *internalization* and *compliance* to examine these *ambushing* issues from 381 responses. It was found that most tourists shared their travel experiences on online primarily for pleasure, followed by wanting to be recognized on networks and travel websites, and need to hear from fellow travelers about their comments and reviews of visited destinations. Security, privacy issues, online behaviors are major concerns in the travel literature that should deserve attention from researchers to pursue in further investigation.

The researcher of the present study identified the flow of social and environmental responsibility with emphasis on preservation of original cultural traditions. Environmental concerns and ethical planning are gaining popularity along with travel to carry out necessary activities and rewarding oneself for work done. Such a trend was highlighted by Almuhrzi & Al-Azri (2019) in their study that environmental resources, natural heritage conservation and biodiversity have become key components in tourism development. The socio-cultural validity of the host community is coming with cultural heritage and traditional values for intercultural understanding and tolerance. Additional considerations should be given to equitable distribution of economic and social benefits in support of tourism and these are issues that all stakeholders should pay attention to in terms of employment and income generating opportunities for all host communities concerned.

7. Suggestions for Future Research

Based on the obtained findings, the researcher would like to suggest further research into the promising areas/variables, particularly social factors, economic factors, environmental factors and ethical planning in tourism, new cultures that are different and unfamiliar, sharing travel experiences through social media and wanting to be accepted. The research results in these potential areas could provide a good guideline for flexible and effective marketing mix strategies in tourism.

8. The Author

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Digital Currency in Tourism Markets in Thailand

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Abstract

The spread of Coronavirus -19 has created new normals, particularly social distancing and work from home, resulting in more online transactions including payment via online banking. In Thailand, the use of cryptocurrencies has therefore received attention from banks, business operators and customers. The researcher of this study was interested in looking into the issues on knowledge and understanding, confidence and possibility of cryptocurrencies in the tourism markets. The participants in the study were 400 from operators of small, medium and large tourism businesses on a voluntary basis. The size of the participants was supported by the criteria developed by Comray & Lee (1992) and Bryant & Yarnold (1995). The use of a constructed questionnaire with 5 levels had an IOC value at .095. The researcher developed a statistical model using multilayer perception to predict the cryptocurrency trend in Thailand's tourism markets. The obtained data were analyzed on SPSS Version 7.42 to secure parameters to explain the cryptocurrency trend under study. The results showed the participants having a positive outlook toward digital currency in facilitating reservations of and payments for travel products and services, transportation, entertainment programs, shopping and restaurants.

*Keywords: Digital currency, cryptocurrency, marketing, tourism business booking,
          product and service payment*

1. Introduction

The spread of the Coronavirus-19 pandemic has created new normals, particularly social distancing and work from home, resulting in increased online transactions for payment and online banking. Customers have found cashless payments fast, convenient and hygienically safe in protecting themselves from the virus. Food and merchandise delivery via online shopping has satisfied their need in social distancing. Of the new normals in current practice, cryptocurrencies have received a great deal of attention from bankers, business operators and customers. *Digital currency* or *cryptocurrencies* like Bitcoin is new money built on a fixed mechanism of mathematics to decrypt on the computer system to take money out of the mechanism; the new currency is created to reduce the centralization of the financial institution payment system by having it distributed via *block chain technology*. In so doing, it is possible to track the movement of money even without intermediaries and is especially counterfeit-proof. Payment is therefore only within the network, reducing service cost and boosting security. It is important that most central banks have yet to assure those privately-made cryptocurrencies. At the moment, it is not used as a unit for determining the price of items, and the value is still volatile. However, it has the properties of money for its fixed value and can replace the local currency according to the law of a country (Chucherd, 2019).

The use of cryptocurrencies in Thailand for payment transactions is currently limited. Thai people who can produce Thai crypto, such as coins for Thai investors, began to know about cryptocurrencies as digital assets under the Digital Asset Business Act 2018, and the supervision of Securities and Exchange Commission (SEC). Registration of crypto traders in Thailand nowadays is possible, and more businesses in Thailand are starting to accept cryptocurrencies. They are in the form of Thai bitcoins—having more liquidity but fewer price fluctuations than other preceding cryptocurrencies in the money markets. Traders have currently started to accept bitcoins in some stores. The use of digital currency will benefit travelers in that it helps reduce unnecessary expenses and hassle in money exchange.

It is expected that the trend of digital currency will continue for tourists to use crypto currencies on their trips for safety and convenience in making payments for tourism products and services, while facilitating operations of product and service providers. On this basis, the researcher wanted to investigate the current condition and status of cryptocurrencies regarding their possibility and consumers' confidence in the tourism markets in Thailand.

2. Research Objective

The research objective was to study the use of cryptocurrency in Thailand's tourism markets regarding users' knowledge and understanding, confidence, and possibility of use.

3. Literature review

In justifying the need to conduct this study, the researcher reviewed literature in two areas: (1) currency in Thailand and (2) travelers in the digital age.

3.1. Currency in Thailand

The Securities and Exchange Commission (SEC) has already made clear that buy-sell-exchange digital assets in Thailand's digital currency consists of Bitcoin, Bitcoin Cash, Ethereum Classic, Litecoin, Ripple and Stellar, as they are reliable and popular. Here are details:

1. Currency Bitcoin is a digital currency that many people know well. It is the world's first currency created in 2009 by a Japanese programmer under the pseudonym Satoshi Nakamoto. Bitcoin runs under a system called Blockchain to help prevent money from being pumped out. It works like the money in the system to not more than 21 million units so that inflation will not occur quickly.

2. Currency Bitcoin Cash is a currency separated from Bitcoin for cheaper cryptocurrency. As a new currency created in 2017, it has faster transfers and it didn't take long for Bitcoin Cash to gain recognition and success. It has become one of the hottest digital currencies with the highest market capitalization (as of June 2018). Bitcoin Cash has a market capitalization in US$ 14 billion or about 4.5 billion baht.

3. Currency Ethereum was developed and initially released by Vitalik Buterin and Gavin Wood of Etheruem Foundation in 2015. The developers have earned great recognition in the digital finance world for the currency's applications in a variety of transactions. Especially as a fundraising base for IPO (Initial Public Offering) of new cryptocurrencies around the world, Ethereum has been accepted by many leading organizations. The EEA

or Enterprise Ethereum Alliance was formed to jointly develop and research into the capabilities of Ethereum, which currently has more than 116 well-known companies as members, including Microsoft, JP Morgan, Toyota and Intel. Ethereum is valued at US$ 48 billion, or 1.5 trillion baht, just behind Bitcoin (Securities and Exchange Commission, 2019).

4. Currency Ethereum Classic is another currency that has been branched from Ethereum to handle Ethereum hacking. Ethereum Classic was developed in 2016, which as of June 2018 had a total value of US $ 1.4 billion or about 44 billion baht.

5. Litecoin was developed in 2011 by the former Google engineer Charlie Lee and is currently approximately near US$ 56 million, worth about 5.5 billion baht.

6. Currency Ripple is a cryptocurrency that differs from other cryptocurrencies for its design under the Private Block Chain System. The investors want Ripple to be stable in the mainstream cryptocurrency for foreign exchange. This currency is widely accepted by leading financial institutions and companies around the world, including Google, SBI Group, Standard Chartered, and Seagate. Even financial institutions in Thailand, like Siam Commercial Bank, have invested in Ripple to study the use of financial technology (Fintech) to develop online cross-border money transfers to be more convenient, faster and more cost-effective than the traditional currencies.

7. Currency Stellar is a currency developed from Ripple as a digital currency for major currencies' transfer in small amounts, particularly in support of the general public. What makes Stellar attractive is its announcement of a partnership with IBM, the world's largest IT Company. To develop a Blockchain Banking Solution Platform for Stellar, the primary focus is on shortened timeframe of cross-border payments transactions. Stellar has a great potential for public use and people are watching its developments closely.

3.2. Travelers in the Digital Age

Travelers in the digital age have changed their payment behaviors in their transactions with business organizations. Travelers have changed their booking of tourism products and services through digital channels (Sappakit, 2016). Most tourists choose to travel to destinations based on their friends' recommendations via social media; they tend to seek and share new experiences via storylines on social media. These travelers in the digital age want simplicity, ease, and convenience; they show confidence in booking travel programs online channels via smart phone for their safety and data security (Vetchabutsakorn, 2016).

