A Study on the Satisfaction with the Use of Leisure Food and Beverage Information System – Taking Traditional Farms for Example

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Abstract:

The application of food and beverage information system to traditional farms has become a current trend. In addition to providing visitors with different featured itineraries and services, it also helps develop the so-called featured farms. However, the existing studies on F&B information system of farms mainly focused on the establishment of system, and seldom discussed the satisfaction with use of system. Therefore, this study took the farms where a complete leisure F&B information system was established and those where such a system was not established as the examples, and used a questionnaire survey to analyze customers' and operators' satisfaction. In addition, this study used independent sample t-test to compare the difference between customers' and operators' satisfaction with meal reservation, management of table condition, meal management, GPS parking navigation and F&B management, in order to understand the actual difference between customers' and operators' satisfaction with the use of F&B information system.

Keywords: Customer satisfaction, Traditional farm industry, e-leisure farm, F&B information system.

1. Introduction

The development of technology has made "informationalization" no longer the symbol of industrial progress, but an indispensable survival tool which effectively introduces information system into industries to enhance competitiveness. In recent years, the progress in internationalization has changed or transformed many industries, and the original agricultural mechanism has failed to conform to the trend of times. To sustainably operate agriculture, many original systems and concepts all have to be changed to respond to the changes in the era of diversity. Therefore, traditional farms combine pastoral landscape, natural ecology and environmental resources with rural culture and farm life to provide citizens with the best travel destination of leisure and tourism.Owing to the development of information technology, a variety of websites of leisure farms which provide abundant tourist and F&B information have been set up. However, the existing studies seldom mentioned the satisfaction with the use of leisure F&B system. Consequently, this study took the traditional farms where leisure F&B information system was established as the examples, and used a questionnaire survey to analyze customers' and operators' satisfaction with the use of such a system. It is hoped that the analysis on the satisfaction of customers and operators can provide all the citizens in Taiwan with abundant information on leisure and tourist farms, as well as improve the tourist effect of traditional farms.

2. Literature Review

The application of NFC (Near Field Communication) technology to restaurants enables customers to replace membership card and credit card with a NFC cellular phone. The use of NFC technology not only increases the convenience of reservation and ordering, but also reduces restaurants' cost of service personnel. It enables customers to enjoy a refreshing dining environment and to pay the bill in a rapid and convenient manner without worrying about unauthorized use of credit card or waiting for the change after paying a bill[1, 2].There is a difference in the need for application of internet channels between male and female customers. In addition, there are also significant differences in promotion activities, information provision, brief guidance and exchange of views between them. The study found that male customers put emphasis on the introduction to shopping and information, while female customers put emphasis on the introduction to promotion activities and information [3]. Age, level of education, residence, occupation, etc. also have an effect on them. In the future, operators may cooperate with tourist websites and other relevant websites to reduce the expense of internet advertisement and to effectively increase the number of visitors of hotel websites. In terms of the application of internet, operators should also enhance the interaction with consumers to maintain the long-term operation of websites [4-5].The "provision of website" has a significant effect and positive explanatory power on "occupancy rate," "operating income" and "average value output of guest rooms." "Website functions" does not have a significant effect and positive explanatory power on four indicators of operating performance. "Online reservation" has a significant effect and positive explanatory power on "occupancy rate."

"Online transaction" has a significant effect and positive explanatory power on "average output value of employees." Therefore, the use of online website functions can significantly improve operating performance [6].

After the use of information technology, the average score of F&B department of international tourist hotels in the aspects of technology, organization, management and environment was higher than the theoretical average, and the difference was significant. Moreover, the difficulties in the use of information technology encountered by F&B department of international tourist hotels can be divided into four dimensions, technology, organization, management and environment. The application of information technology is significantly and positively correlated with all of them. The fact showed that the use of information technology by F&B department not only reduces difficulties, but also conforms to the developmental trend of enterprises [7-9].Under the intense competition among numerous operators, consumers' demand for convenience and instantaneity has increased day by day. The reason why consumers have meals in F&B industry is not only to feed themselves, but also to meet their needs for higher quality and services. As a result, the "production-oriented" F&B industry has been gradually transformed into "consumer-oriented" service industry. To reduce cost and improve service quality, how to combine modern business philosophy with various information technologies to enhance the efficiency and competitiveness of F&B service industry operation has become an issue which cannot be ignored. After the integration with information technology, the prototype of management information system can be established. This system includes four major sub-systems: menu design system, purchasing and inventory management system, ordering and food preparation system and point-of-sale information and financial information system.

