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EVALUATING SERVICE QUALITY OF LEISURE FARMS: THE TAIWAN CASE

Jennifer Min
Professor, Department of International Business
Ming Chuan University, Taipei, Taiwan
Corresponding Author: jennifer_min.tw@yahoo.com.tw

Chien-Lin Lin
Associate Professor, Department of Tourism and Leisure
Hsing Wu University, Taipei, Taiwan

Vivian Hui-Wen Tang
Professor, International Business Department,
Ming Chuan University, Taoyuan City Taiwan

Abstract

In the face of environmental changes, the traditional agricultural industry in Taiwan has transformed into leisure farms to achieve greater economic efficiency and increased supplementary profits. However, while the government has devoted considerable efforts to promoting the service quality of leisure farms, there has been relatively little discussion or awareness of the need to evaluate the farms service quality. Therefore, this study aims to assess service quality performance by farm visitors using IPGA (Importance-Performance Analysis (IPA) and Gap model) to determine how tourists perceive farms' service quality while touring. This study additionally aims to identify service quality areas that need further improvements. A convenience sampling strategy was used to recruit 880 tourism visitors from 15 leisure farms island-wide. Overall, the results indicated most farms were not adequately meeting visitors' expectations. Suitable service quality improvement plans and strategies are proposed based on the findings. In practice, the information could serve as a reference

for tourism authorities and farm operators/managers to identify priority service needs and allocate resources to meet farm visitors' expectations.

Keywords: leisure farms, agricultural industry, service quality, farm tourists, priority

Introduction

Leisure farms, one of the fastest growing sectors in the tourism industry, has increased significantly and drawn great attention in developed and developing countries over recent decades (Tsaur, Yen, & Ku, 2017). The growth of leisure farms has also been recognized in Taiwan over the last few decades. Since Taiwan sought membership in the World Trade Organization (WTO) in 2002, the government has encountered numerous challenges. Seeing as the agricultural industry is often the first to face challenges of market and price competition, Taiwan's government has made efforts to promote agricultural diversification in order to reduce long-term adverse effects of new competition in this industry. Moreover, seeing as Taiwan has developed in the relatively wealthy and economically strong Asia-Pacific region since 1980s, there has been a surge in travel in the area for the purposes of relaxation and enjoying nature. The government implemented two-day weekends on a bi-weekly basis in 1998, and then on a weekly basis since 2001, for the purpose of providing Taiwanese people with more leisure time for recreational pursuits, thereby encouraging domestic tourism. Faced with these changes in the external and internal environments, one of the key steps on the path to agricultural diversification is the development of leisure farm enterprises (Miller & Hsu, 2003). According to the Council of Agriculture (COA) (2018), which is in charge of creating and enforcing Taiwan's agricultural policies, there were four registered leisure farms in 2002, the year Taiwan became a member of the WTO. This number rose 74-fold over a ten-year period, and in 2018, there were 296 registered leisure farms, the majority of which were owner-managed, with an average of 16 employees.

The significant role of service quality in business success has been well acknowledged. Delivery of high service quality can help organizations gain a competitive advantage and differentiate themselves more effectively in the marketplace (Min, 2016). However, although extensive literature has been devoted to the service quality in the tourism field, there has been relatively little discussion of the service quality of farm tourism. This is a worthwhile area of research, as Taiwan's government has made many efforts to develop domestic travel products with unique characteristics and green travel, and developing farm- based tourism is one of the more important strategies in these efforts (Tourism Bureau, 2017). Kosmaczewska (2008) argued that the travel market should focus on quality as an important competition factor, especially given that tourists are increasingly demanding and environmentally-conscious. Moreover, leisure farms need to focus on under-

standing tourists' perceptions of service quality if they are to succeed in this competitive business environment. Service quality is a crucial factor in differentiating businesses, and it is thus a powerful weapon for gaining a competitive advantage (Min, 2016). This is an especially pertinent issue to leisure farms, as the rapid growth of this market has resulted in an inconsistent approach to service quality (Tseng, Wu, Lee, & Liao, 2008). In acknowledgement of the significance of a leisure-farm's service quality, the government and the Taiwan Leisure Farming Development Association (TLFDA) have registered the trademark since 2010. This is used to identify a leisure farm's service quality so that tourists can recognize its certification. These specific farms must be evaluated every year to retain their trademark. According to the TLFDA's report (2017), the numbers of accumulated leisure farms certified for leisure farm service quality were 21 in 2011 to 36 in 2017.

