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A Study of Visitors' on Service Quality, Satisfaction and Loyal in Ya Tam San Bikeway

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Abstract**—**The main purpose of this study is to analyze the feelings of tourists for the service quality of the bikeway. In addition, this study also analyzed the causal relationship between service quality and satisfaction to visitor's lane loyalty. In this study, the Ya Tam San bikeway visitor's subjects, using the designated convenience sampling carried out the survey, a total of 651 questionnaires were validly. Valid questionnaires after statistical analysis, the following findings: 1. Visitor's lane highest quality of service project: the routes through the region weather pleasant. Lane "with health and sports," the highest satisfaction various factors of service quality and satisfaction, loyal between correlations exist. 4. Guided tours of bikeways, the quality of the environment, and modeling imagery can effectively predict visitor satisfaction. 5. Quality of bikeway, public facilities, guided tours, and modeling imagery can effectively predict visitor loyalty. According to the above results, the study not only makes recommendations to the government units and the bicycle industry, also asked the research direction for future researchers.

Keywords**—**Service quality, satisfaction, loyal, bikeway.

I. Introduction

THE build sports Island "of Taiwan's important to the development of sports policy, and with the construction of bike lanes throughout Taiwan, cycling has become many Taiwan residents on weekdays important leisure activities and holidays. Even attract a lot of foreign tourists to come to Taiwan, a self-service way to travel, riding bicycle travel around Taiwan.

However, Taiwan's driveway after another construct, but why service quality is to bike enthusiasts important question. Therefore such a sustainable operation and management of bicycle lanes and its importance, in a related study, found that some factors will affect tourists' loyalty bicycle lanes, for example, on its own dedicated channel service quality and visitor satisfaction related to loyalty for [1] [2].

Parasuraman et al. [3] definition of service quality is more clear explanation, which the quality of service for consumers to obtain the service expected before and after the service, the actual experience feelings of mutual gap results. Government units, so that visitors feel driveway service quality is excellent, it is worth once again to re-visit, they will be willing to lane tell a friend, he will come back to experience. Yang [4] study the quality of bike lanes, its quality of service area is divided into: psychological experience, environment, landscape, facilities and service management four levels, and each level will affect the willingness to tourists at a later date tour.

Liao [2] study Toho self-bound vehicles green corridors of amusement recreation attractive, service quality and tourists satisfaction and loyalty, the results showed that, visitors experience after feel satisfied with the service quality of the top five, respectively, as: "route where the environment, air fresh, peaceful "; " rich along the horizons broaden, the landscape changes, full of fun ";" length appropriate ";" with other road intersection mining established body cross ";" route after the regional weather comfortable and pleasant ". And service quality prior expectations for comparison, the change is not large. The only change lane length, the tourists satisfied after the experience; conducted before high expectations "environment clean and maintaining good" falls to sixth place. Five service quality for tourists than not satisfied with the, respectively, as: "toilet to set the number of volume enough, positioned well"; "street lamp lighting the number of volume enough, positioned well"; "vendors of furnishings, neat and orderly"; "dining, discipline concepts products, etc. retail services, types of and the price is reasonable; lane tree shade effect good.

Bike lanes are part of local leisure facilities, users most cyclists feel these users will affect the reputation of the bike lanes, or bicyclists loyalty, will further affect the income of local tourism, bike lanes by the use of satisfaction is quite worthy of reference of the relevant units. In a related study, Hsu [5] studied the Keelung River bike lanes along riders involved in motivation lane facility Satisfaction. The results showed that the satisfaction of tourists lane facility up to the hardware facilities. Hay [6] study bike lanes recreational environment attributes and tourists leisure satisfaction degree of impact, the study results found that recreational environmental attributes and leisure satisfaction degree able to effectively influence revisiting willingness, while leisure satisfaction as the most important factor, and in the swim recreation environment attributes and the revisiting willingness mediating role.

Liao [2] studies the Toho bike green corridor recreation attraction, service quality and resident satisfaction and loyalty. The results showed that: service quality has a significant positive correlation loyalty. The actual experience of the service quality satisfaction has a significant positive correlation. Satisfaction of the loyalty of the residents has a significant positive correlation. Lin [7] study lane service quality ride satisfaction of studies - to bike paths in Taitung City, Central City as an example. The results showed that: 1. showed a significant positive correlation between the dimensions of Taitung City, Central City bike paths service quality and satisfaction rider four variables. 2. Taitung City, Central City bike paths service quality control of a motor vehicle measures ", the ecological environment and facilities,"

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environmental public facilities "," lane main design "riding satisfaction with predictive power .

