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Assessing students' satisfaction towards agricultural learning services of the Royal Flora Ratchaphruek

Homhuan, O., Panpakdee, C.*and Borisutdhi, Y.

Department of Agricultural Extension and System Approaches, Faculty of Agriculture, Khon Kaen University, Khon Kaen, 40002, Thailand.

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Abstract The major findings revealed the students' mean satisfaction level to be 4.33 out of the 5.00 maximum score, interpreted as they were very satisfied. This high satisfaction is because of the excellence of learning courses and services provided by the Royal Flora Ratchaphruek that can fulfill the students' goals. The attending students stated their knowledge has enhanced with the up-to-date course contents applicable in daily life. Also, the altruistic and liberal nature of the instructors was considered being a beneficial and motivating factor for students to communicate both questions and ideas. However, the independent sample t-test revealed the statistically significant difference between male and female informants in terms of the mean value of satisfaction towards such agricultural learning services for the p-value < 0.05. Most means were found not statistically significantly different. Thus, this type of learning services should be established to inspire children to interest in agriculture. But edutainment's components such as attractive environments and enjoyable activities similar to the Royal Flora Ratchaphruek's must be integrated into the program. These components are vital not only get children to engage throughout the learning process but also let them explore the actual world of agriculture.

Keywords: Satisfaction, Agro-tourism; Agricultural learning, Royal Flora Ratchaphruek

Introduction

For the past few decades, the tourism industry of Thailand has been vital and gained the attention of policymakers and stakeholders as it has virtually provided the country's considerable economic income accounting approximately for 9 to 17.7% of the GDP (Baker and Pasuk, 2009). Agro-tourism, especially, has occasionally been viewed as a simple source of moneymaking as Thailand is known as an agricultural country endowed with diverse natural resources and geographic features. If this sector becomes well-established, not only the rural villagers can earn some secured income but also the local communities can have a promising sustainable development strategy (Kim *et al*., 2019).

Apart from the above benefits, previous studies associated with agro-tourism noted that the learning motivation is another agro-tourism's

* **Corresponding Author:** Panpakdee, C.; **Email**: chaitpa@kku.ac.th

key interest (Pitchayadejanant and Nakpathom, 2018; Pulido-Fernandez *et al.*, 2019). In many countries, agro-tourism is deliberately established to be applied as an educational media for encouraging their population, especially children to engage in the areas of agricultural development and environmental preservation as it can offer a space for children to experience such knowledge. Enjoyment and awareness additionally emerge while children are involved in agro-tourism. Most importantly, a thorough understanding among children of the public function of agriculture followed by their elevated awareness for environmentally friendly agricultural products is a significant contribution from agro-tourism (Chaipan, 2016). Consequently, the children may desire to later venture into the farming profession and institute a positive emotional affinity with agriculture as a result of their being allowed to explore new experiences (Panpakdee and Puangchaey, 2012; Khermkhan and Mankeb, 2018).

Indeed, agro-tourism has proved to be an efficient educational tool. However, children require influential factors for ensuring success in learning. As many traditional factors such as age, interest, motivation, and aspiration vary across individuals, agro-tourism management learning program can be a compromising catalyst as it is associated with not only the learners but also the educational processes. Under the learning viewpoint, the management is not about the repletion of infrastructural facilitation, including recreation and leisure activities to fulfill visitors' contentment; learning farming activities conducted in appropriate courses and by well-trained instructors centered on a place's settings should be concerned. Broccardo *et al.* (2017) opined that agro-tourism is an innovative business model whose potential can ensure the owner's economic benefit. However, agro-tourism is different in objectives and characteristics compared with other types of tourism as an obligation territory of cultural, historic, and educative customs cannot be ignored. Therefore, this paradigm of tourism should proceed consistently to the extent that agro-tourism is perceived as "a sustainable business strategy" for promoting socio-ecological development (Sonnino, 2004).

One of the earnestly pursued strategies to realize a kind of educative tourism can follow what has been used in other businesses' management: binding the relation between a specific tourism location and agro-tourists through publicly listening to and answering to the latter's feedbacks and demands (Flores, 1993). This is crucial to be implemented to bring into light tourists' first-hand insights to close the gap between their expectations and what agro-tourism can to provide (Itani *et al*., 2019). With this strategy, it is possible not only to increase the chance of economic sustainability but also to attract the tourists to visit repeatedly for educational purposes either for entertainment or for active involvement in agro-tourism (Srikatanyoo, 2007).

The Royal Flora Ratchaphruek, or the Ratchaphruek for short, is a well-known agro-tourism attraction located on 80 hectares at the Royal Agricultural Research Center in Mae-Hia Sub-district, Mueang District of Chiang Mai Province. Initially, the Ratchaphruek was purposively constructed as a temporary grand exhibition ground to display international gardens in 2006 for honoring the world's longest-reigning monarch, King Bhumibol the Great (Ninthaphan, 2013).