Although efforts to promote farm service quality have attracted the attention of authorities and practitioners in recent years, these efforts have focused primarily on supply-side aspects, and there remains a scarcity of awareness from the perspectives of farm tourists to evaluate the service quality they receive during touring. Flanigan *et al*. (2014) argue that most of the research tends to focus on supply side aspects of farm tourism, and "demand-side perspectives are more limited" (p. 395). Consideration of both supply- and demand-side perspectives is an important feature for the everyday practice of leisure farms. In order to render high quality of services to farm visitors, it is imperative that Taiwan's government introduce monitoring and evaluation measures, from the demand perspective, as these serve to emphasize the importance of service quality management and operations. Consequently, offering outstanding service quality will not only help farm businesses to satisfy the tourists but will also help increase the market competitiveness, which is crucial in this highly competitive market.

The 22-item SERVQUAL scale introduced by Parasuraman *et al*. (1988) is widely used for measuring service quality across various industries. Therefore, after receiving permission from the authors of SERV- QUAL to adapt and modify the SERVQUAL items, the framework of PZB is applied and the service quality criteria are derived from existing literature and expert opinions to reflect particular leisure farm characteristics. Accordingly, efforts are made to assess service quality performance by farm visitors using IPGA, importance-performance analysis (IPA) and Gap model, to determine how tourists perceived the service quality of farms while touring and identifying service quality areas that need further improvements. This information will help make the service providers aware of their service quality performance, especially in terms of important service elements with respect to the locations of the satisfaction index and the expectations index on the matrix. After completing such an assessment, suitable service quality improvement plans and strategies can be proposed. In practice, the information can serve as a reference for tourism authorities and farm operators/managers to

identify the priority needs of service and allocate resources to advance the service of farm providers to meet farm visitors' expectations.

Importance-performance Gap Analysis (IPGA)

Since Martilla and James (1977) introduced the technique of Importance-Performance Analysis (IPA), it has been widely used in a variety of fields. IPA provides a simple graphic approach that is designed to compare the mean score for "perceived importance" with the corresponding "satisfaction rating" using a two- dimensional grid and categorizing it into four quadrants, resulting in an assessment of strengths and weaknesses. After identification of the attributes, the respondents are asked to answer two questions about each of the attributes; these are "How important is it?" and "How well did it perform?". Items are situated in one of four grid quadrants based on the reports of respondents' selections.

While the IPA model remains as a convenient tool for assessing quality, alternate studies indicate that this model has deficiencies when applied practically. For instance, Lin *et al*. (2009) state that it fails to integrate the quality gap concepts regarding the difference between customers' expectations and perceptions. Furthermore, the means assessment could possibly result in a subjective conflict (Cheng *et al*., 2012). Thus, Lin *et al*. (2009) developed the Importance-Performance Gap Analysis (IPGA) model through function conversion by including IPA and Gap Analysis (GA). Since GA measures service quality only in terms of the values and directions of the gaps without taking into consideration their degrees of importance to customers, it fails to give management an accurate interpretation of how service quality should be improved. the same way as the original Martilla-James diagram.Attributes located in the quadrant *Concentrate Here* are perceived to be very important to respondents and the performance levels are seen relatively low, suggesting that improvement efforts should be concentrated in this area. Attributes situated in the quadrant *Keep Up the Good Work* are perceived to be relatively important with a relative high performance, implying a good work ethic. Attributes presented in the *Low Priority* area are rated as having low relative performance and low relative importance to respondents. It is suggested that limited resources should be expended on these attributes and mangers should not be overly concerned. The attributes consisting of high relative performance and low relative importance are located in the quadrant *Possible Overkill*. It is suggested that present efforts on these attributes are over-utilized and unnecessary in this cell.

According to the Lin *et al*. (2009), the application process of the IPGA model includes the following four steps:

Step 1: Evaluate tourist expectations on service attributes (I_{ij}) and their perception of these expectations (P_{ij}).

Step 2: Calculate attributes' RI and RP.