4. Research Methodology

The researcher was interested in studying the issues on knowledge and understanding, confidence and possibility of cryptocurrencies used in the tourism markets. The participants in the study were 400 from operators of small, medium and large tourism businesses on a voluntary basis. The size of the participants was determined by the criteria of Comray & Lee (1992) and Bryant & Yarnold (1995) (See participants' data in Table 1). The constructed questionnaire had 30 items in three categories: (1) Knowledge and Understanding (items 1-20), (2) Confidence (items 21-25), and (3) Possibility (items 26-30), and its IOC value was at .095. (See the questionnaire items in Table 2.)

5. Data Collection

A constructed questionnaire asked the participants about their perception of cryptocurrencies regarding knowledge and understanding, confidence and possibility of use in Thailand's tourism markets. The researcher distributed the questionnaire with a request letter to the management concerned via the Google program to secure the respondents' answers to the given questions. The researcher followed up on the sent questionnaire to get 100% of returned responses.

6. Statistics and Data Analysis

The researcher developed a statistical model to predict the cryptocurrency trend in Thailand's tourism markets using Multilayer Perceptions. As for data analysis, the researcher used SPSS Version 7.42 and used parameters to explain the predicted trend in a summary, as shown in Figures 1-3 and Tables 1-2.

Figure 1: Trend of Cryptocurrencies in Thailand's Tourism Markets (1)
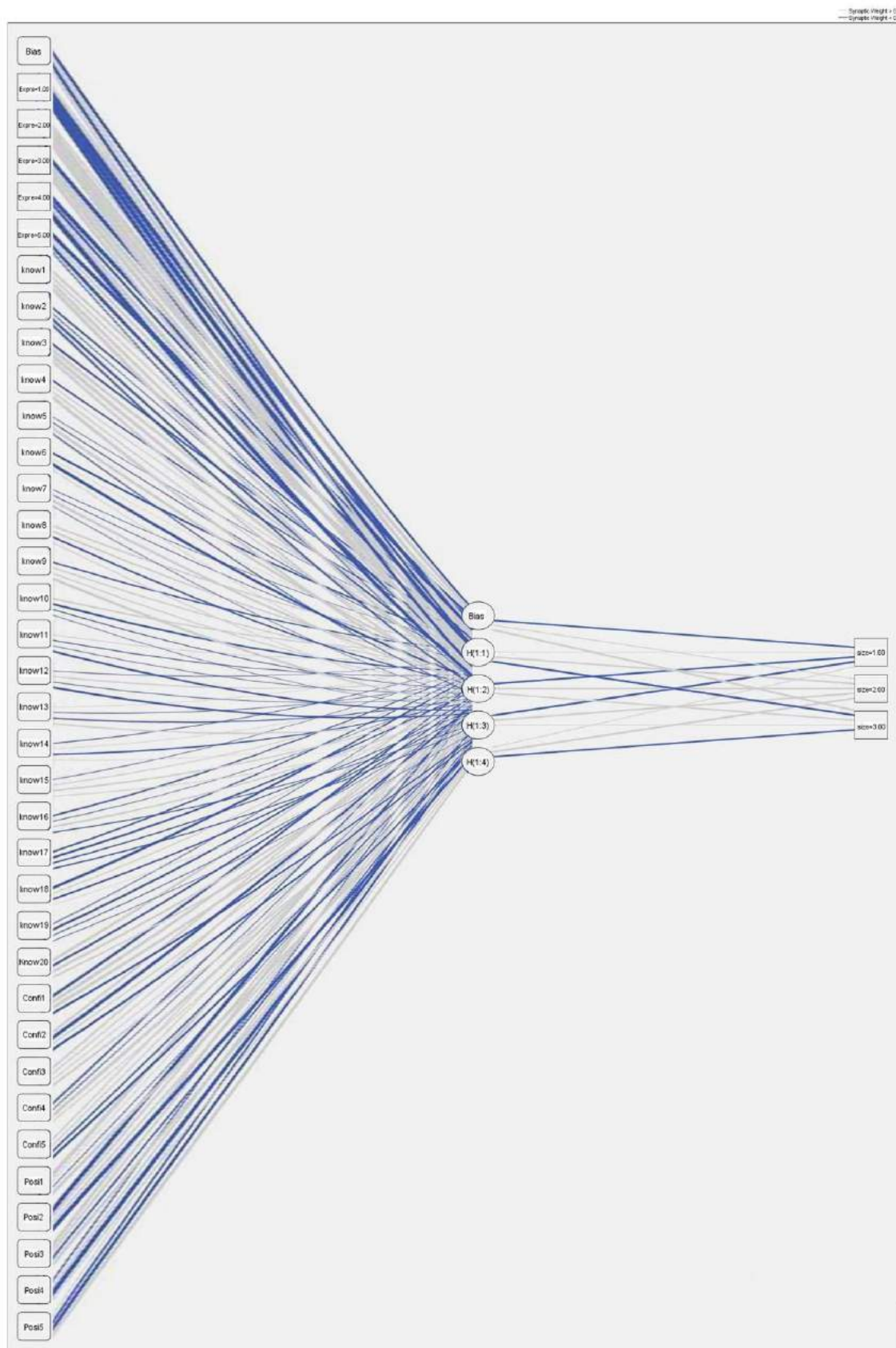
Figure 2: Trend of Cryptocurrencies in Thailand's Tourism Markets (2)
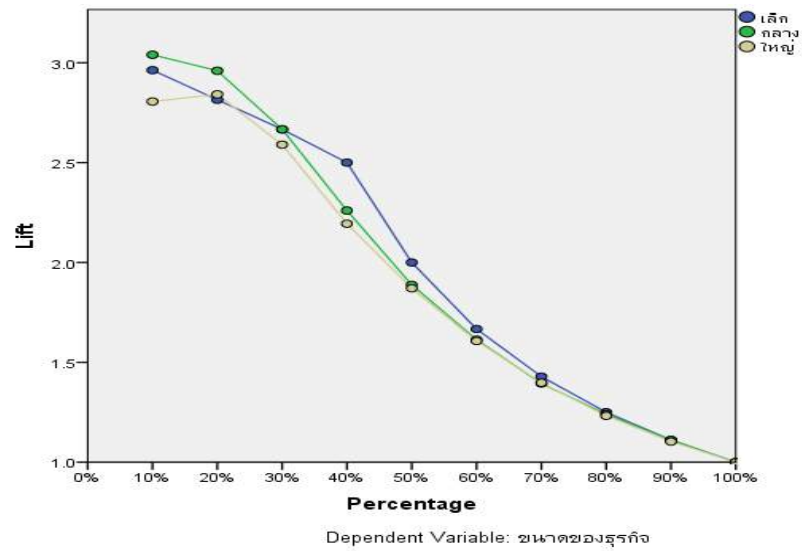
Figure 3: Trend of Cryptocurrencies in Thailand's Tourism Markets (3)
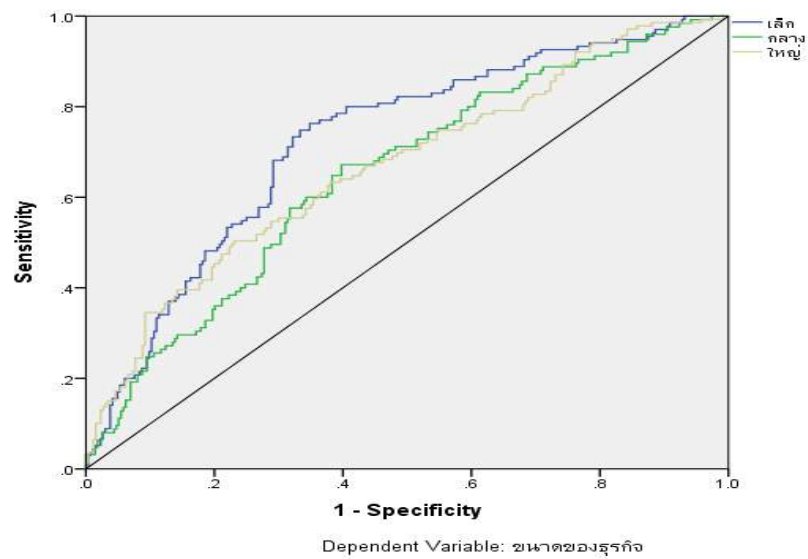
Table 1: Percentage of Business Size and Business Experience

business size	Frequency	Percent	experience	Frequency	Percent
Small size	135	33.8	experience 1-10 years	165	41.3
Medium size	126	31.5	experience 11-20 years	109	27.3
Large size	139	34.8	experience 21 years -30 years	47	11.8
			experience 31 years-40 years	69	17.3
			experience 40+ years	10	2.3
Total	400	100.0	Total	400	100.0

