From the day of luxurious inland river cruise ship started in Chongqing, China, the controversy is continuous: some people think those luxurious cruise ships on inland river might reduce the experience to enjoy the scenery of the Three Gorges, while some people think, which could improve the experience. In the study, the service facilities provided by luxurious inland river cruise ship will be evaluated by Pre–Post comparison based on IPA methods. After a review of the service facilities provided by luxurious inland river cruise ship running on Three Gorges areas. The tourists who would take the trip were asked to fill an questionnaire to examine the desired service facilities performance, which represents the highest level of the service facilities of the cruise ship that is expected by customers. After the trip, they were asked again to fill another questionnaire to examine the importance of service facilities and the performance of service. Pre–Post comparison would be examined to tell whether there is any change between pre and post experience. IPA would be used to evaluate the service facilities provided by inland river cruise ship. At last, some strategic suggestions to the development of inland river cruise ship are made.

* This work was supported by the research grant of Pai Chai University in 2019.

<table>
<thead>
<tr>
<th>keyword</th>
<th>Service Facilities Evaluation</th>
<th>Inland River Cruise Ship</th>
<th>Pre–Post Comparison</th>
<th>IPA</th>
</tr>
</thead>
</table>

*This work was supported by the research grant of Pai Chai University in 2019.*
I. 서 론

Cruise tourism is the fastest growing segment of leisure tourism in the travel industry around the world[1], increasing 7.2% annually since 1990, doubling every decade[2]. The total number of annual passengers will have reached about 8 million at least, and it will be an industry well on the way to maturity. New Zealand reports a 513% increase between 1996/97 and 2009/10; an average 37% per year[3]. In 2018, a total of 26.9 million passengers have taken cruise, and could reach 37.6 million in 2025; and the cruise market still remains high in Caribbean (35.4%) and Mediterranean (15.8%), and Asian region only takes 10.4%[4]. In particular, as the economy of China is still maintaining the trend of sustained and high growth and China accounts for 67.8% of the main tourist source of cruise tourism in Asia, the cruise tourism in Asian region will sustain strong growth potential[5].

Today’s cruise ships, bearing a far stronger resemblance to floating luxury hotels, or even amusement parks than to traditional liners, offer thousands of passengers amenities, such as full scale, main street style shopping districts, multiple restaurants, spas, basketball courts, and even ice skating rinks and rock climbing walls[6]. Tourists who choose cruise voyages for their holidays are much diversified not only socially, but also in terms of preferences, motivation and purchasing behavior[7].

Inland river transportation is an important factor of economic development, and is the future of domestic tourism[8][9]. There are currently a large number of cruise ships are going through in the inland river[10]. Because of the relative youth of industry and the remoteness of the area, few studies outline the inland river cruise tourism in Yangtze River in detail. Only few studies have focused on river cruise’s economic impacts, or the difference between the cruise and ordinary transport vessels and the hospitality within the cruise on Yangtze River[11][12]. These studies failed to discuss how to assess the impact of inland river cruise, which makes difficult for local government and cruise company to make management policy and operation strategy on the industry of inland river cruise.

The paper will proceed as follows: Firstly, the cruise tourism will be identified, especially in river cruise tourism and the service facilities of inland river cruise ship. Secondly, the service facilities provided by inland river cruise ship will be evaluated by pre–post comparison based on IPA methods. In the final section of the paper there is a discussion of some findings and implications. The discussion highlights the possibility that a proportion of the way to enhance the service facilities of inland river cruise ship. The discussion draws out the implications for further research in the area of the inland river cruise tourism.

II. Literature review

1. Cruise Tourism and River Cruise Tourism

The cruise ship industry may only represent a small percentage of tourism GDP, but it has grown more rapidly than other tourism sectors and showed great potential for strong growth [13]. Ship cruises, respectively, the 'cruise business' will be one of the leading forms of tourism on the planet by 2020[9]. The world
Cruise ship industry is a lucrative and controversial activity that operates along nations' coasts and in international waters[14].