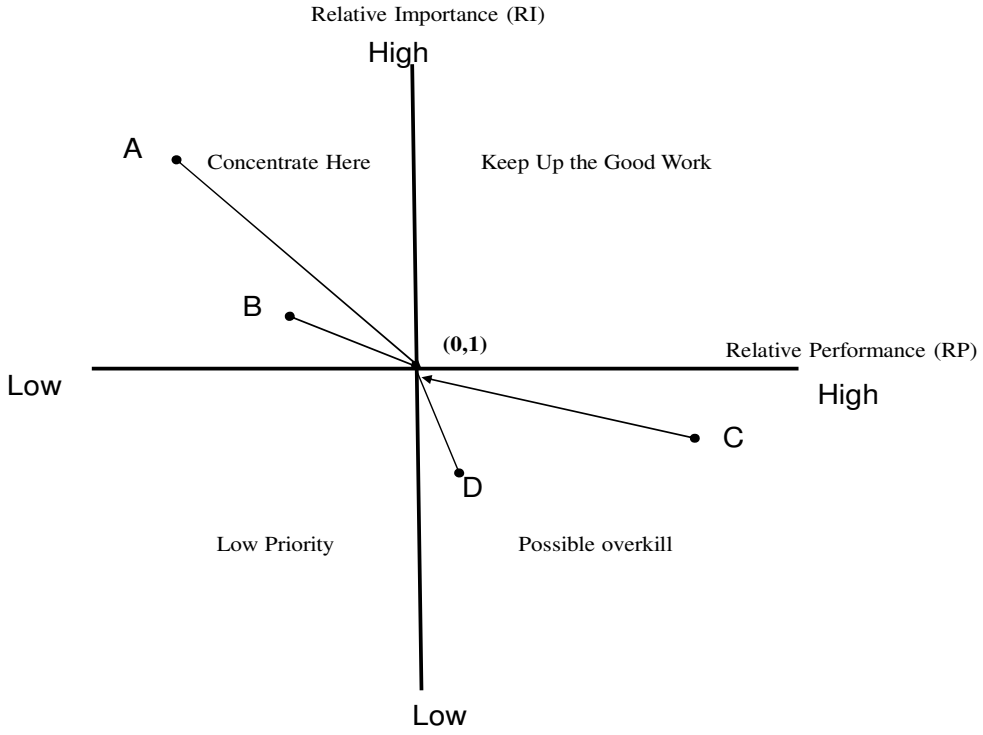

Figure 1. IPGA matrix

a. Calculating the tourist's Relative Importance (RI)

$$RI(j) = \bar{I}_{.j} / \bar{I}_{..} \qquad (1)$$

The function RI is the relative importance of jth attribute as compared to the total average value.b. Calculating the tourist's Relative Performance (RP).

The average performance of the jth attribute is $\bar{P}_j$, the average importance of the jth attribute is $\bar{I}_j$, and the total average performance is $\bar{P}$

Step 3: Depict the Importance-Performance-Gap Matrix (IPGM).

The relative importance of the service attributes is plotted as the vertical axis; the relative performance is plotted as the horizontal axis. When the average importance $\bar{I}_j$ of the jth attribute is equal to the total average importance, the relative importance RI(j) of the jth attribute is 1, thus the dividing point of the matrix's vertical axis is 1. When there is no significant difference between the average performance and importance of the jth attribute, the value of the RP(j) is 0, and the dividing point of the matrix's horizontal axis is 0. Therefore the intersection coordinate of the IPGA matrix is (0,1).

Step 4: Identify the attributes needing improvement and list their order of priority.

Attributes situated in the Concentrate Here Quadrant of the IPGA matrix

are perceived to have high relative importance but low relative performance; their priorities for improvement and resource adjustment will be more urgent as they are farther away from the dividing point. The distance function is shown as below:

$$D_j = \sqrt{\left(\frac{RP_j}{\underset{r}{Max}\,|\,RP_r\,|}\right)^2 + \left(\frac{RI_j - 1}{\underset{r}{Max}\,|RI_r - 1|}\right)^2} \quad (2)$$

In the above function, the distance Dj between the jth attribute in Quadrant II and the intersection coordinate can be obtained through the above standardized procedure function.

Methodology

The present study involves the collection and analysis of quantitative data in order to determine how tourists perceived the service quality of leisure farms while touring and identifying service quality. Before conducting the current study, it was reviewed and approved by the Institutional Review Board (IRB). The study now meets the requirements of the IRB, one of which requires that all participants of the study should be aged 20 and above. The current study used SERVQUAL as the basis and adapted the scale to reflect particular leisure farm-specific characteristics. The qualitative methods used included a review of the literature and in-depth interviews. The literature review consists of reviewing, comparing and contrasting relevant research literature related to the topic of this study. Then, one-on-one interviews of leisure farmers/managers and farm tourists (supply and demand perspectives) were conducted to obtain information from the interviewees' different points of view using open-ended questions. Before interviewing, the concept, construct and definition of tourism service quality were introduced, and the unstructured questions were then queried. With regard to the service providers (farmers/managers), the service quality issues were examined in the interview. On the other hand, farm visitors were asked to talk about their opinions regarding farm providers' service, based on their knowledge and experiences from prior visits to leisure farms, to help identify and elicit more specific information about tourism service.