Nevertheless, from the extreme success of the event that had been considerably lauded by over 3 million visitors, both Thai and foreign, due to the dedicated landscapes consisting of beautiful botanical species, the Ratchphruek has generated approximately 27 billion baht to the regional economy. Since 3 June 2008, the Government has proposed the Ratchaphruek to remain the service permanently under the authorized supervision of the Highland Research and Development Institute – HRDI (Public Organization). This public opening was approved for several reasons. To utilize the International Horticultural Exposition site for economic profitability is an obvious reason. Besides, one of the principal missions of HRDI is to run an international-standard tourist attraction that allows visitors, especially adolescent students, to experience a variety of agricultural aspects and traditional culture. The group of adolescents is emphasized because Thailand is an agricultural country (CTN, 2012) but which is currently standing on an edge of food insecurity because of the aging population in the agricultural society in the era of low fertility (Thai Gerontology Research and Development Institute, 2015). Therefore, an experience facilitated by the Ratchaphruek and other agro-tourism providers is seen as a workable mechanism to inspire children and young generation people to enter the farming profession.

Now, the Ratchaphruek has been in operation for more than a decade welcoming about 500 visitors each day. The site, however, has not been studied in terms of consumer satisfaction specifically centered on agricultural learning services available for children. Therefore, the objectives were examined to assess the satisfaction towards the Royal Flora Ratchaphruek's agricultural learning services emphasized exclusively at students, and to provide suggestions to improve the Royal Flora Ratchaphruek's agricultural learning services for being more efficient in persuading students to engage in the farming profession.

Materials and methods

This study was specifically designed to focus on the micro-level of elementary school. To accomplish the study objectives, data were collected from January 2020 to April 2020. The finite population was 80 students from schools that had signed an official agreement with the Ratchaphruek to send their voluntary students to take part in the agricultural learning session

held every Wednesday of the week during the period of the data collection. Then, the sample size was determined by the Yamane formula with a 95% confidence interval (Yamane, 1967), resulting in 66.67 informants. The number was subsequently rounded up to be 67 informants.

The informants were interviewed using a questionnaire consisting of both closed-ended questions and open-ended questions, of which the first set of questions involves the five-point Likert scale. The questionnaire was co-designed by the researchers and three instructors of the Ratchaphruek to validate the credibility, including the usefulness that would be given by the questionnaire's information.

The obtained data were processed into descriptive statistics (means, percentage, frequency, and standard deviation) with the facilitation of Statistical Product and Service Solutions 19.0.2 (SPSS). Then, the means computed by the score combination of entire questions were arranged into written languages conducted by the principle of class intervals based on that five-point Likert scale to make such means more meaningful (Jamieson, 2004). Also, the independent sample t-test and one-way ANOVA were computed to determine the statistical mean difference between male and female informants and the difference across educational groups of the entire informants concerning their satisfaction towards the Ratchaphruek's agricultural learning services.

Results

The informants' demographic and socio-economic characteristics are shown in Table 1. Out of the total 67 informants, 36 (53.70%) were female and 31 (46.30%) were male. The majority of them, approximately 55% were more than 12 years old while the remaining 45% were 9 to 12 years old. By educational level, the distribution was roughly 43%, 33%, and 24% in Grade 4, 5, and 6, respectively.

Table 1. The informants' demographic and socio-economic characteristics

Item	Category	Frequency	Percentage
Sex	Male	31	46.30
	Female	36	53.70
Age (year)	9 to 12	30	44.80
	> 12	37	55.20
Educational level	Grade 4	29	43.30
	Grade 5	22	32.80
	Grade 6	16	23.90

The informants' visiting frequency to attend the agricultural learning sessions available at the Ratchaphruek was shown in Table 2. The result showed that 62 out of 67 informants (around 93%) had come to this venue

for more than one occasion. Only 5 informants or 7.46% that had ever been to the Ratchaphruek as their first-time experience.

Table 2. The informants' visiting frequency to attend the Ratchaphruek agricultural learning sessions

Visiting frequency	No. of the informants	Percentage
First time	5	7.46
A few times	7	10.45
More than 3 times	55	82.09
Total	67	100

Table 3. The informants' visiting frequency to receive the Ratchaphruek's agricultural learning services

Item	Mean	SD	Satisfaction level
The respectability of agricultural courses set by the Ratchaphruek			
Knowledge level enhanced by the agricultural courses	4.58	0.555	Very satisfactory
The respectability of the agricultural courses fit for both learning and understanding	4.46	0.611	Very satisfactory
The respectability of the agricultural courses fit for applying in daily life	4.36	0.773	Very satisfactory
The respectability of the agricultural courses fit for participating throughout	3.97	1.015	Somewhat satisfactory
Total	4.34	0.524	Very satisfactory
Matters of service quality of the staff			
Service quality of teaching and recommendations	4.39	0.738	Very satisfactory
Service quality of communication techniques	4.34	0.664	Very satisfactory
Service quality of delivering knowledge and activities fit for present circumstances	4.57	0.657	Very satisfactory
Service quality of providing the opportunity for asking questions and expressing ideas	3.99	0.862	Somewhat satisfactory
Total	4.32	0.466	Very satisfactory

As mentioned earlier, the level of the informants' satisfaction towards agricultural learning services would be tested. The evaluation was divided into two categories with each having equally four sub-groups:- respectability of the agricultural learning program set by the Ratchaphruek, and service quality of the instructors.