Table 2: Results of Parameter Estimation Using Cryptocurrencies in Thailand 's Tourism Markets

| Issues	Hidden Layer 1				
	experience 1-10 years	experience 11-20 years	experience 21-30 years	experience 31-40 years	experience 40+ years
(Bias)	-.015	-.278	-.033	.499	.035
Small-sized travel business	-.888	2.096	-.823	-.368	1.324
Medium-sized travel business	.416	-1.469	.267	1.664	-.061
Large-sized travel business	-.159	-1.188	.594	-1.556	-1.380
Knowledge and Understanding					
1. Knowledge and understanding that cryptocurrency 100% intangible	-.125	-.021	.121	-.056	.052
2. Knowledge and understanding that no organization or government has regulated its value and is not in the control of the government; considered that we truly own the money.	-.418	.304	-.151	.252	.097
3. Knowledge and understanding that transactions do not have to go through a bank, no need to have a bank account. Just have internet and only through the Internet without intermediaries, such as bank, paypal, moneygram.	.131	-.273	.272	-.042	.149
4. Knowledgeable with understanding that every transaction will be recorded and disclosed.	.336	.198	.511	.214	-.685
5. Knowledge and understanding that price fluctuations are still difficult to predict the direction of the price.	-.434	.624	-.222	-.156	-.765
6. Knowledge and understanding that there is no legal support from the bank of Thailand, at this time; it is not considered a payment for debt repayment under the Thai law.	-.199	.017	.169	.110	.242
7. Knowledge and understanding that it is not yet popular in Thailand and in some countries.	-.118	-.325	.578	.038	-.270
8. Knowledge and understanding that buying and selling and using may be complicated for beginners.	-.015	-.039	.018	.326	.149

9. Knowledge and understanding that there is a risk of being hacked; have always seen many cloud mining websites got hackers to break down and stole financial information	-.144	.236	-.195	.619	-.120
10. Knowledge and understanding that at present the bitcoin exchange markets in Thailand is becoming more and more attractive; more and more providers are launching their currency.	.405	.000	-.578	-.186	.339
11. Knowledge and understanding that one can choose to buy or sell through the trading board. Local bitcoins will help match buyers and sellers with the same needs.	.568	-.032	.157	.301	.084
12. Knowledge and understanding that as a wallet service provider of Bitcoin, one is allowed to buy and sell via mobile app.	-.228	-.033	-.357	-.141	-.241
13. Knowledge and understanding that as a new payment option, cryptocurrency attracts investors to use the service from a friendly image to people using cryptocurrencies.	.136	-.089	-.400	.045	.201
14. Knowledge and understanding that one can create a cryptocurrency wallet and can start accepting payments through cryptocurrencies right away.	.365	.076	.218	-.400	-.452
15. Knowledge and understanding that there is no need to be charged from the card.	-.585	.124	-.228	.250	-.363
16. Knowledge and understanding that there is risk of price fluctuation in the future.	-.477	-.095	-.255	-.064	-.431
17. Knowledge and understanding that there will be no two parts of the tax: VAT and tourist tax.	-.616	.083	-.038	-.001	-.351
18. Knowledge and understanding that the security of cryptocurrencies has always increased for 10 years now; enabled businesses to see opportunities and possibilities.	-.280	-.217	-.280	-.120	.521
19. Knowledge and understanding that cryptocurrencies are still popular and are growing in popularity.	.237	.130	.533	.355	.083
20. Knowledge and understanding that Crypto Exchange makes it easier for its customers to book flights; convenience with cryptocurrencies.	-.313	-.211	.373	-.154	-.006
Confidence					
21. Confidence in using cryptocurrencies as payment in the distribution of tickets for all types of travel vehicles.	.540	-.059	.051	-.127	.238
22. Confidence in the use of cryptocurrencies as payment to facilitate booking. Providing travel products and services, such as hotels or seat reservations, other vehicle assemblies, rental cars, venue tickets, shows, use of restaurants, souvenir shops and the like.	-.286	.136	-.142	.451	-.004
23. Confidence in using cryptocurrency payment for entry with service fees (visa); Travel Insurance Bill of Exchange for travel receiving foreign exchange.	.370	.222	-.315	-.327	-.487
Possibility					
24. Confidence in using cryptocurrencies as payment for admission services- Export (transfer in-out) tourists from the airport to the accommodation ; attractions and in return service as well as various baggages of tourists.	.498	-.032	-.402	.072	-.275

25. Confidence in using digital currency to pay for souvenirs and guidebooks as well as provide advice on various areas of tourism.	-.237	.297	-.097	-.086	-.043
26. Possibility to use digital currency as payment in the distribution of tickets for all types of transport.	.412	-.029	.497	.171	.132
27. Possibility to use digital currency for payment to facilitate booking. Providing travel products and services, such as hotels or seat reservations, other vehicle assemblies, rental cars, venue tickets, shows, use of restaurants, souvenir shops and the like.	.054	.196	-.087	.176	.148
28. Possibility to use cryptocurrency payment for entry permit service charges (visa, Travel Insurance Bill of Exchange for foreign exchange).	.173	.172	-.192	.214	.245
29. Possibility to use cryptocurrencies to pay for admission services- Export (transfer in-out) tourists from the airport to the accommodation; attractions and in return service as well as various baggages of tourists.	.138	.178	.552	-.052	-.039
30. Possibility to use cryptocurrency to pay for souvenirs and guidebooks as well as provide advice on various areas of tourism.	-.041	-.016	.335	.280	.057
(Bias)					
H (1: 1)	1.692	-.022	.030	-.227	-1.745
H (1: 2)	-.207	.389	-.114	.086	-.186
H (1: 3)	1.842	-.815	-.162	-.325	-.259
H (1: 4)	-.369	-.217	.306	.387	.394
H (1: 5)	.301	2.163	.027	-.844	-.649

Note: H=Years of Experience/ H1=1-10 years/ H2=11-20 years/ H3=21-30 years/ H4=31-40 years/ H5=40+ years

     Table 1 reports 400 participants' variables as: 135 (33.8%) small-sized businesses, 126 (31.5%) medium-sized businesses, and 139 (34.7%) large-sized businesses. As for working experience in tourism business in Thailand, it was found that 165 (41.3%) participants were with 1-10 years, 109 (27.3%) with 11-20-years, 47 (11.8%) with 21-30 years, 69 (17.3%) with 31-40 years, and 10 (2.3%) with 40+ years. It should be noted that the participants in large-sized businesses had experience of 21+ years, while those in the small- and medium-sized businesses with the range of 1-20 years.

    As shown in Table 2, the participants' opinions on the trend in use of cryptocurrencies in the tourism markets in Thailand point to the participants in small-sized businesses with experience of 11-20 years being positive (2.096), those in medium-sized businesses with experience of 1-10 years being positive (.416), and those in large-sized businesses with experience of 21-30 years being positive (.594). The rest of the participants in three-sized businesses with varied years of experience did not show positivity toward the trend of cryptocurrencies in use.