Cruising is defined as a passenger vessel operating for pleasure purposes only, the ships are not involved in the transportation industry. For the cruiser, the voyage is a part of a holiday package[15]. Cruise tourism started in 1884 as a subsidiary activity to mail transport[16]. With a base in the Caribbean, cruise liners continued to grow and began to challenge land-based resorts[17][18].

In various modes of transportation, water transportation is one of the most important transportation, and the inland water transport is the most important component of water transport[19]. The alternative forms and niches for cruise tourism is river cruise tourism. Cockerell studied the UK river cruise passengers[20], and he stated that in certain areas of the glove can change river cruise patterns from the very popular Nile to rivers in Eastern Europe. Today, land-based tourist activities endeavor to strengthen their positions by joining the cruise market, new types of cruising patterns have emerged, such as river cruising[21].

Lately, there has been an increase in interest in cruise tourism among tourism researcher[22-24]. In present times, the cruise ship segment of leisure tourism has received a lot of attention by academic literature[25][26]. However, in the context of inland river cruise tourism, prior studies paid more attention to the qualitative research. Sun, Ni & Hou considered that inner river cruise in Yangtze River should be integrated and cooperated, along the river, all the ports should create tourism source platform in several fixed brand, and make all the points and lines into integrated cruise products[27]. Irincu, Petrea, Racz and etc. suggested that the price offer and the capitalization are the key to attract more tourists in river cruise[28]. Nasir & Hanafiah examine the impact of river cruise to local residents, they found that economic impact, environmental impact, social impact and cultural impact were the main impacts that could influence residents’ attitude toward river cruise[29]. Kim, Kim & Park studied the evolution mechanism of government policy network in inland cruise tourism development in Korea. they found the citizen conference could effectively help government to promote policy implementation, furthermore, a bottom-up tourism development also played an important role in the formulation and implementation of tourism policy[30]. As tourist experience and evaluation are the true portrayal of the tourism development, studies concentrated on tourist’s river cruise experience and evaluation are need.

2. Service facilities of Inland River Cruise Ship

A cruise ship represents all four aspects of tourism industry: transportation, accommodation (including food and beverages), attractions and tour operators. In terms of on-board services, Ritzer argues that volume is often used as a proxy of quality[30]. In view of this, cruise ship companies put a strong emphasis on the size and amenities on board, as well as the wide array of entertainment and other activities offered on the vessel throughout their marketing campaigns. As a whole, the major source of competition between cruise providers has evolved to one that is based on
facilities and range of activities[31].

Onboard revenue had become a key element in the new economic reality of cruise tourism[32]. The spending on food and drinks from passengers is obviously the source of company revenue, which make up for one third of total tourist spending in global tourist traffic[33]. More than floating bed factories with shops and restaurants attached[34], the cruises add more interesting and exciting themes suitable for different kinds of taste, as a complement to ordinary cruises[21]. Carnival Cruise Lines revolutionized cruising in the 1970s when it introduced onboard revenue as a significant element of the cruise product. This was the beginning of the fun ship concept.

3. Responsible tourism

As briefly discussed earlier, RT (responsible tourism) indicates a certain type of tourism that has an objective of minimizing negative social, economic, and environmental impacts, which is intimately consistent with what sustainable tourism, ethical tourism, and ecotourism directly toward. From a contemporary perspective on philosophy and ethics, the theory of justice primarily involves fairness in the notion of social justice and the means to maximize rewards for the disadvantaged[35]. Rawls proposed a theory of justice that explains justice as fairness. Based on Rawls’ concept of fairness, RT has been established in tourism research and practice. RT has become an emerging market as consumer trends related to this lifestyle and ethical consumption spread to tourism[36]. Since a more responsible form of tourism was envisioned by some scholars in the 1980s[37], RT has been one of the most significant examples of sustainable tourism[38].

Responsibility encompasses both an individual behavioral dimension (i.e., having a duty to deal with something or of having control over someone) and an ethical dimension (i.e., a moral obligation to behave correctly towards or in respect of[39]). Literally, RT directs our attention to individuals’ actions, which are determined by others to be right or wrong[40]. Tribe accordingly argues that ethical actions based tourism (i.e., ethical tourism) would be a subset of RT and is used to signify a more general approach than sustainable tourism[41]. As ethics rapidly becomes a mainstay of tourism studies and industries, ethical considerations and matters underpin the idea of RT[42]. Honey and Stewart suggest that responsible travel to natural areas conserves the environment and enhances the welfare of residents. Ecotourism involves socially responsible and environmentally protective tourism, which is a growing in interest[43].