According to the above background and motivation of this study as well as bicycle lane, in the purpose of the study can be summarized into the following three points: (A) Analysis Bicycle visitors for the feelings and the status of the satisfaction of the Ya Tam San bicycle lane service quality. (B) Analysis Ya Tam San bikeway bike visitors in loyalty for service quality and satisfaction. (C) According to the results of the analysis, as the government units and the bicycle industry reference for strategic planning in the promotion of cycling.

II. Methodology

A. Subject and Sampling

This study based on the Taichung City Ya Tan San bikeway for visitors, nom-random sampling at the end of bikeway to investigation. Tan Ya San greenway throughout the three townships, Tanzi, Taiga and Shenkang, respectively, the total length of about 12 km greenway called Taiwan's first use of abandoned military transport Railway Provisioning bike lanes, and in 2002 began commence seven construction projects, and was opened in May 2004.

The survey was conducted from August 2011 to October, each day weekend to investigate. To be able to ensure the correctness of the survey, the present study was to visitors as the main subjects over the age of 18. In this study, issued a total of 700 questionnaires were recovered 672, net efficiency of 21 questionnaires were total of 651 questionnaires were validly.

B. Questionnaire

The scale of this study is divided into four parts, the first part of the service quality scale; mainly want the visitors for the design and planning of bike lanes, public facilities, build, and environmental planning. The scale is a total of 25 questions, main reference bike study from [2] [3] [5] [6]. The second part of the satisfaction scale, mainly want to know the circumstances of satisfaction after the visitors lane. The scale was a total of six questions, the main reference study made [2] [6]. The third part is a loyal scale; mainly want to understand visitors at a later date use the lane as well as willingness to recommend to others. The scale is a total of five questions, the main reference study made [8] [9]. The fourth part is the demographic variables, including: gender, marital status, with or without children, occupation, age, education level and personal monthly income.

C. Data Analysis

In this study, the valid questionnaires are the use of SPSS For Windows 18.0 version statistical analysis, analysis of the steps include: (1) Used exploratory factor analysis and Cronbach' α reliability test of statistical methods to construct the reliability and validity of this study questionnaire. (2) Frequency distribution, percentage of tourists demographic variables assigned, as well as service quality and satisfaction for bike lanes feel the situation analysis. (3) Pearson correlation analysis, to understand the situation between service quality, satisfaction and loyal. (4)Used to multiple regression analysis, the predictive ability of the service quality and satisfaction on loyal.

D. Reliability and Validity Analysis

After exploratory factor analysis the service quality scale of this study extracted six factors. In reference to the relevant literature [2] [3] [6], were named as "lane planning", "public facilities", "guided tours", "environment", "landscape", and "modeling imagery", the scale cumulative variance of 60.32%. In satisfaction and loyalty scale, too little question items, coupled with the provision made reference to the relevant empirical research, so have content validity.

In terms of reliability, the results of the analysis, the study of service quality scale α value of .90; "satisfaction" scale α coefficient was .80; the scale of "loyal" α value of .83. From the above results, show that each scale has a high reliability of this study.

III. Results

A. Demographic Information Analysis

In terms of population characteristics, gender effective sample of 649 people, including 382 males and 267 females. Marital status effective sample of 651 people, including 354 married and 297 unmarried. In children situation, the effective sample of 647 people, including 326 have children, childless 321. Age effective sample of 651 people, including the ages of 21 to 30 years old the highest number of total of 187 people, at least for more than 61 years of age, and 13. In educational attainment, the effective sample of 651 people, which account for the largest number of degree universities total of 199 people, at least in the country (including the following) 35. In terms of occupation, the effective sample of 637 people, of whom the largest number of service sector's share of total of 263 people, a minimum of 12 free professions. Personal monthly income of an effective sample of 641 people, which income in the $ 30,001 to $ 40,000 (NT. dollar) share of the number of maximum total of 168 people, at least $ 90,001 to $ 100,000 (NT. dollar) persons, the period of 14.

B. Analysis of Service Quality in the Bikeway

Descriptive statistical analysis of the results found in the service quality of 25 items sequentially: " the routes through the region weather pleasant " (M=3.77, SD=.71), along the wide vision, the landscape changes "(M=3.68, SD=.68), "the camber appropriate " (M=3.68, SD=.67), "well apart " (M=3.65, SD=.68), "slope appropriate" (M=3.64, SD=.75), "obvious signs settings, location appropriate" (M= 3.57, SD =.71), "fresh air, the environment elegant, comfortable and quiet" (M=3.56, SD=.81), "casual atmosphere to create success "(M=3.55, SD= .75), " traffic signage settings obvious proper position" (M = 3.55, SD=.78), " the environment clean and well-maintained "(M=3.52, SD=.69), "path width appropriate " (M=3.52, SD=.81), "image modeling features" (M=3.51, SD=.74), "parking facility location is appropriate, adequate " (M=3.47, SD=.74), "the lighting of sufficient number and appropriate location" (M=3.45, SD=.78), "interpretive signs, the content of the map significantly, enough " (M=3.44, SD=.75), "enough seats appropriate position" (M=3.43, SD=.83), "the