    As seen in Table 2, the results of parameter estimation using cryptocurrencies in Thailand's tourism markets in three issues: (1) knowledge and understanding, (2) confidence, and (3) possibility of use, are shown in five parameters of years of experience: H1= 1-10 years,

H2=11-20 years, H3=21-30 years, H3=31-40 years, and H5=40+ years. The researcher set the parameter value at .5+ to indicate *positivity* of the trend. The set parameter value in this study was intended to explore whether there would be any *trace of positivity* in the participants' perception toward the use of cryptocurrencies in the tourism markets in Thailand. Below are the findings:

Knowledge and Understanding
　　　　Knowledge and Understanding issues 7, 9, and 19 indicate clearly that the participants with experience of 21 years or more were positive about the use of cryptocurrencies in the tourism market. They were well aware of the increased popularity of the cryptocurrencies and risks involved.

Issue 7: Knowledge and understanding that it is not yet popular in Thailand and in some countries (parameter value .578/ H3).

Issue 9: Knowledge and understanding that there is a risk of being hacked; have always seen many cloud mining websites got hackers to break down and stole financial information (parameter value .619/ H4).

Issue 19: Knowledge and understanding that cryptocurrencies are still popular and are growing in popularity (parameter value .533/ H3).

Confidence
　　　　Confidence issues 21 and 22 reveal that the participants with less (1-10 years) and more (30-40 years) experience were positive about the use of cryptocurrencies in the tourism markets. They were confident in payments for booking with convenience tourism products/ services and facilities concerned. It should be noted that the parameter value at.451/ H4 of issue 22 shows a slightly weaker trace of confidence than that of issue 21.

Issue 21: Confidence in using cryptocurrencies as payment in the distribution of tickets for all types of travel vehicles (parameter value .540/ H1).

Issue 22: Confidence in the use of cryptocurrencies as payment to facilitate booking. Providing travel products and services, such as hotels or seat reservations, other vehicle assemblies, rental cars, venue tickets, shows, use of restaurants, souvenir shops and the like (parameter value .451/ H4).

Possibility of Use
　　　　It is evident that issues 26 and 29 show the participants with less (1-10 years) and more (30-40 years) experience were positive about *the possibility of use* of cryptocurrencies in the tourism market. They valued speed and convenience in getting airport–accommodation transfer, touring attraction programs and return services as desired. It should be noted that the parameter value at .497/ H3 of issue 26 shows a slightly weaker trace of *possibility* than that of issue 29.

Issue 26: Possibility to use digital currency as payment in the distribution of tickets for all types of transport (parameter value .497/ H3).
Issue 29: Possibility to use cryptocurrencies to pay for admission services- Export (transfer in-out) tourists from the airport to the accommodation; attractions and in return service as well as various baggages of tourists (parameter value .552/ H3).

Interactions between the Lengths of Experience

The researcher tried to trace interactions between the participants' lengths of experience, using H1 as a constant: H1 (1-10 years): H2 (11-20 years) or H3 (21-30 years) or H4 (31-40 years) or H5 (40+ years). As shown in Table 2, the positive parameter values indicate that the years of experience were important but it would need more evidence to support a claim, if desired, on it as a the only strong determinant or predictor for the use of cryptocurrencies in the tourism markets in Thailand.

H1: H1 Parameter value 1.692/ H1

H1:H2   No positive parameter value

H1:H3   Parameter value 1.842/ H1

H1:H4   Parameter value .349/H5 [showing a week trace of interaction]

H1:H5   Parameter value 2.163/ H3

7. Discussion

From the findings of the study, the participants in all three-sized businesses tended to be positive about the use of cryptocurrencies in the tourism markets in Thailand. They had good knowledge and understanding of growing popularity in the use of digital currencies. They were also well aware of rather insufficient legal support from the Bank of Thailand, and that currently debt repayment has not yet been fully authorized under Thai law. Such limitation in the use of cryptocurrency in Thailand was earlier pointed out in the study by Chucherd (2019).

Thai investors are getting to know crypto as a digital asset under the Digital Asset Business Act 2018; the Securities and Exchange Commission (SEC) (2019) has regulated the registration of crypto traders in Thailand and warned those interested in investing in crypto that there is a high risk in investment. The Board of Trade (BOT) has launched the Inthanon Project, with a test of the system for transferring money between financial institutions by using simulated CBDC (wholesale CBDC) to optimize the payment system infrastructure. Recently, it has reported the results of Phase 1 of the test with eight commercial banks on inter-fund transfers and liquidity management. It was found that blockchain technology showed some potential to enhance the efficiency of Thai payment systems. It pictured cryptocurrencies getting closer to Thai people. Those interested parties would consider it an alternative to investment and accept risks involved.

As known, wholesale CBDCs want to optimize the payment systems among financial institutions as long as the use of crypto does not pose a risk to the stability of the financial system. Thai consumers are currently confident in using the baht currency and its stability in the country's payment systems. Statistics 2019 showed that Thailand had 38.2 million foreign tourists visiting each year, a growth of 7.54% which was higher than in 2017. The figures pointed to the strong growth of the Thai tourism markets throughout the year. The number of users of crypto exchanges via Local Bitcoin has increased steadily. More foreign tourists have brought in their money through Local Bitcoin exchange for local payments (Securities and Exchange Commission (SEC), 2019).

It has been without doubt about some businesses having introduced cryptocurrencies as one of the payment options for food, hotels, and travel-related businesses, such as airplanes, boats, cars for the benefit of crypto-friendly image (Cryptocurrency Friendly). However, the majority of hotel businesses in Thailand still do not fully support cryptocurrencies. But some more hotels are gradually accepting crypto payments on the same basis as a VISA or MasterCard service or any current payment system. Created crypto wallet without extra charge is for crypto payments: VAT and tourist tax. It has been cautioned by authorities concerned about the risk in digital currency fluctuation as well (Phanichphak & Sakavee, 2017; Emergency Decree on Digital Asset Businesses B.E. 2018; Chucherd, 2019).

Confidence in the digital currency has been a keen issue at the moment. As seen in the results of the study, the years of experience of tourists and service providers could serve as a reasonable predictor for the use of cryptocurrencies in the tourism markets. This point on *confidence* was emphasized in the work of Phanitphak and Sakakee (2017) that the real value of cryptocurrency lies in the confidence of investors. In particular, Chucherd (2019) cautioned about trust in the *privately-issued cryptocurrencies*. As for the *possibility* issue, The Bank of Thailand (BOT) might consider digital bonds on the Blockchain, and give an initial support for digital currency as payment for all types of travel vehicle tickets and services/ facilities frequently used by tourists.

In facilitating foreign exchange, Thailand could try bitcoin ATMs in the tourist locations. It would be too early to say now that Thailand is not ready for the use of cryptocurrencies in its tourism markets. As pointed out by Sappakit (2016) and Chucherd (2019), it is imperative for a country to have Cryptocurrency Big Data and AI with high-power WIFI to facilitate the use of digital currency efficiently.

8. Final Remark

In this study, the researcher used trend prediction which was applied to the specific time under study. Further research may include other variables related to consumer behavior to predict or explain the upcoming trend. It should be noted that the Covid-19 pandemic could accelerate the use of cryptocurrencies by tourists in need of staying away from touching paper money for fear of infection. As shown in the results of this study and the literature on current tourism and digital currency, we can now see that the upcoming trend of cryptocurrencies appears somewhat inevitable in the tourism markets in Thailand.

9. The Author

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The Best Practice of Creative Tourism Management in Agricultural Communities for Promotion of Holistic Education

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Abstract

Creative tourism is a creativity-oriented tourism development process derived from the extension of cultural capital, lifestyle, and existing wisdom of various local communities. It is the new tourism management approach allowing tourists to enjoy opportunities for tourism activity participation in which they can exchange knowledge and enjoy direct experiences. This qualitative research used in-depth interviews as a research tool, and the obtained data were analyzed using the content analysis technique. The data were collected from 15 key informants selected by purposive sampling. They were divided into 3 groups of 5 members each: (1) senior tourism experts, entrepreneurs and instructors in public organizations, (2) instructors of holistic education subjects, and (3) entrepreneurs, farmers, and experts in local communities practicing New Theory Agriculture based on Sufficiency Economy. The agricultural communities' best practice was classified under creative tourism management in terms of creating added value for communities and building uniqueness for agricultural communities. Such creative tourism concept has become part of holistic education in Thai schools and universities for multidimensional student development. It focuses on an individual's physical, mental, intellectual, and life-skill developments to become a well-cultivated human being. The best practice of creative tourism in agricultural communities thus serves as an outside classroom learning approach that enables learners to understand society and inspire themselves to extend creativity into their future career. The researcher examined two important areas of the best practice of creative tourism in agricultural communities in promoting holistic education: (1) learners' interaction and knowledge dissemination and transfer for comprehensive understanding; (2) learners' participation in collaborative thinking and taking actions based on the identified purpose. The first area involves skill training and implementation, while the second fosters inspiration, problem-solving task training, and creative thinking development.