With regard to the applicability of each item to the current study, interviews were conducted to collect seven expert opinions: one governmental officer, one practitioner, and five university professors in the field of tourism/leisure management. Expert opinions were collected, common agreements were reached, and revisions were made in order to make items applicable to leisure farm characteristics. The content validity of the questionnaire was deemed adequate. The 31-item instrument includes six dimensions, namely *Tangibles*, *Reliability*, *Responsiveness*, *Assurance*, *Empathy* and *Accessibility*.

The questionnaire consists of two parts. The first part is designed to measure the respondents' expectations and perceptions regarding the quality of services offered by the leisure farms.

Visitors were asked to rate the perceived importance of each service attribute using a 5-point Likert scale from "Least Important" to "Most Important".

The performance for each service attribute was rated using a 5-point Likert scale from "strong disagree" to "strongly agree". Prior to the survey, a pilot test had been conducted to assess the reliability of the attributes and to ensure that the wording of the questionnaire was clear. Fifty questionnaires were completed. Reliability analysis was also applied to test the internal consistency of each expectation and perception attribute. The results showed that the Cronbach's α coefficients of the expectation and satisfaction were 0.933 and 0.953 respectively which means they were internally consistent and reliable.

A convenience sampling strategy was used to recruit 880 tourism visitors from 15 leisure farms island-wide. In order to increase the response rate of the survey, upon completion of the questionnaires, very respondent was given a gift. Tourists filled out and returned the questionnaires in the farms. Of the returned surveys, 67 questionnaires were incomplete and eliminated from the final sample, resulting in a total valid sample of 813, for a 92.4% response rate. The analytic results showed that the Cronbach's α coefficients of the expectation for each service quality dimension is between 0.721 and 0.813, and the Cronbach's α coefficients of the satisfaction for each service quality dimension were between 0.720 and 0.806. And the results showed that the Cronbach's coefficients of the expectation and satisfaction were 0.857 and 0.885. Thus, it indicated a good reliability for this scale.

Results

The final sample consisted of 813 farm visitors, of whom 411 were males (50.6%) and 402 were females (49.4%).

Importance and Satisfaction Ratings of Service Attributes

As Table 1 shows, 21 out of 31 attributes had mean scores greater than "4", and thus are considered to be at least 'fairly important'. The respondents perceived all leisure farm service attributes as important (rages from 4.171-3.822), and the mean was 4.023. The attribute of "A18: Ample Safety Arrangements" is perceived as the most important attribute, with the highest mean of 4.171. The attribute of "E21: Experience was Physically Challenging" comes close in second with a means of 4.126, followed by "C26: Service Information Easily Accessible" with a mean of 4.116. All attributes in both the *Reliability* and *Assurance* dimensions are rated above 4. Conversely, respondents considered the "E22: Tourists' Best Interests were at Heart", the "E23: Flexible Business Hours Offered" and the "C31: Multiple Payment Choices Available" as the least important attributes.

The mean of satisfaction rating, on the other hand, was 3.881, whereas all attributes averaged less than 4 (rages from 3.990-3.792). The attribute of "C27: Convenient Access to Up-to-Date Information" received the highest satisfaction rating with a mean of 3.990. The next highest ratings included "T1: Modern Facilities Available" and "C26: Service Information Easily Accessible" with means of 3.958 and 3.956 respectively. In contrast, the respondents were

least satisfied with "E23: Flexible Business Hours Offered" with a mean performance score of 3.792. Overall, the respondents were not satisfied with the leisure farm service (with means of importance and satisfaction 4.023: 3.881), indicating the farm service attributes should be improved.