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maintenance of public facilities perfect"(M=3.41, SD=.77), "nearby attractions or pastoral ecology, provide diverse recreation experience" (M=3.39, SD =.74), "rent their own type of vehicle is complete, innovative style and reasonable price"(M =3.32, SD=.83),"the planting of ornamental flowers, very enjoyable"(M=3.31,SD =.81), "the media publicity, advertising folding measures expedient" (M=3.27, SD=.76), "the tree shading effect is good"(M=3.26, SD=.90),"the number of lighting sufficient, appropriate position" (M=3.25, SD=.84), and "toilet set a sufficient number, the location is appropriate" (M=2.77, SD=.10).

C. Analysis of Satisfaction in the Bikeway

Descriptive statistical analysis of the results found that the satisfaction of six items, in order: "with health and sports" (M = 3.68, SD = .66), "with enhancing interpersonal or parent-child relationship" (M = 3.67, SD = .65), "overall satisfaction" (M = 3.56, SD = .72), "with the convenience and comfort (M = 3.55, SD = .66), "with leisure and security" (M= 3.53, SD = .68), and "with the pursuit of self-growth" (M = 3.50, SD = .73).

D. Correlation Analysis of the Service Quality, Satisfaction and Loyal

Table I Correlation analysis of the results shows that service quality of the six factors (lane planning, public facilities, guided tours, environment, landscape, and modeling imagery), the satisfaction and the loyal has higher relationship exist.

TABLE I
CORRELATION OF THE SERVICE QUALITY, SATISFACTION AND LOYAL

	A	B	C	D	E	F	G	H
A	1							
B	.34**	1						
C	.33**	.49**	1					
D	.40**	.46**	.47**	1				
E	.36**	.37**	.36**	.28**	1			
F	.39**	.46**	.48**	.42**	.39**	1		
G	.25**	.28**	.31**	.31**	.32**	.23**	1	
H	.20**	.28**	.28**	.25**	.20**	.28**	.40**	1

**p<.01
Note: A. lane planning
B. public facilities
C. guided tours
D. environment
E. landscape
F. modeling imagery
G. satisfaction
H. loyal

E. Regression Analysis of the Service Quality on the Satisfaction

In this study, the service quality, the “lane planning”, “public facilities” “guided tours” “ environment”, “landscape” and “modeling imagery”, the six factors for predicting variables and the criterion variable “loyal” factor dimensions, mining forced into the method of regression analysis results, as shown in Table Ⅱ. Six predictors, 3 variables were significant level, we can see from the table input and seven variables can predict the satisfaction of visitors to Ya Tan San bikeway value of 16.9%. Details see the shown in Table Ⅱ.

TABLE Ⅱ
REGRESSION ANALYSIS OF THE SERVICE QUALITY ON SATISFACTION

Variables	B	Std. Error	Beta	t-value	Sig
A	.087	.053	.069	1.646	.100
B	.067	.041	.073	1.622	.105
C	.199	.068	.133	2.917*	.004
D	.180	.057	.139	3.151*	.002
E	.296	.064	.189	4.609*	.000
F	-.038	.069	-.025	-.553	.581
R =.420 R^2=.177 adjusted R^2=.169, F=23.01*					

*p<.05
Note: A. lane planning
B. public facilities
C. guided tours
D. environment
E. landscape
F. modeling imagery

F. Regression Analysis of the Service Quality on the Loyal

In this study, the service quality, the “lane planning”, “public facilities” “guided tours” “ environment”, “landscape” and “modeling imagery”, the six factors for predicting variables and the criterion variable “loyal” factor dimensions, mining forced into the method of regression analysis results, as shown in Table Ⅲ. Six predictors, 3 variables were significant level, we can see from the table input and three variables can predict the loyal of visitors to Ya Tan San bike lane value of 12.8%. Details see the shown in Table Ⅲ.

TABLE Ⅲ
REGRESSION ANALYSIS OF THE SERVICE QUALITY ON LOYAL

Variables	B	Std. Error	Beta	t-value	Sig
A	.045	.055	.035	.812	.417
B	.110	.043	.119	2.584	.010
C	.154	.071	.102	2.180*	.030
D	.092	.059	.070	1.549	.122
E	.062	.067	.039	.928	.354
F	.187	.072	.120	2.610*	.009
R =.358 R^2=.128 adjusted R^2=.120, F=15.81*					

*p<.05
Note: A. lane planning
B. public facilities
C. guided tours
D. environment
E. landscape
F. modeling imagery