In recent years, researchers have documented RT in terms of responsible management intention[44], corporate social responsibility[45], tourist identities[46], ethical consumption[47], and touristic norms[48]. Despite positive attitudes toward RT management, resource constraints negatively influence the relationship between businesses’ goals and what actually is achieved[49]. A well-integrated responsibility–sustainability model comprising the three stages of awareness, agenda, and action, which can provide insight into continuously implementing more economic, environmental, and socio-cultural value-driven RT[50].

Tourists’ perceptions of RT are delineated according to the extent to which they display inner– versus outer-directed goals and the degree of involvement in RT as a cultural
identity\[51\]. Grimwood et al. exemplify the power of responsibility in tourism to normalize particular types of truth, dismiss the existence of others, and highlight social privilege and disenfranchisement\[52\].

Furthermore, a high level of environmental knowledge is associated with a stronger environmental sensitivity, which, in turn, is associated with stronger environmentally responsible behavior toward tourism destination by tourists\[53\]. Pro-environmental activities, ecotourism experiences, and interpretations of environmental issues enhance tourists’ environmental attitudes and site-specific environmentally responsible behavior, thereby reducing adverse environmental effects\[54\]. Although altruistic motivations are related to the greatest commitment and investment in RT initiatives, economic benefits appear to be the most attractive exogenous driver of change that pushes people to take up RT practices\[55\]. Therefore, this study aims to investigate individuals’ behavioral intention to participate in RT.

III. Methodology

1. Study area

Winding about 3,964 miles, Yangtze River is the largest river in China and the third largest in the world after the Nile in Africa and the Amazon in South America. Yangtze River is historically, economically and culturally important to the country. The Three Gorges region is along the Yangtze River between the cities of Fengjie in Chongqing municipality and Yichang City in Hubei province with a total length of approximately 200 km in China. A Yangtze River Cruise is a thrill of a lifetime. A representation of the westernmost gorge appears on China’s currency in the back of the paper 10 yuan note\[56\]. There are many luxurious inland river cruise ships run on Three Gorges region\[57\]. the competition is very hard, the luxurious cruise try to provide the service facilities as much as possible, whether this kind of service facilities is necessary still on controversy, so we choose the as the study object.

2. Study design

The amount of cruise spending is largely based on pre- and post-cruise passenger visits. Tourism Vancouver and Vancouver Port Authority conducted a study in Vancouver-Alaska Curies, the results showed that 65% of respondents reported adding one or more nights to their vacation either before or after their cruise\[58\]. In order to ensure a high level of internal and external validity over time, a pre-post survey was conducted\[59\]. Literature review and in-depth interviews were conducted to derived service facilities’ measurement items of inland river cruise ship. Before the step on the cruise ship and experience, the questionnaire was distributed to ask the desire level of the service facilities. Then before the end of cruise travel, another questionnaire was distributed, which focus on the importance and performance of the service facilities as well as the desired service facilities before experience, importance of the service facilities and performance of the service facilities after experience. T-test in SPSS (Statistical Package for Social Sciences) was used to examine the comparison between desired service facilities
before experience and the importance of the service facilities. And IPA methods was used to test the comparison between the importance and performance, which was developed by Martilla and James[60].

IPA is a method for assessing tourist’s attitudes to tourism product and service[61]. Some tourism studies have used this method to examine tour guide performance[62], destination attributes[63], and tourism image[64]. It combines measures of the importance and performance attributes of a given product in a two-dimensional matrix, resulting in four quadrants[65]. Through these quadrants, advices will be informed that which tourism product attributes should be improved, kept up, ignored or shifted[66], while other methods cannot achieve it as well as IPA. For IPA method, Likert-type scales are used to measure importance and performance indicators, whose means are traced as guidelines to compose the four quadrants[67].