Keywords: The best practice of creative tourism management, creative tourism in agricultural communities, creative thinking development, holistic education

1. Introduction

Creative tourism concept began to appear around the year 2000 (Richards et al., 2018). Later in 2006, the United Nations Educational, Scientific and Cultural Organization (UNESCO) defined *"creative tourism"* as a journey that is committed to true attachment and

experience resulting from participation in learning the art. Cultural heritage or the special characteristics of a particular area bring connection to people who live in the area and the creator of that living culture adds values for the community and uniqueness of the place; this is, not an activity that focuses on *community revenue* but is an activity that emphasizes *the value of the community* (Special Area Development Organization for Sustainable Tourism, 2018). Creative tourism is therefore different from *traditional tourism* in that significance of active participation be given to the learning process for innovations and dynamics toward sustainability based on local resources (Richards et al., 2018).

As known, Thailand is an agricultural country in which the majority of people are farmers and earn their living from agricultural products--rice, field crops, horticulture, vegetables, and fruits. Currently, most agricultural communities have their farming operations under the principles of the sufficiency economy philosophy initiated by King Bhumibol. The country's 12th National Development Plan guides farmers' work toward participatory development, aiming to transition Thailand from middle-income countries to high-income countries (Office of the National Economic and Social Development Board, 2016). The framework of the 20-year National Strategic Plan and the 2nd Tourism Development Plan (2017-2021) with *sustainable tourism development* emphasize a Thai way of life for its culture and traditions, while supporting local communities for cost-effective agriculture, and well-maintained natural environment for local investment in tourism. In so doing, local communities need to involve their people in creative tourism to add value to their current or new activities, and put their creativity into tourism products and services to attract tourists. The ultimate goal is for people to be self-sufficient in their local communities --with social gains in their well-being as well as economic gains in additional income (Office of the Permanent Secretary for Tourism and Sports, 2017).

2. Literature Review

The sufficiency economy concept is now extended by the Thai government to include creative tourism to increase value of current activities and products/ services of agricultural communities (Winidworakijkun, 2014). Schools and universities therefore serve as a foundation to educate students into the trend of creative tourism. The national tourism development authority is to implement the creative tourism plan with new learning centers to work with schools and communities by creating sufficiency economy learning activities in agriculture, tourist activities and attractions for individual communities or community networks. These certainly require effective management from collaboration of all parties concerned (Phutthachon et al., 2013; Chansuri & Siriwong, 2018)

Kaewsanga & Jumnongsorn (2012) noted that tourists' behaviors and preferences for destinations have changed into the participatory mode; that is, tourists wish to learn more about the location of visit with reality or immersed experience. Such a trend has opened up a good opportunity for sustainable agriculture communities with the way of life unique to a

particular culture and tradition that outsiders or tourists wish to experience in the role of observers or temporary residents on that location. In particular, there are three things considered attractive to tourists: the use of raw materials in local communities, the traditional working or crafting methods, and the natural scenery of the location.

Agricultural communities are advised by the creative tourism authority to reflect upon their knowledge and wisdom with unique cultural identity as well as natural resources that can attract outsiders or tourists (Na Songkhla, 2011). Their cultural identity will be a tourist attraction that in turn can utilize agricultural resources for tourism products and services, not simply for occupational purposes. Phongwiritthorn (2015) asserted that a sustainable agricultural tourism model should be developed by promoting various forms of agricultural tourism, with unique characteristics of the community.

Creative tourism provides opportunities for tourists and local communities to exchange knowledge and experience, while promoting the role of local stakeholders in sustainable tourism management networks (Department of Tourism, 2018). Teaching and learning in today's schools and universities focus on learning outcomes in preparation of human resources with professional, social and human skills in the 21st century (Mahmoudi et al., 2012). It is therefore appropriate for Thai educational institutions to include creative tourism as part of holistic education to prepare local students for a possible career in the country's tourism industry.

In Thailand, university students under the Higher Education Plan (2017-2021) are required to be trained in integrated human and social skills for holistic development of participative/ collaborative life skills and hand-on learning experiences (Johnson, 2010). The holistic approach to learning management is for students to increase their ability to develop themselves in all soft-skill dimensions: emotional maturity, positive psychological constructs, imagination, creativity, social responsibility, followed by sound body and spirit for complete humanity (Patel, 2003). The Office of the Higher Education Commission (2018) specifies three development strategies for holistic education : (1) promoting soft skills integrated with hard skills, (2) creating an ecosystem to support *transformative learning*, and (3) developing students into leaders responsive to change in society with moral knowledge. Holistic education makes possible a realistic approach to learning of social environments along with desirable social behaviors (Duchesneau, 2020). In this regard, students will learn to participate in creative tourism activities arranged by their communities by taking into consideration positive interactions between the hosts and the tourists. It is important for students to become aware in the early stage of their schooling that they can obtain knowledge not only from teaching or assigned media resources, but more importantly from visitors and their experiences from various backgrounds (Wisutthilak et al., 2013).

In this study, the researcher examined the best practice of creative tourism management in agricultural communities outside the school so that students can experience holistic learning to understand their society and be inspired to get involved in creative tourism. This is for them to learn how to develop soft and hard skills in integration.

3. Research Objectives

The research objective was to examine two important areas of the best practice of creative tourism in agricultural communities in promoting holistic education: (1) learners' interaction and knowledge dissemination and transfer for comprehensive understanding, and (2) learners' participation in collaborative thinking and taking actions based on the identified purpose. The first area involves skill training and implementation, while the second fosters inspiration, problem-solving task training, and creative thinking development.

4. Research Framework

The researcher developed a research framework for this study as shown in Figure 1.

Figure 1: Research Conceptual Framework
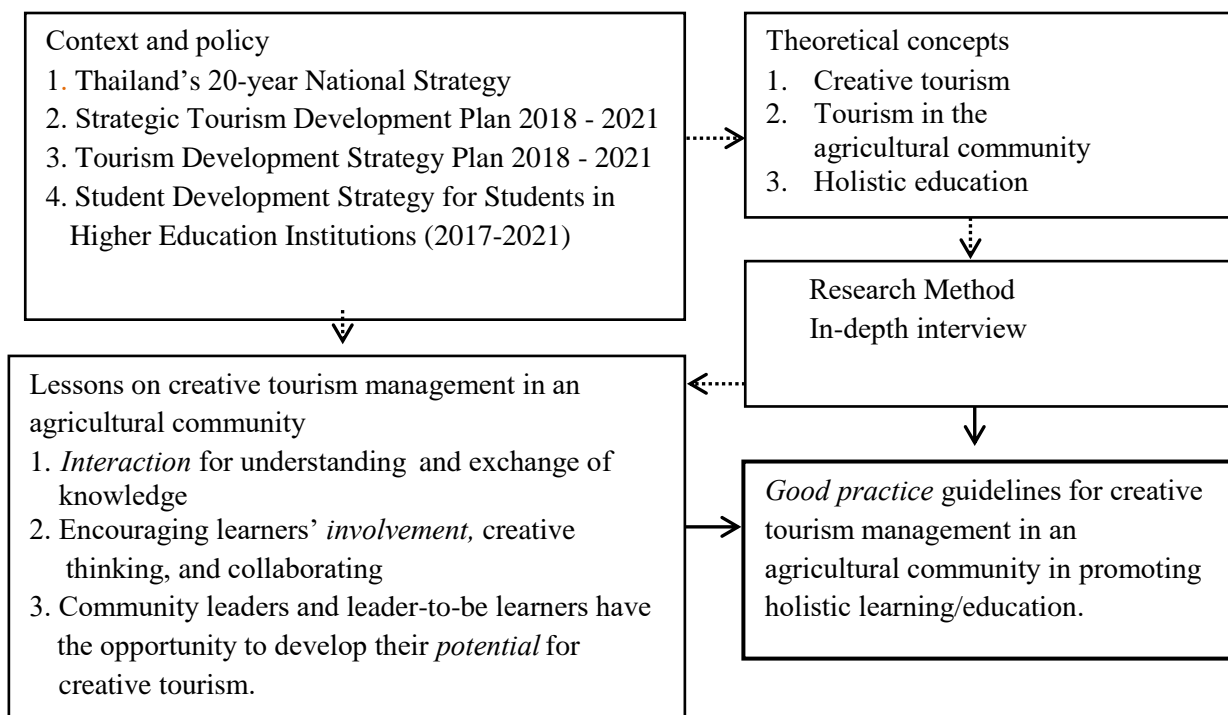
The researcher studied best practices of creative tourism management in an agricultural community in promoting holistic learning, from the government's plan and policy documents, public organizations, tourism businesses, education institutions, creative tourism operators, followed by reviews of New Agriculture Theory, and effective farming practices by farmers and villagers in agricultural communities. The document study was to ensure that the researcher could have a clear picture of what has been done in order to implement sound and practical holistic education at the higher education level. From the studied documents and earlier research work to create the research framework shown in Figure 1, the researcher found that emphasis