The overall score averaged 4.34 to appropriate the agricultural learning program that can be interpreted literally as very satisfactory which reported in Table 3. The highest satisfaction level revealed for the agricultural knowledge the informants that received as most of the agricultural learning modules to be up-to-date, and practical for application in daily life. Besides, the agricultural learning modules are systemically arranged from basic knowledge to much complicate. The arrangement was

beneficial in enabling the informants to catch up and to progressively understand the course contents.

Regarding the quality of services in various matters delivered by the Ratchaphruek's instructors, the overall mean of 4.32 out of 5.00 is interpreted as very satisfactory and it was attributable the most to the instructors' abilities in tailoring a set of knowledge and activities fit attitudes, circumstances, and perceptions of the informants. The next most important contributors were the techniques associated with teaching and the proper communication with the scores of 4.39 and 4.34, respectively. The informants pointed out they had impressed with the staff's communication skills, of which both verbal and non-verbal languages had been used in a diversified manner. These motivate the informants to take part wholeheartedly in the learning program.

Table 4. The means of satisfaction towards the Ratchaphruek's agricultural learning services compared between the male and female informants

Item	**Sex**				**t**	**Sig.**
	Male n = 31		**Female n = 36**			
	Mean	**SD**	**Mean**	**SD**		
The respectability of agricultural courses set by the Ratchaphruek						
Knowledge level enhanced by the agricultural courses	4.52	0.508	4.64	0.593	.370	.095
The respectability of the agricultural courses fit for both learning and understanding	4.42	0.564	4.50	0.639	.655	.075
The respectability of the agricultural courses fit for applying in daily life	4.26	0.729	4.44	0.809	.329	.276
The respectability of the agricultural courses fit for participating throughout	3.81	0.910	4.11	1.090	.233	.082
Matters of service quality of the staff						
Service quality of teaching and recommendations	4.29	0.824	4.47	0.654	.318	.097
Service quality of communication techniques	4.26	0.729	4.42	0.604	.333	.142
Service quality of delivering knowledge and activities fit for present circumstances	4.48	0.724	4.64	0.593	.339	.489
Service quality of providing the opportunity for asking questions and expressing ideas	3.94	0.727	4.03	0.971	.665	.719

* Significant at the 0.05 level

Table 5. The means of satisfaction towards the Ratchaphruek's agricultural learning services compared across the educational levels

Item	Educational level						F	Sig.
	Grade 4 n = 29		Grade 5 n = 22		Grade 6 n = 16			
	Mean	SD	Mean	SD	Mean	SD		
The respectability of agricultural courses set by the Ratchaphruek								
Knowledge level enhanced by the agricultural courses	4.55	0.506	4.64	0.492	4.56	0.727	0.155	.857
The respectability of the agricultural courses fit for both learning and understanding	4.41	0.568	4.59	0.590	4.38	0.719	0.736	.483
The respectability of the agricultural courses fit for applying in daily life	4.41	0.733	4.59	0.590	3.94	0.929	3.729	.029*
The respectability of the agricultural courses fit for participating throughout	4.03	1.085	4.32	0.780	3.38	0.957	4.547	.014*
Matters of service quality of the staff								
Service quality of teaching and recommendations	4.41	0.682	4.41	0.796	4.31	0.793	0.108	.898
Service quality of communication techniques	4.41	0.682	4.36	0.492	4.19	0.834	0.607	.548
Service quality of delivering knowledge and activities fit for present circumstances	4.62	0.682	4.55	0.796	4.50	0.793	0.187	.830
Service quality of providing the opportunity for asking questions and expressing ideas	3.97	0.906	4.05	0.950	3.94	0.680	0.084	.920

* Significant at the .05 level

The quality of creating a favorable learning environment came from least satisfactory at 3.99. According to the informants' response to the interview, the instructors were compassionate and sensitive to monitor their

differences. Therefore, the informants were occasionally given productive surroundings to ask questions and to share opinions with the instructors. However, there were noticeable defected for requiring correction to accomplish a higher level of satisfaction. For example, there was no blackboard installed at a few agricultural learning locational units. When it is unavailable, the informants are difficult getting a grasp on topics whose contents and information are more preferred to be explained visually instead of verbally solely. Consequently, when they cannot perceive the knowledge in those topics, they could not ask a question and expressed the ideas.