Gap Analysis

In the present study, tourist gap is the difference between tourist perceptions and expectations. Paired sample *t*-tests were used to test if such a gap existed. The average means of service performance perceived by the tourists were all lower than those of their expectations except the attribute "C31: Multiple Payment Choices Available", which was slightly higher than expectation (Table 1). Twenty-four out of thirty-one of these differences were statistically significant at the 0.05 level. The results revealed that, overall, these leisure farms were not doing a good job of meeting tourists' expectations. The largest gaps existed in the attributes such as "E24: Convenient Access for Disabled Tourists"; "A18: Ample Safety Arrangements", and "E21: Experience was Physically Challenging". In contrast, the gaps associated with "C28: Accessible On-Site Equipment" and "C27: Convenient Access to Up-to-Date Information" were comparably smaller.

IPGA Analysis

According to Table 1, there are significant differences between tourist perception and expectation (negative gaps) for most of the attributes, suggesting that the service of the leisure farms could not satisfy the tourists. Thus, this study applied the IPGA model to analyze the 31 leisure farms service attributes and explore the service quality gaps (Table 2). In reference to the IPGA model, this study converted the performance and importance values into RP and RI (Table 2). Then, the IPGA strategy matrix was depicted by taking RP as the x-axis and RI as the y-axis. The dividing point (0,1) set the matrix into four quadrants. The service attributes were plotted into the matrix in terms of their relative performance and relative importance, as shown in Figure 2. The results found that there are 18 attributes located in the Concentrate Here quadrant as being of high relative importance as perceived by the tourists but with low relative performance. These attributes include 2 out of 5 items in the *Tangible* dimension (1 and 5), all 4 items in the *Reliability* dimension (6, 7, 8 and 9), 2 out of 4 items in the *Responsiveness* dimension (12 and 13), all 5 items in the *Assurance* dimension (14, 15, 16, 17 & 18), 3 out of 7 items in the *Empathy* dimension (21, 24 and 25), and 2 out of 6 items in *Accessibility* dimension (26 and 27). It is necessary for farm operators/managers to concentrate here with extra work, especially for the reliability

Table 1. Gaps analysis for leisure farms' service quality

Leisure Farms Service Attributes	tourists' ***Expectation (E)***	tourists' ***Perception (P)***	tourists' ***Gap (P-E)***
T1	4.055	3.958	-0.097**
T2	3.887	3.876	-0.011
T3	3.918	3.894	-0.023
T4	4.023	3.886	-0.138***
T5	4.090	3.864	-0.226***
R6	4.076	3.860	-0.217 ***
R7	4.092	3.884	-0.208***
R8	4.081	3.875	-0.207***
R9	4.084	3.902	-0.182 ***
RR10	4.012	3.823	-0.189 ***
RR11	3.989	3.902	-0.087*
RR12	4.095	3.921	-0.173***
RR13	4.097	3.934	-0.164***
A14	4.091	3.897	-0.194***
A15	4.028	3.875	-0.154***
A16	4.116	3.910	-0.205***
A17	4.073	3.904	-0.169***
A18	4.171	3.877	-0.294***
E19	3.977	3.833	-0.144***
E20	3.905	3.817	-0.089*
E21	4.126	3.855	-0.271***
E22	3.822	3.797	-0.025
E23	3.852	3.792	-0.060
E24	4.094	3.795	-0.299***
E25	4.033	3.817	-0.217***
C26	4.116	3.956	-0.160***
C27	4.070	3.990	-0.080*
C28	4.007	3.929	-0.079*
C29	3.884	3.870	-0.015
C30	3.998	3.953	-0.044
C31	3.866	3.868	0.002
Mean	4.023	3.881	

*p<0.05, **p<0.01, ***p<0.001

Notes 1: T: *Tangibles*; R: *Reliability*; RR: *Responsiveness*; A: *Assurance*; E: *Empathy*; C: *Accessibility*

Note 2: T1 Modern Facilities Available
T2 Visual Appeal
T3 Appropriate Staff Appearance
T4 Appropriate Facilities and Services
T5 Dining Area-Sanitary and Comfort Levels
R6 Prompt Service Provided
R7 Employee Collaborative Efforts Maintained Efficiency and Quality
R8 Transportation, Operating Hours and Promotional Information Readily Available
R9 Employees Knowledgeable of all Services
RR10 Employees Promptly Opened According to Set Hours
RR11 Employee Communication Capabilities
RR12 Employees Willingly Solved Tourists' Problems
RR13 Employees Allotted Time to Help Tourists
A14 Employees Delivered Satisfactory Service
A15 Satisfied with Services Rendered
A16 Staff was Well-Trained and Experienced
A17 Employees Equipped with Professional Skills
A18 Ample Safety Arrangements
E19 Tourists' Needs Sufficiently Met
E20 Employees Concerned about Tourists
E21 Experience was Physically Challenging
E22 Tourists' Best Interests were at Heart
E23 Flexible Business Hours Offered
E24 Convenient Access for Disabled Tourists
E25 Provided an 'At Home' Atmosphere
C26 Service Information Easily Accessible
C27 Convenient Access to Up-to-Date Information
C28 Accessible On-Site Equipment
C29 Channels Provided for Tourists' Feedback
C30 Employees Available at all Times
C31 Multiple Payment Choices Available