was given to interaction, understanding, knowledge sharing, learners' participation, and co-working between community leaders and learners for the opportunity to develop potential in both parties (Patel, 2003; Johnson, 2010; Mahmoudi et al., 2012; Wisutthilak et al., 2013; Phongwitthithorn, 2015; Pimklad et al., 2017; Chansuri & Siriwong, 2018; Richards et al., 2018; and Duchesneau, 2020).

5. Research Method

This research used a qualitative method by gathering data from government and project documents, textbooks, concepts, theories, and related studies. The researcher conducted in-depth interviews with 15 key informants by purposive sampling. They were divided into 3 groups of 5 members each: (1) senior tourism experts, entrepreneurs and instructors in public organizations, (2) instructors of holistic education subjects, and (3) entrepreneurs, farmers, and experts in local communities practicing New Theory Agriculture based on Sufficiency Economy.

The researcher developed interview questions dealing with two important areas of the best practice of creative tourism in agricultural communities in promoting holistic education: (1) learners' interaction and knowledge dissemination and transfer for comprehensive understanding; (2) learners' participation in collaborative thinking and taking actions based on the identified purpose. The first area involves skill training and implementation, while the second fosters inspiration, problem-solving task training, and creative thinking development.

6. Research Findings and Discussion

This section contains two parts on results of documentary analyses and interview results regarding best practices of creative tourism management in agricultural communities in promoting holistic education.

6.1. Part 1: Result of Document Analysis

The researcher analyzed government and project documents, textbooks, concepts, theories, and related studies, and reported major points on creative tourism management practices in agricultural communities for discussion.

The term Creative Tourism Management in Agricultural Communities (CTAC) refers to the activities with new creative methods created by villagers and community leaders in relation to the way of life of agricultural communities in particular areas. More prominent and interesting, community activities can be turned into tourist attractions as part of the government policy by the Department of Community Development (2018). The 20-year National Strategic Plan specifies (1) promoting and developing potential career opportunities and employment as foundation for economic development, (2) supporting community enterprises and promoting community tourism link routes in each locality by spatial development through community processes of access, funding and income generation in the community, and (3) reforming the agricultural

production structure of the whole system with the creation and promotion of value-added modern marketing.

As specified in the government's plan, creative tourism management in an agricultural community is therefore a target on *community tourism*. Link of tourism routes in each locality is to create added value by allowing tourists to get involved in the community's innovations and new dynamics toward sustainable tourism based on local resources in agricultural communities (Wisutthilak et al., 2013). This is to create a bond (*engaged*) of the tourists (*guest*) with the community *(host)* for *authentic participation*.

It is vitally important that the form and characteristics of community tourism be consistent with the principles of holistic education, which are required as part in the educational management process at the basic education and higher education levels. It is closely associated with the student-centered approach; and creative tourism management in the agricultural community provides opportunities for learners to experience creative tourism activities and develop their talents in the physical, intellectual, emotional, and social domains.

Such students' hand-on experience in creative tourism according to the principles prescribed by the government policy, in fact, supports the application of a holistic approach to a particular subject in schools and universities by letting students take alternated roles as both the host and the guest. Students then have good learning opportunities in gaining insight into the way of life in the target agricultural community for both practicality and inspiration.

Figure 2: The Connection of Learning Outcomes from Creative Tourism in the Agricultural Community with Holistic Education Promotion
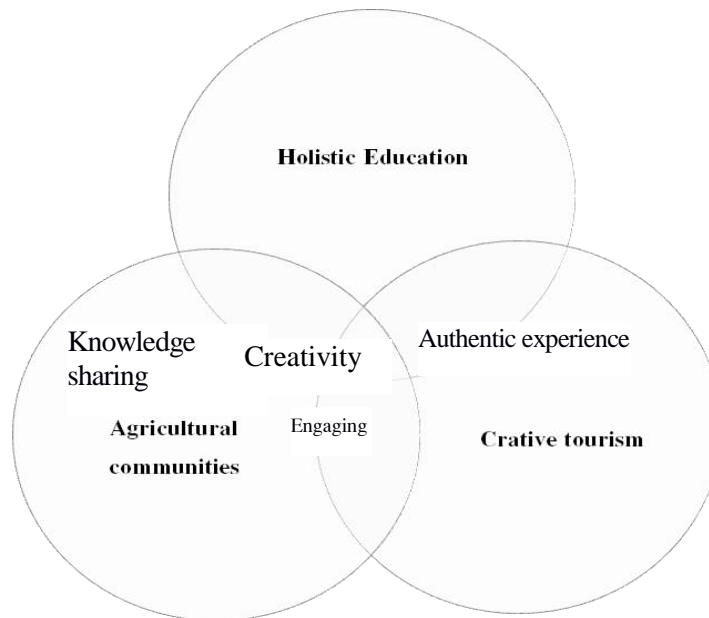
Figure 2 shows the results of concept analysis on the principles of creative tourism in an agricultural community being integrated into a source of learning outside the classroom (Patel, 2003; Johnson, 2010; Songkhla, 2011; Kaewsanga & Jumnongsorn, 2012); Mahmoudi et al., 2012; Phutthachon et al,, 2013; Wisutthilak et al., 2013; Phongwiritthorn, 2015; Pimklad et al., 2017; Chansuri & Siriwong , 2018; Richards et al., 2018; Duchesneau, 2020). The details of the analysis are tabulated in Table 1.

Table 1: Components of Creative Tourism Management in an Agricultural Community for Holistic Education

Reference list items	Creative Tourism Management in an Agricultural Community for Holistic Education											
	Knowledge, skills	Economic	Society lifestyle	Interaction	Value understanding	Exchange	Involved	Create experience	Binding side	Self improvement	Inspiration	Creative thinking
Duchesneau (2020)	✓	-	✓	✓	✓	✓	✓	-	✓	✓	✓	-
Mahmoudi et al. (2012)	✓	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓
Johnson (2010)	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	✓
Winidworakitkun (2003)	✓	-	-	✓	-	-	✓	✓	✓	✓	✓	-
Richards et al. (2018)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chansuri & Siriwong (2018)	✓	-	✓	✓	✓	-	✓	✓	-	✓	-	-
Pimklad et al. (2017)	-	-	✓	✓	-	✓	✓	-	-	✓	-	-
Phongwiritthorn (2015)	✓	✓	-	✓	✓	✓	✓	✓	✓	-	-	-
Wisutthilak et al. (2013)	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Phutthachon et al. (2013)	✓	✓	✓	✓	✓	-	✓	-	-	✓	-	-
Kaewsanga & Jumnongsorn (2012)	✓	✓	-	✓	-	-	-	✓	-	✓	-	-
Na Songkhla (2011)	-	✓	-	✓	✓	-	✓	✓	-	-	-	-
Frequency (12 items)	10	5	7	12	9	6	11	9	6	10	6	4

Creative tourism management in an agricultural community covers students' holistic study in three dimensions.