Then, the independent sample t-test was performed to compare the means between male and female informants' satisfaction towards the Ratchaphruek's agricultural learning services. The satisfaction means between male and female informants were significantly different because the p-values are all higher than 0.05 as presented in Table 4.

Means across different groups of the informants were compared by educational levels got from the Analysis of Variance (ANOVA) is shown in Table 5. The finding revealed that three out of the eight aspects, namely the respectability of the agricultural courses fit for both learning and understanding, the respectability of the agricultural courses fit for applying in daily life, and the respectability of the agricultural courses fit for participating. All were embedded in the respectability of agricultural courses set by the Ratchaphruek were different. Their p-values were less than the significant level of 0.05. In other words, there was evidence that the variances regarding these aspects for the two groups, male and female informants, were not the same manner. Meanwhile, the p-values of the remaining five aspects were higher than P 0.05. Therefore, it concluded that the difference in means was not significantly differed.

Scheffe's test was run to identify which pairs of means were statistically significant as displayed in Table 6. It pointed out with a P 0.05 significant level that there was a difference between Grade 6 and Grade 4. But not between Grade 5 and Grade 4 regarding means of satisfaction with the Ratchaphruek's agricultural learning services was found.

Table 6. The Comparison of the differences in pairs of the informants' satisfaction towards the Ratchaphruek's agricultural learning services

Educational level	**Grade 4**	**Grade 5**	**Grade 6**
	($\bar{x}$ = 4.03)	($\bar{x}$ = 4.32)	($\bar{x}$ = 3.38)
Grade 4 ($\bar{x}$ = 4.03)		-.284	.659*
		.302	.032*
Grade 5 ($\bar{x}$ = 4.32			
Grade 6 ($\bar{x}$ = 3.38)			

* Significant at the 0.05 level

Discussion

The overall score of the students' satisfaction on the Ratchaphruek's agricultural learning services concerning the respectability of the agricultural learning program and the service quality of the instructors combined was 4.32. This score can be interpreted as very satisfactory. It was obtained by the instructors' qualities in delivering knowledge arranged from a bit of knowledge to more complicated ones, including activities fit for the present, easily making the learners understanding. Also, this prominence had no difference between the male or female students. These findings are in accordance with the study of Mean *et al*. (2010), who indicated that the ability of instructors can significantly affect learners' satisfaction. Quality instructors, who are aware of how to conduct the learning process called 'the value of effective metacognition,' are likely to divide lessons into parts connected with each other in a systematic format. The separation not only takes place to enhance learning efficiently, but also to induce open-mindedness and motivation of the learner. Simply, the basic topic can be learned better than the complicated topic (Learning Liftoff, 2019). For example, if students want to take sustainable development courses, then they would need to know the definition and description of sustainability before going beyond that which relates to the lesson (FAO, 2015). From the mentioned example, when the students were authorized to accumulate prerequisite knowledge of a subject, they had put more interest into the following subjects.

But Scheffe's test revealed that the difference in pairs of the informants existing in the educational levels. The statistical result stated that Grade 6 and Grade 4 were dissimilar on the satisfaction with the Ratchaphruek's agricultural learning services. This was not surprising. Important factors, which influence the satisfaction and dissatisfaction associated with learning, are moderately varying with age (Tullis and Benjamin, 2012). Pintrich (2003) stated that each age group is tied to a specific experience and preference.

In this study, it can be concluded that one of the workable recommendations to persuade Thai children to pay more attention to farming, whether for an alternative profession against the dynamically changing world or substituting the domestic aged farmers, is the duplications of the Ratchaphruek's agricultural learning bases around the country. This offers the visitors knowledge and motivates them a strong interest in agricultural activities.

There are constitutive parts for being concerned together with the establishment of new agricultural learning stations. Well-trained and adept

instructors, who are enthusiastic to service the visitors, are foremost. Besides, the completeness of having necessary components such as biodiversity, pleasant sceneries, and infrastructures likewise the Ratchaphruek's is optional. These elements are indispensable. It facilitates the instructors to educate students through the manner of edutainment supplemented by approval environments. Edutainment and a pleasant learning environment are vital to accomplishing children's educational goals as it has acknowledged that to make learning more enjoyable (Pasawano, 2015).

Finally, the active cooperation between agricultural learning stations and external sectors such as educational institutes cannot be neglected. Learning agricultural knowledge is alike every discipline in an aspect that devotion is requisite. Therefore, if the schools' supports of the budget, scheduling arrangement, and transportation to serve this learning are not well-organized, to gain agricultural knowledge in the way the informants in this study have gone through may be doubtful (OECD, 2020).

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