Figure 2. The IPGA strategy matrix for leisure farms' attributes

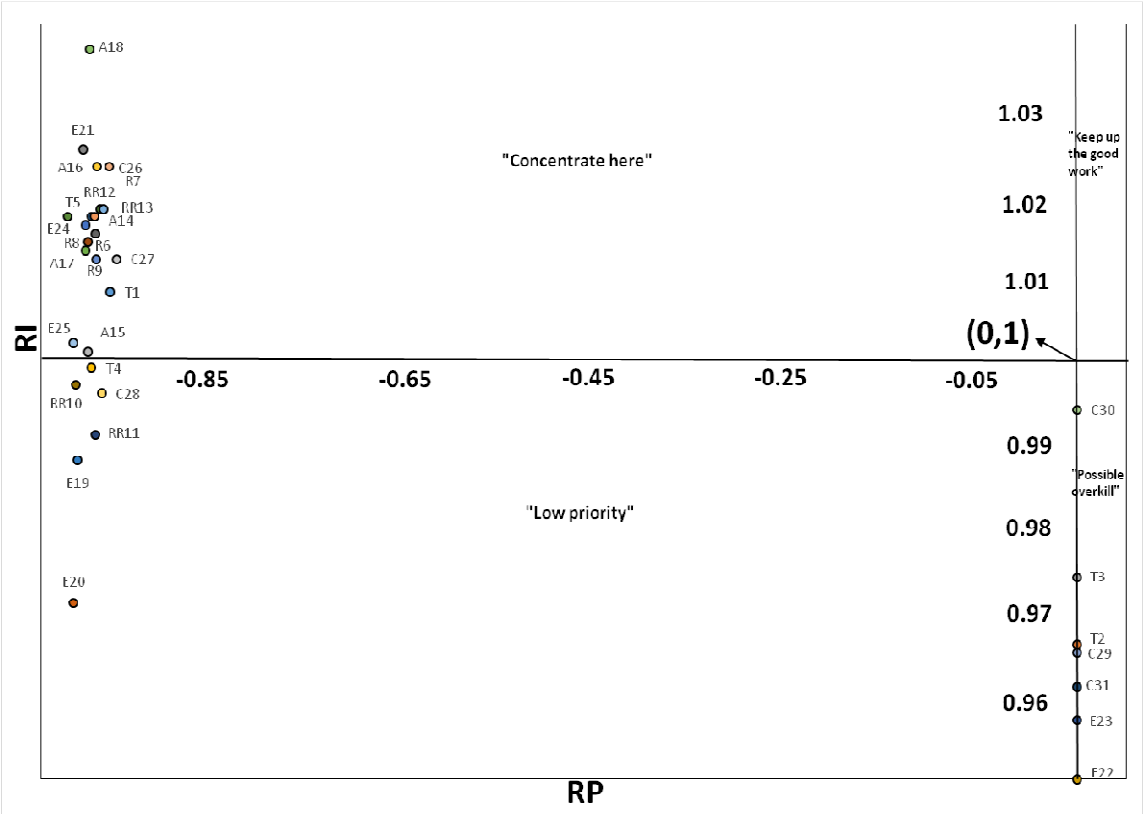

Table 2. The IPGA analysis for leisure farms attributes

Leisure farms Service Attributes	*Tourists' expectation*	*Tourists' perception*	*t value*	*Tourists' relative Importance (RI)*	*Tourists relative Perception (RP)*	*IPGA Quadrant*
T1	4.055	3.958	-2.408**	1.008	-0.980	II
T2	3.887	3.876	-.292	0.966	0.000	Y Axis
T3	3.918	3.894	-.618	0.974	0.000	Y Axis
T4	4.023	3.886	-3.511***	0.999	-0.999	III
T5	4.090	3.864	-5.729***	1.016	-1.005	II
R6	4.076	3.860	-5.916***	1.013	-1.005	II
R7	4.092	3.884	-5.599***	1.017	-0.999	II
R8	4.081	3.875	-5.404***	1.014	-1.002	II
R9	4.084	3.902	-4.927***	1.015	-0.995	II
RR10	4.012	3.823	-4.850***	0.997	-1.015	III
RR11	3.989	3.902	-2.356*	0.991	-0.995	III
RR12	4.095	3.921	-4.733***	1.018	-0.990	II
RR13	4.097	3.934	-4.493***	1.018	-0.987	II
A14	4.091	3.897	-5.319***	1.017	-0.996	II
A15	4.028	3.875	-4.045***	1.001	-1.002	II
A16	4.116	3.910	-5.351***	1.023	-0.993	II
A17	4.073	3.904	-4.514***	1.012	-0.994	II
A18	4.171	3.877	-7.829***	1.037	-1.001	II
E19	3.977	3.833	-3.838***	0.988	-1.013	III
E20	3.905	3.817	-2.249*	0.971	-1.017	III
E21	4.126	3.855	-7.087***	1.025	-1.007	II
E22	3.822	3.797	-.679	0.950	0.000	Y Axis
E23	3.852	3.792	-1.620	0.957	0.000	Y Axis
E24	4.094	3.795	-7.515***	1.017	-1.023	II
E25	4.033	3.817	-5.793***	1.002	-1.017	II
C26	4.116	3.956	-4.402***	1.023	-0.981	II
C27	4.070	3.990	-2.242*	1.012	-0.973	II
C28	4.007	3.929	-2.152*	0.996	-0.988	III
C29	3.884	3.870	-.383	0.965	0.000	Y Axis

C30	3.998	3.953	-1.180	0.994	0.000	Y Axis
C31	3.866	3.868	.060	0.961	0.000	Y Axis

*p<0.05, **p<0.01, ***p<0.001

and assurance dimensions, since attributes were all falling into this quadrant