The introduction of information technology creates new orders and new working approaches and for the evolution of operating procedures [11, 10].The addition of internet marketing into leisure farms creates developmental potential. Information technology makes it possible to provide customers with services which better meet their needs. The display of characteristics of leisure farms on internet platforms enables customers to design and browse relevant information in advance via internet at home. It provides customers with instantaneous information, meets their needs and creates competitive advantages. Internet marketing is one of the effective approaches to achieve the aforesaid objectives, follow the trend of technological era and improve the effectiveness of leisure agriculture [12].Nai-Wen Kuo [13] found that the study subject mainly chose high-cost marketing strategies and interpersonal relationship marketing, and was not good at using internet marketing tools. However, the review on other studies showed that hotel operators good at using internet marketing mainly applied it to the meal marketing of F&B department, and the effectiveness was usually positive. However, the past studies on the use of internet technology were mainly quantitative studies on satisfaction which failed to reflect the predicaments generally faced in internet marketing of organizational transformation as the introduction of information system. The studies on the introduction of information system mainly focus on the introduction of ERP (Enterprise Resource Planning), and it seems that internet marketing is not regarded as the establishment of information system. Therefore, operators should change organizational pattern, re-define working procedures and improve employees' ability and ambition to use web2.0 internet marketing tools, in order to successfully use web2.0 internet tools to develop great internet marketing strategies and to further establish a good customer relationship with consumers.Based on the above, the introduction of leisure F&B system into traditional farms has been a popular trend which cannot be delayed. The use of information design in F&B system makes it easy to expand the functions in the future and significantly increase the system flexibility. In addition to reducing customers' time required in learning, the integrated operating interface better improves the overall operating efficiency and saves the operating cost in the competitive leisure F&B market. Therefore, this study used a quantitative questionnaire survey to investigate the satisfaction with the use of leisure F&B information system in five dimensions, "meal reservation," "management of table condition," "meal management," "GPS parking navigation" and "F&B management" as the reference for the future studies concerning F&B system. It is hoped that this study can help activate the development of leisure farms in Taiwan and achieve the objective of improving the effectiveness of overall tourism.

3. Methodology

3.1. Research Procedures

Based on the aforementioned research motivations, research objectives and questions, the research procedures of this study are shown in Figure 1. After the research themes were confirmed, this study collected relevant reference and data. Upon the confirmation of the research scope and the compilation of questionnaire, this study invited three experts to participate in the compilation and amendment of the questionnaire to confirm the items of the formal questionnaire. In the end, the results and data obtained from this study were analyzed and discussed. This study conducted a questionnaire survey on the satisfaction with the use of F&B information system. This study used simple random sampling to distribute 340 questionnaires. The research subjects were mainly the adults over the age of 20. 300 questionnaires were distributed to customers (150 of them were distributed to the customers consuming at farms where F&B information system was used, while 150 of them were distributed to those consuming at farms where F&B information system was not used), and 40

questionnaires were distributed to operators (20 of the questionnaires were distributed to the operators using F&B information system, while 20 of them were distributed to those who did not use it) to conduct the formal questionnaire survey.