IV. DISCUSSION

A. Service Quality

Look at the analysis of the results from the quality of service, in fact, the quality of the tourists that lane just between normal and satisfaction can be seen to the high quality of service is not feeling lane. This lane is to take advantage of existing rural roads, plus field airport around surround road planning is made, not after a specific construction. But the lane along the climate, vision, landscape, curvature, distance, slope, signage, the environment, the path, a pavilion, location, maintenance of public facilities, such as tourists or at an acceptable level. In fact, in a related study [1] [2] [4], also found that the quality of the lane is the important part of the visitor’s attention. In

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addition, the visitors that need lane service, not only driveway bicycles only. Such as whether the lane adjacent attractions or the pastoral ecology can provide diverse recreational experience, is their emphasis on service projects [2]. In addition to the rent to the types of vehicles is complete, style novel, the price is reasonable, is also concerned about the service project. Taiwan with hot summers, tree shade effects in the driveway, and the number of nighttime lighting adequacy, appropriateness position, which is what they consider one of the services. Another study found tourists for "a sufficient number of toilets set appropriate location service, feel the quality is low. In fact, this research in Taiwan lane, have found the same characteristics. Lanes are planning use of the existing path (mountain road, embankments, scrap metal Road, rural roads, etc.), you want to set the toilet is a difficult existence. This is the biggest problem in Taiwan Bikeway [2] [4].

B. Satisfaction

Lane satisfaction, the analysis found that the satisfaction of tourists between the ordinary and satisfaction. From the specific contents of the visitors to the lane, "a health and sports" with enhancing interpersonal or parent-child relationship is close to satisfaction. This also shows that cycling has the effect of exercise, but also can promote personal health. The addition from enhancing interpersonal and look at the parent-child relationship, it is clear lane visitors; a lot is riding the entire members of the family. In addition the study also found that visitors lane "overall satisfaction" and just plain "convenience and comfort" and "leisure and security" satisfaction only. Although the above results suggest that the visitor's satisfaction is not high, but the bikeway also provides the interests of the people to relax the body and mind, in line with the purpose of lane [6] [7].

C. Relationship of the Service Quality, Satisfaction and Loyal

The results of the analysis show that the various factors of service quality and satisfaction are related to exist between loyalties. It can be clearly informed that the bikeway, lane planning, public facilities, guided tours, environment, landscape, and modeling imagery for tourists satisfaction and loyal. Also found that tourists related bike lane in the design and planning, the difficulty level is appropriate, the adequacy of public facilities, whether there is a clear indication, environmental and landscape aspects are tourists great importance to the project. When their lane satisfaction, loyal is also higher; satisfaction, loyalty is also the lower. The addition between satisfaction and loyal related. This shows that the tourists of bikeway, lane convenience and comfort, leisure and security, health and exercise-induced increase interpersonal or parent-child relationship, and the pursuit of self-growth, and higher overall satisfaction, they will think this loyal visitors of bike lanes will recommend this bike lanes to other people, to other people to say that bike lanes good will to this bike lanes is also higher in bicycle events [5] [6].

In order to further understand the impact of the study and then regression analysis was conducted to understand. The results showed that the service quality of the environment and landscape predictable satisfaction. So from the above results, the tourists lane environment clean and maintenance, tree shade effects, the planting of flowers, idyllic ecological, image modeling, fresh air, quiet environment, and varied landscape of their satisfaction. Also found that the service quality of public facilities, guided tours and modeling imagery predictable loyal is. Overall service quality and satisfaction, loyal, service quality satisfaction of tourists the loyal is has a significant effect exists. The results of this study same with the finding of the relevant studies [1] [2] [3] [7].

D. Suggestions

In practical operation on the results from this study can be found in the service quality of the bike paths, and will have an impact on satisfaction and loyalty for the tourists. Therefore recommended that government units, to focus on planning lane road, bend, slope, leisure pavilion, shade, vegetation cutting. To avoid accidents, the most important is the establishment of safety facilities, especially in dangerous corners. Course established lane as much as possible to maintain the style is also very important to create the atmosphere for leisure.

In the present study found that the number of visitors is most dissatisfied with toilet, so managers when setting up your driveway, you need to take note of this point. Toilets need to be managed, government agencies need to compile a budget maintenance, may have hindered exist. Planning lane, you can make the best use of resources along the line, such as temples, police stations, gas stations, etc., through grant funding, its toilet service.

For the future study, this study only a single lane study estimate to the other lane, there may be restrictions exist. Therefore recommended that a follow-up researchers, to expand the scope of the study, and were compared to know the specific characteristics of each lane, and that the promotion of reference. With the Taiwan Bikeway Construction, foreigners come to Taiwan backpackers more and more, especially the ring station depth bike trip. Therefore suggested that future researchers may consider to be more specific extension, to understand the behavior of the foreign use bikeways in Taiwan, as the basis for the promotion of international tourism marketing in the study.

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