(1) *Interaction.* Students can interact with wise men or coaches or leaders of the agricultural community in various activities. They will be aware of the value and wisdom of that learning source. In accordance with Johnson (2010), the key principles of holistic education relate to the relationships between learners as well as learning from coaches or leaders for sharing local wisdom or knowledge specific to that particular agricultural community.

(2) *Access and Participation.* Learners are encouraged to access by participation; this is, the engagement concept of Phutthachon et al (2013), Wisutthilak et al (2013), and Richards et al. (2018). Students' access to the agricultural community via community tourism is in line with holistic education that emphasizes collaborative thinking and participation in life experiences (Patel, 2003; Johnson, 2010), Mahmoudi et al., 2012; Duchesneau (2020). Students' commitment is not constrained within the scope of responsibility and new standards prescribed by the school/ university's curriculum, and is therefore open to learners' initiative and creativity.

(3) *Collaboration between Community Leaders and Learners.* Community leaders and learners have opportunities for adaptation, further development, and improvement. To perceive the value of the agricultural area or the community, learners will see opportunities for adaptation (Wisutthilak et al., 2013; Richards et al., 2018). Shared participation in creating experiences between the community and tourists (or learners) will lead to information exchange for further development and improvement (Johnson, 2010; Duchesneau, 2020). Students can critically examine and define their values, and in turn can discover their potential for local tourism operations and related entrepreneurship.

6.2. Part 2: Best Practices of Creative Tourism Management in an Agricultural
Community for Holistic Education Promotion

The researcher conducted in-depth interviews with 15 key informants as reported in Section 5: Research Method. They were five senior tourism experts, entrepreneurs and instructors in public organizations; five instructors of holistic education subjects; and five entrepreneurs, farmers, and experts in local communities practicing New Theory Agriculture based on Sufficiency Economy. The results are reported in Table 3.

Table 3: Results of Interviews on the Best Practice of Creative Tourism Management in an Agricultural Community for Holistic Education Promotion

| Good practice guidelines for creative tourism management in an agricultural community	Interview results of 15 key informants (by Frequency of Responses)

1. Interaction to create understanding, exchange knowledge
    1.1 Interaction
        (Interaction)
    1.2 Understanding
        (Reflection)
    1.2 Exchange knowledge
        (Knowledge sharing)
	Having community leaders, farmers; farmers act as teachers. Lecturers give students the opportunity to ask questions to gain knowledge within the community (15). Real classrooms from real learning sources lead to discussions to find answers from practical people, create understanding in that knowledge (13). Knowledge is derived from traveling to see the learning base in various communities, such as the exchange of knowledge between the agricultural community, and the learners is the heart of holistic education. Learning the real problems from experienced leaders (12). Hands-on practice through practical activities and learning centers on agricultural communities, such as planting vegetables in the garden, harvesting fresh produce for consumption, seasonal fruits and vegetables; cooking with ingredients from the community lead to the variety of cooking classes available in the community; flower picking and flower arrangement teaching; burning of fruit charcoal (12). Good practice guidelines for field trips in the agricultural community are shared; broadcast from real experience (11).

2. Encouraging learners to access by participation, commitment, sharing, thinking, doing
  2.1 Access with participation
     (Participation)
  2.2 have a commitment to collaborate
     (Engaging and Emotional)
	Students are able to experience and learn about the ways of life of the community, see real things in various good practices apart from studying in a book or in class (13). Participation with practical training in activities and learning bases, such as processing and product development from agricultural products. Learning to garland with orchids flower arrangements in the area; learning how to raise animals (13). Students experience the ways of community, culture, and value in nature through new practices. Creativity of each community has a network of collaboration to work as a team with various sectors, such as organic gardening, preserving food and cooking according to local wisdom (10). Bonding Impressions and friendship, which develop social and emotional skills in learners (7).

3. Community leaders and learners have the opportunity to develop their potential.
  3.1 Learning exchange
     (Cognitive and exchange)
  3.2 Modifications
     (Adapt and Implementation)
  3.3 Leadership Development
     (Innovation and Evaluation)
	Learners develop themselves from the knowledge gained. Learned integrated farming according to the new agricultural theory; processing of organic products (11). Understand and gain knowledge through agricultural tourism activities; under the concept of the sufficiency economy philosophy (6). Self-development of community leaders, villagers in raising the level of agricultural wisdom to be of standard quality and an important source of learning outside the classroom (7). Practice from real things, creating skills; learning process Comparison of guidelines for self-development, determination, creativity to expand to one's own learning (7). Create a network of cooperation between agricultural communities in the area; networks between institutions for further expansion and value to the outside society (5).

4. Outcome of holistic learning
  4.1 Creating experience
     (Authentic experience)
  4.2 Creating, sharing, thinking,
	Learning outcomes of students from tourism in the agricultural community from real experience through various activities of agricultural communities (13). Learners receive knowledge and in-depth real experiences from community leaders, farmers and local

Good practice guidelines for creative tourism management in an agricultural community	Interview results of 15 key informants (by Frequency of Responses)
collaborating (Creativity) 4.3 Inspiration (Inspiration)	wise men (12). Learners enjoy their new perspective and are inspired to live and further develop themselves (10). Seeing good examples to encourage learners to share ideas and do activities; bringing about creativity and inspiration; be effective in various life and social skills (9). The role of learners and their interest in resources and tourism patterns in the agricultural community, stimulate learning about local wisdom (7).

From the interviews, the researcher found that the best practice of creative tourism management in agricultural communities in promoting holistic learning has emphasis on two dimensions:

(1) *Interaction between students and community leaders.* Students have the opportunity to ask questions to gain knowledge within the community. They can query things of their interest instead of being closely guided by the teacher in the classroom. In this regard, they learn from their dialogues with the members and leaders of the community. Then they gain real understanding and reflection on shared knowledge.

(2) *Encouraging learners to access by participating in activities and learning bases.* Students are emotionally engaged in participating in the learning base and guidance of community leaders. It is possible for learners to develop their potential in creative and problem-solving tasks. Improvement through adaptation of what they have seen and experienced can ignite their sense of leadership, inspiration for innovation and systematic evaluation concerned. Dimensions of professional skills and social skills are shown in Figure 3.

Figure 3: Results of Dimensional Holistic Learning
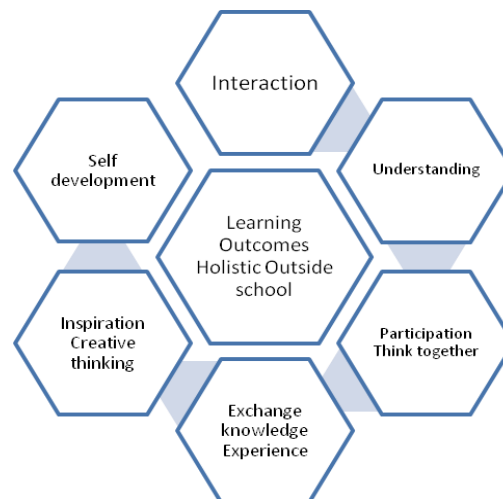
7. Conclusion and Recommendations

As stated earlier in the research objectives, the researcher examined two important areas of the best practice of creative tourism in agricultural communities in promoting holistic education. They were: (1) learners' interaction and knowledge dissemination and transfer for comprehensive understanding, and (2) learners' participation in collaborative thinking and taking actions based on the identified purpose. The first area involves skill training and implementation, while the second fosters inspiration, problem-solving task training, and creative thinking development. The results of the study from both documentary analyses and in-depth interviews as reported in Figures 1-3 and Tables 1-3 all point to the significance of *interaction* and *participation* in making good practices.