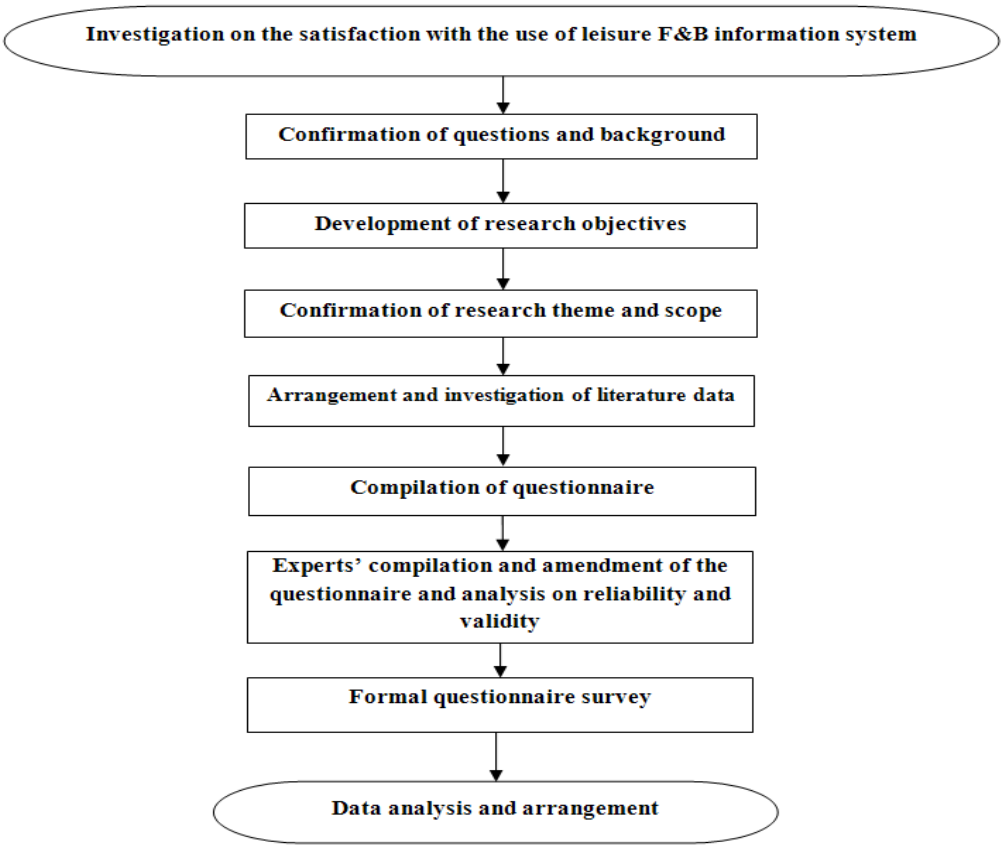

Figure 1. Research Procedures

3.2. Research Framework

The main purpose of this study is to investigate customers' and operators' satisfaction with the use of F&B information system, as well as to compare whether there is any significant difference in customers' and operators' satisfaction with the use of F&B information system. The research framework is shown in Figure 2.

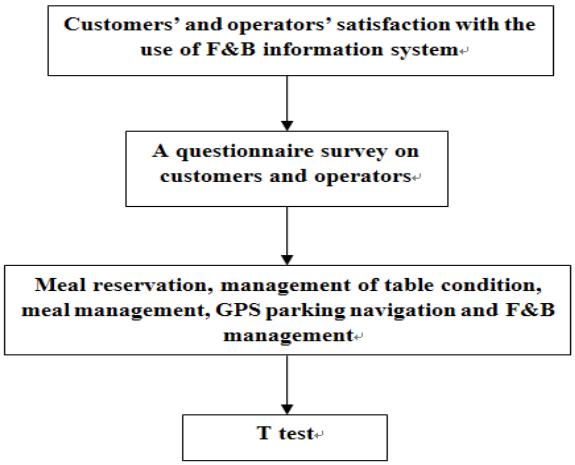

Figure 2. Research Framework

3.3. Research Tools

This study mainly selected the websites "where embedded technology is applied to the integration and development of leisure F&B information system module" as designed by National Science Council project as the samples, and used the "questionnaire on the satisfaction with the use of leisure F&B information system" as the research tool. The questionnaire mainly includes five parts of the website contents, "meal reservation," "management of table condition," "meal management," "GPS parking navigation" and "F&B management". This study tested the internal consistency of the pre-test samples. The results of the analysis on the reliability of various subscales are shown in Table 1. The correlation coefficient matrices of various subscales are shown in Table 2.