Six attributes were situated in the Low Priority quadrant, which had low relative importance and performance perceived by the tourists. These attributes include 1 out of 5 items in the *Tangible* dimension (4), 2 out of 4 items in the *Responsiveness* dimension (10 and 11), 2 out of 7 items in the Empathy dimension (19 and 20), and 1 out of 6 items in *Accessibility* dimension (28). Though the attributes need to be improved, their efforts of priorities are not to be placed overly. The other 7 attributes with low relative importance and without significant difference between the average relative importance and performance fall right on the vertical axis.

These attributes include *Tangible* of items 2 and 3, *Empathy* of items 22 and 23, and *Accessibility* of 29, 30 and 31. Most of the leisure farms' attributes had negative gaps, and the scores of their relative performance (RP) were between -1.023 and 0. As Table 2 shows, the relative importance (RI) scores for the leisure farm service attributes ranged from 0.950 to 1.037.

Moreover, with the consideration of the farm's limited resources, the management was able to prioritize the order of improvement according to the standardized distance between each attribute and the intersection coordinate (0,1) in the Concentrate Here quadrant. As Table 3 shows, "A18: Ample Safety Arrangements", "E21: Experience was Physically Challenging", "A16: Staff was Well-Trained and Experienced", "C26: Service Information Easily Accessible", and "E24: Convenient Access for Disabled Tourists" are the five attributes with the largest distances from the intersection coordinates respectively. This priority order list could be referred to as the leisure farm service quality improvement order.

Conclusion and Implications

The aim of this study is to explore the gaps in relation to the tourists' service expectations and actual service received from the leisure farms in Taiwan. According to the results of the Gap analysis, the average of perceived importance from the farm tourists (4.023) is greater than the rating of perception (3.881). Moreover, the average means of service performance perceived on each