Creative tourism management by community activities with a focus on learning sources for schools/universities, as well as increasing value added for ecotourism are obviously off-classroom learning. Non-classroom learning resources for educational institutions at all levels support the concept of holistic education. Through community leaders, local philosophers and farmers functioning as *teachers or coaches*, students are transferred with knowledge with authentic experiences for *skill training and implementation*. Good practices of creative tourism management in the agricultural community in promoting holistic learning require (1) understanding of interaction in exchanging and sharing knowledge, (2) encouraging learners to participate in collaborative thinking, getting access to the sources of local knowledge, practice skills, and problem-solving skills, and (3) community leaders managing their community to exemplify to students' potential adaptation and application for good and healthy lifestyle.

Institutional arrangement for creative tourism as part of the holistic education curriculum can ensure learners' *participation* in collaborative thinking and taking actions based on the identified purpose. It is expected that participation can help foster *inspiration, problem-solving task training, and creative thinking development*. Creative tourism communities that support the role of educational institutions in integrating ecotourism activities into the community's local management, should certainly be willing to provide their *learning content and learning resources*. More importantly, the agricultural communities should have the need to make their creativity known to the public, and have strong leadership in coordinating teachers with their community members--farmers, local philosophers, and key villagers—to work collaboratively toward the common goal on creative tourism and holistic education.

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- Don Ae Don Kha Agriculture Village, Bang Phae District, Ratchaburi Province
- OTOP Agricultural Tourism Village Kaset Sombun District, Chaiyaphum Province
- Integrated Agricultural Tourism Community Enterprise Group Tha Mai District, Chanthaburi Province
- Phlisa Farm, New Theory Agriculture Learning Center, Organic Farm, Hua Hin District, Prachuap Khiri Khan
- Baan Suan Kla Tawan Resort, integrated agricultural garden without chemicals, health food, Phatthana Nikhom District, Lop Buri Province.

9. The Author

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Sharing Professional Viewpoint:
Key Elements of Innovative Chef in the 21st Century

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1. Introductory Note

In the past decade, the culinary world has changed exponentially. Food is no longer all about taste and *chef* is not all about cooking delicious food for hungry customers anymore. An ability to invent a specialty menu, both in terms of nutrition or sensation is essential for a future professional chef and related advanced careers. Job outlook information from U.S. Bureau of Labor Statistics (BLS) reported that demand for chefs and head cooks during 2014-2018 was increase by 11% and the average salary of the chef's position in fine dining or hi-end restaurants is elevated to USD 52,160 annually (www. bls. go). Such information points to high demand for professional chefs in a rather strong competition context. Previously, professional chefs usually start in the kitchen as assistants or line cooks. After years of experience, they could be promoted to a higher position and finally become head chefs. Most chefs accelerate their career path by attending the non-degree culinary program and combining their knowledge with experience.

As known, the twenty first century is the era of digital and technology, and creativity and innovation being emphasized in various professions; chef is no exemption. Even though a chef is able to climb up from a lower position to a supervisor chef; however, with high competition, chefs equipped with extra knowledge on top of their culinary skills and kitchen management will differentiate themselves to win in the arena. As a result, a professional degree has become an advantage for a chef to get into a management role throughout the hospitality industry. A Bachelor's degree could provide a secure path and a wide range of jobs including products and developments in the food and wellness industries. There are certain characteristics to make a successful chef such as multitasking, stress management, communication and dexterity. Nevertheless, to transform all these into an innovative professional chef is far beyond an academic program can render. Innovative chefs have to learn more about the fundamentals of health food, product development, knowledge in supplements, nutrition for niche markets, bioactive compounds in food as well as learning how to apply scientific know-how/ tools to create their signature menus.

2. Research Chefs

It can be noted that new line jobs of the twenty-first century require innovative chefs not confined to cooking; that is, *research chefs*, also known as product developers or food innovation chefs. The BLS reported that research chefs and food scientists were estimated to increase approximately 5% during the same decade. In comparison, higher paid of research chefs and food scientists was expected with USD 65,300 (median salary), while chefs and head cooks were able to make a median income of only USD 48,460 in year 2018. Research chefs' job description is to create or develop new products for food and beverage manufacturers as well as hotel and restaurant chains. Not only generating new recipes that look and taste good,

but research chefs would also able to substitute the old formulation with novel ingredients in order to add value to the products. They are expected to create health food and commercial product development, supplements, sports nutrition, and corporate and public health wellness. Research chefs need to possess science and technology knowledge, for they have to collaborate with food scientists in advanced food-processing regularly. A good understanding of preservation and shelf life of various packaged items is also necessary for research chefs in order to extend the product's life. For innovative chefs who want to own business, enterprise skills are needed to enhance career prospects with transferable and commercial skills in business development and product launching.

3. Considerations for an Innovative Chef Program

From the author's point of view, in order to nurture a chef into an innovative chef for hospitality and food and beverage industries, additional competencies are required. The promising program to cultivate the future chef should take the following key ingredients into consideration:

1. Mathematics

Calculating skills are needed for cooking and plays an important role for better understanding. However, a mathematics course for chefs should be different from general mathematics. Chefs need solid mathematical concepts for cooking, especially how to handle different weights and mass impact cooking time, how to break down the cost of each menu and pricing it in order to earn profit, how to convert measuring units for respective recipes, and the like. Practicing will help chefs to excel in those fundamental concepts.

2. Business administration

Since hospitality and food industries are still in the business sector, developing of enterprise skills will assist the organization to control the budget and earn some profit effectively. Chefs are not in charge of operating the entire business directly but they are in charge of almost everything related to food itself. As known, most chefs wish to have a business of their own. In this regard, taking an entrepreneurship course can really help them to figure out business operations as well as to handle the cost of food and labor, manage employees and diversify their menu items. Combining knowledge and skills of culinary art, kitchen management and food control will help them to develop a variety of good menus as well as their signature dishes.

3. Science and Technology

At present, knowledge and skills related to science and technology are dominant. Scientific tools and techniques will help chefs to create new innovative products responsive to target groups and easy for marketing. Future chefs should possess solid understanding in food technology, particularly food chemistry, food microbiology, food safety, product development and nutrition. Those concepts will be significant for innovative chefs in order to produce food with scientific claims but still appealing to their customers. Food chemistry courses are for chefs to get an idea of how the composition of food changes during cooking with various techniques which include interaction, combination, transformation and so much more. It should be noted that trending molecular gastronomy--a combination of science and art--is also well recognized as a modern cooking science providing lots of inventive idea to

chefs. Sciences will also help chefs to understand the impact of nutrition on health and related diseases. Chefs should know how to screen and identify people who are well-nourished or malnourished by using *anthropometric assessments* together with *nutritional assessment of diet*. With such knowledge, innovation could be in reality for chefs--after investigating the effect of macronutrients and micronutrients on human health and diseases--to create current diet trends, such as low sodium recipes, gluten free recipes, hi-fiber recipes, lactose free recipes, flexitarian, ketogenic, veganism, and 3D food printing technology, to name but the major ones.

4. Food Presentation.

From the literature, it has been proved that the sense of sight stimulates the appetite (Spence et al., 2010; Passamonti et al., 2009). Customers in the restaurant will experience their food through their vision and olfactory nerves before tasting. The most delicious meal without satisfactory scent and plate decoration may not provide customers with full appreciation. Therefore, basic understanding of art and food aesthetics is an essential element for a magnificent chef. Food aesthetics is an art of food plating that includes a number of techniques like how to effectively layer sauces, understanding the appropriate height and width of plate and food styling, and how to splash colors to enhance food presentation. The importance of the aesthetics of food is that it affects people's overall preferences by visual composition of food on the plate, and impact on the consumption experience. The food aesthetics experiment at the Science Museum in London, clearly demonstrated that people prefer balanced to unbalanced plate presentations of exactly the same ingredients for overall compositions (Velascoa et al., 2016).

4. Conclusion

The author has shown in this brief writing the new demands on professional chefs. Chefs are expected to be able to research into the menus they have created in terms of scientific knowledge in biochemistry and nutrition. Of course, an academic degree in culinary art and technology could serve as a good platform for those who wish to enter the world of chefs and excel in their career as research/ innovative chefs as well as creative entrepreneurs. Still, successful chefs need sharp senses for food, sustainability in professional self-development including language communication skills, and certainly without doubt, their ethical standards.

5. The Author

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6. References

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