Table 1. Reliability of Various Subscales on the Satisfaction with the Use of F&B Information System

	Subscale on meal reservation	Subscale on management of table condition	Subscale on meal management	Subscale on GPS parking navigation	Subscale on F&B management
Cronbach's α	.819	.813	.721	.697	.839

Table 2. Correlation Coefficient Matrices of Various Subscales on the Satisfaction with the Use of F&B Information System

	Subscale on meal reservation	Subscale on management of table condition	Subscale on meal management	Subscale on GPS parking navigation	Subscale on F&B management
Subscale on meal reservation	1				
Subscale on management of table condition	.697**	1			
Subscale on meal management	.734**	.596**	1		
Subscale on GPS parking navigation	.424**	.543**	.560**	1	
Subscale on cost control	.627**	.532**	.691**	.475**	1

**p<.001

3.4. Data Processing

The results and data collected from all the scales in this study were arranged, converted, analyzed and input in computer. Upon the confirmation of accuracy via computer, this study used SPSS 12.0 statistical software to perform statistical analysis on the data. This study used customers and operators as the independent variables, and used meal reservation, management of table condition, meal management, GPS parking navigation and F&B management as dependent variables to perform a t test, in order to test the differences in various indicators between two groups of customers.

4. System Results

4.1. Customers' opinions on meal reservation of F&B information system

Table 3. Mean, standard deviation and t-test results of the subscale on meal reservation

Subscale	Item	Customers	*M*	*SD*	*t*
Meal reservation	1	Used the system	3.55	.671	3.405**
		Never used the system	3.31	.543	
	2	Used the system	3.59	.614	2.805
		Never used the system	3.40	.579	
	3	Used the system	3.41	.761	3.425
		Never used the system	3.11	.756	
	4	Used the system	3.60	.645	4.126**
		Never used the system	3.25	.827	

**p<0.01

4.2. Customers' opinions on the management of table condition of F&B information system

Table 4. Mean, standard deviation and t-test results of the subscale on management of table condition

Subscale	Item	Customer	*M*	*SD*	*t*
Management of table condition	5	Used the system	3.49	.673	4.723**
		Never used the system	2.78	.743	
	6	Used the system	3.91	1.074	.576**
		Never used the system	2.85	.925	
	7	Used the system	3.44	.815	.075
		Never used the system	3.43	.718	
	8	Used the system	3.21	.952	.810
		Never used the system	3.13	.900	

**p<0.01

4.3. Customers' opinions on meal management of F&B information system

Table 5. Mean, standard deviation and t-test results of the subscale on meal management

Subscale	Item	Customers	*M*	*SD*	*t*
Meal management	9	Used the system	3.19	.986	3.431
		Never used the system	2.81	.932	
	10	Used the system	3.82	.869	2.166*
		Never used the system	3.12	.723	
	11	Used the system	2.89	1.027	-.360
		Never used the system	2.93	.891	
	12	Used the system	2.97	1.042	1.893
		Never used the system	2.75	.969	

*p<0.05

4.4. Customers' opinions on GPS parking navigation of F&B information system

Table 6. Mean, standard deviation and t-test results of the subscale on GPS parking navigation

Subscale	Item	Customers	*M*	*SD*	*t*
GPS parking navigation	13	Used the system	2.58	1.082	2.677
		Never used the system	2.25	1.031	
	14	Used the system	3.67	.858	-.299*
		Never used the system	2.30	.673	
	15	Used the system	3.04	.955	3.696
		Never used the system	2.63	.951	
	16	Used the system	3.42	1.046	-2.075*
		Never used the system	2.25	.835	

*p<0.05

4.5. Operators' opinions on F&B management of F&B information system

Table 7. Mean, standard deviation and t-test results of the subscale on F&B management

Subscale	Item	Operators	*M*	*SD*	*t*
F&B management	17	Used the system	3.43	1.064	-1.167*
		Never used the system	2.56	.908	
	18	Used the system	3.41	.716	3.637
		Never used the system	3.10	.775	
	19	Used the system	3.37	.798	4.070*
		Never used the system	2.98	.847	
	20	Used the system	3.19	.922	4.218
		Never used the system	2.73	.939	