Table 3. The priority order of service improvement of attributes

Item	RP(P)	RI(I)	$[\bar{P}_i/(\max_{i=0} \bar{P}_i)]^2$	$[(\bar{I}_i - 1)/\max_{i=0}(\bar{I}_i - 1)]^2$	Distance	Order
A18	-1.001	1.037	0.957	1.000	1.399	1
E21	-1.007	1.025	0.969	0.457	1.194	2
A16	-0.993	1.023	0.942	0.386	1.153	3
C26	-0.981	1.023	0.920	0.386	1.143	4
E24	-1.023	1.017	1.000	0.211	1.101	5
RR12	-0.990	1.018	0.937	0.237	1.083	6
RR13	-0.987	1.018	0.931	0.237	1.081	7
R7	-0.999	1.017	0.954	0.211	1.079	8
A14	-0.996	1.017	0.948	0.211	1.077	9
T2	-1.005	1.016	0.965	0.187	1.073	10
R9	-0.995	1.015	0.946	0.164	1.054	11
R8	-1.002	1.014	0.959	0.143	1.050	12
R6	-1.005	1.013	0.965	0.123	1.043	13
A17	-0.994	1.012	0.944	0.105	1.024	14
C27	-0.973	1.012	0.905	0.015	1.005	15
E25	-1.017	1.002	0.988	0.003	0.996	16
T1	-0.980	1.008	0.918	0.047	0.982	17
A15	-1.002	1.001	0.959	0.001	0.980	18

*p<0.05, **p<0.01, ***p<0.001

attributes by the tourists were all lower than those of their expectations except the attribute of multiple payment service, indicating that, overall, the farms were not doing a good job of meeting the visitors' expectations. In terms of IPGA results, 18 defective service attributes in the upper-left quadrant ("Concentrated Here") of the matrix are the most significant evaluation items with poor performance but comparatively more important for the farm tourists. This indicates that the farm operators/managers need to concentrate here with extra work, effort, attention and investments, especially for the *Reliability* and *Assurance* dimensions since attributes under both dimensions were all falling into this quadrant. The key *Reliability* characteristics of "quality service" emphasize the need for farms to provide the services promised in a dependable and accurate manner, which may help them create a more satisfying tour experience for farm visitors. In the dimension of *Assurance*, it should be stressed for the service performance of farm employees, as it makes the farm tourists feel that em-

ployees have the knowledge, courtesy and ability to convey trust and confidence. This ability is significantly related to the service providers' responsiveness, indicating that more training should be directed at increasing the staffs' ability to deal with tourists' questions and problems, making them appear more professional and confident when delivering a service. In particular, small or medium sized companies in Taiwan run most leisure farms, and the staff is generally made up of part-time workers during holidays or the high season.

Overall, it could be said that farm managers should be service-focused by employing more service-oriented individuals. In result, by adhering to a key human resource management strategy, focused employees could increase leisure farms competitiveness. An important note is also found that 18 defective service attributes located in the "Concentrate Here" quadrant are listed their improvement priority order from the perspectives of farm tourists through the IPGA results. This can provide management with a more sound strategy for improving service quality and allocating resources more efficiently. In addition, more attention is needed in the attribute "Ample Safety Arrangements" under the dimension of "*Assurance",* as it fell short of guests' expectations, as presented in Figure 2. The priority of results suggests that for Taiwan leisure farms to improve service quality, the first step for management should be to improve their awareness of the importance of providing tourists an adequate guarantee of safety in the physical environment. Importantly, the attribute "Convenient Access for Disabled Tourists" should be raised and concentrated on the farms to handle and deal with emergencies during tour. Although the surveys were distributed in the farms with the certified leisure farms in this study which represents the acknowledgement of the significance of service quality on these farms, this sends an important message to the farm managers if they are doing good enough to meet tourists' expectations on accessibility needs or specific requirements of people who are disabled, such as buildings, leisure facilities and other types of infrastructure independently.

The six attributes were situated in the *Low Priority* quadrant as being of both important and performed relatively lowly. It is suggested that efforts should not be overly concentrated on these attributes and the farm managers/owners had better make improvement efforts in the other areas under resources constraints. However, this does not mean that the leisure farms should reduce its attention to improve these aspects. The gap between importance and performance ratings is still an issue that must be addressed although farm tourists may pay less attention to these attributes. Alternatively, if there exists a poor performance on these attributes, the changes of an unsatisfied experience could rise and create dissatisfaction.

Although this study provides important contributions to the leisure farm field, certain limitations of the current research should be noted. For instance, it is difficult to fully describe the nature to the service quality criteria for the leisure farms. This study conducted a literature review, one-on-one interviews from both

farm owners/managers and farm tourists to thoroughly examine all of the service quality items of leisure farms; nevertheless, there may be some items of farms service quality that this study's survey has not yet identified. It is therefore recommended that future researchers work to identify other factors that may have been overlooked in this study. In addition, this study only evaluated the perceptions from tourists' perspectives; therefore, it is recommended that future research can be extended by comparing the differences between the perceptions and expectations among tourists and service providers.

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