*p<0.05

5. Conclusion

5.1. Meal reservation:

The mean of the satisfaction with meal reservation of customers using the system was 3.5375, which was higher than that of those who did not use the system (3.2675). In addition, the t-test also showed a significant difference, suggesting that the use of F&B information system can reduce customers' time spent on waiting. Moreover, customers can fully utilize their time in the weekends to schedule for meals to prevent their appetite and the overall service quality from being affected by over-crowdedness.

5.2. Management of table condition:

In terms of the dimension of management of table condition, the mean of the satisfaction of customers using the system was 3.5125, which was higher than that of those who did not use the system (3.0475). The t-test also showed a significant difference, suggesting that the use of F&B information system enables customers to become satisfied with the arrangement of dining seats and choose the location and landscape they prefer to dine at, which significantly improve their expectation towards dining. Moreover, the use of F&B information system also speeds up the payment process, and saves customers' valuable time.

5.3. Meal management:

In terms of the dimension of meal management, the mean of the satisfaction of customers using the system was 3.2175. Although it was higher than that of those who did not use the system (2.9025), the mean of some of the items was not high. The findings showed that the customers who used the system and those who did not use the system were dissatisfied with meal management. However, the t-test showed a significant difference, suggesting that the customers using F&B information system could obtain more promotion/discount information early and learn of such information prior to departure. Compared with the customers who did not use the system, they were more satisfied with the meal management.

5.4. GPS parking navigation:

The mean of satisfaction with the GPS parking navigation of the customers using the system was 3.1775, which was higher than that of those who did not use the system (2.3575). The t-test also showed a significant difference, suggesting that the use of F&B information system enables visitors to rapidly find the location of the farms via online navigation and save their time. Moreover, the provision of online navigation service enables visitors to plan their route in detail and find the nearby scenic spot for resting. Furthermore, the use of embedded parking information of F&B information system also enabled customers to know the number of cars and location of parking lot to facilitate their arrangement of schedule.

5.5. F&B management:

The mean of satisfaction with F&B management of operators using the system was 3.35, which was higher than that of those who did not use the system (2.8425). The t-test also showed a significant difference, suggesting that the operators using the system could significantly reduce the operating cost. In addition, they could better control manpower deployment to prevent the provision of inadequate services. Moreover, they can also understand customers' needs through the F&B information system to fully grasp the taste of customers, as well as the overall F&B management process.To operators, F&B information system can speed up the transformation of traditional farms into leisure/tourist farms. In addition to improving the marketing value and status of traditional farms in tourist market, it can also effectively increase the service quality of tourist/leisure industry. Moreover, operators' income also increases with the introduction of information system, and consumers' expenses in tourist industry increase accordingly. To regional development, the introduction of F&B information system into traditional farms can help overcome the predicament of emigration in various places in Taiwan. In addition to increasing local working opportunities, it also improves the environmental health and living functions of the neighborhoods. Furthermore, the use of the system can also enhance the competitiveness of local tourist industry, increase regional tax income and exposure, and activate regional development, which even turns a general township into a tourist township. Besides, it can also increase the income of farmers, improve the development of B&B and preserve natural ecology and cultural landscape resources to sustainably operate regional tourist resources. To consumers, the introduction of F&B information system enables them to immediately experience the beauty of landscape in leisure farms and the local delicacy to further achieve the objective of development of tourist industry. Consumers may even use online interactive platform to design their schedules more efficiently and better understand tourist schedule without spoiling their trip.Based on the above, the introduction of F&B information system has a significant benefit on operators, regional development and consumers. The characteristics and quality of leisure/tourist industry can be improved as long as operators can be familiar with the procedures of tourist management and basic knowledge of relevant tourist industries and understand the procedures of F&B management

and relevant basic F&B knowledge. It is hoped that the development of leisure farms can be activated to achieve the objective of improving the effectiveness of the overall tourist industry..

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