3. Questionnaire Design

The questionnaire consists of 3 parts. Part 1 of the questionnaire deals with the desired service facilities experience with 18 attributes, all the attributes were summarized from service facilities provided by the Yangtze Gold Cruise[68], includes beauty salon, fitness room, health clinic, laundry, reading room, cuisine service, VIP restaurant, sundeck bar, BBQ, lectures and shows, films, snack shop, traditional art and souvenir shop, shopping area, tea bar, comfortable living cabin, appropriate moving speed, convenient transportation connection. The survey was first written in English then translated into Chinese, and then translated back to English by two separate individuals, the results from this process were checked for reliability.

4. Sample Design and Data Collection

The empirical study was carried out with tourists who would travel with Yangtze Gold Cruise from August 1st, 2014 to October 20th, 2014. The target population is strictly controlled among the tourists who had been to travel with Yangtze Gold Cruise, a total of 400 questionnaires will be delivered.

5. Data Analysis

The collected data were analyzed using SPSS version 17.0. Statistical techniques, descriptive statistics including simple frequencies and mean ratings were computed on the respondents’ demographic and 18 service facilities attributes. To assess the reliability of the measures, Cronbach’s Alpha was calculated to test the stability of variables retained in each factor, and only those variables having coefficients greater than or equal to 0.50 were considered acceptable and a good indication of construct reliability[69]. T-test and IPA will be calculated to achieve the objectives of this study.

IV. Results

1. Demographic information

400 questionnaires were distributed in the surveys, 56 questionnaires were not returned or discarded due to missing data leaving 344 questionnaires (response rate = 86%), the target population are the tourists who would travel with Yangtze Gold Cruise. The results of demographic variables were shown at [Table 1].
2. Results of Changes Pre–Post Experience

Reliability analysis were used at first to check the reliability of the related factors, the value of Cronbach’s alpha for desired service is 0.827, and the value of Cronbach’s alpha for importance of service is 0.765, both of them are larger than the suggested minimum criteria of 0.7, so the reliability of two factor is acceptable.

In t–Test, the significant factors are less than 0.05, including beauty salon, fitness room, laundry, reading room, cuisine service, films, snack shop, traditional art and souvenir shop, shopping area, tea bar, indicating that the pre–post experience are obviously changed.

The pre–post mean value of lectures and shows (4.78, 4.83), sundeck bar (4.94, 4.95), BBQ (4.94, 4.95) was improved, which means those factors become most important after experience, while the pre-post mean of films (4.79, 3.54), snack shop (4.79, 3.99), reading room (4.14, 3.44), fitness room (3.91, 3.29), shopping area (4.33, 3.74) decreased a lot, which means those factors become most unimportant after experience.

3. Results of IPA

Reliability analysis were also used at first to
check the reliability of the related factors. The value of Cronbach’s alpha for performance of service is 0.907, which is larger than the suggested minimum criteria of 0.7, so the reliability of this factor is acceptable.

In order, the most important factors to travel with Yangtze Cruise are comfortable living cabin (4.99), appropriate moving speed (4.99), convenient transportation connection (4.99), sundeck Bar (4.95) and BBQ (4.95), which are almost related to the basic function of Yangtze Cruise. The most unimportant factors are beauty salon (3.29), fitness room (3.29), reading room (3.44), laundry (3.51) and films (3.54). The best performance factors to travel with Yangtze Gold Cruise are appropriate moving speed (4.37), comfortable living cabin (4.32), convenient transportation connection (4.27), cuisine service facilities (4.24), VIP restaurant (3.66), that are almost same with the order of the importance, while laundry (3.05), beauty salon (3), fitness Room (3) and health clinic (3) are the poorest performance factors.

Paired Samples Test were used to test the difference between them, the 2-tailed significance of all factors are 0.000, which means the significant difference exist between importance and performance. The results of IPA were showed in [Table 3].

**Table 3. Results of IPA**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Importance of service</th>
<th>Performance of service</th>
<th>Paired Samples Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Rank</td>
</tr>
<tr>
<td>Beauty Salon</td>
<td>3.29</td>
<td>0.46</td>
<td>17</td>
</tr>
<tr>
<td>Fitness Room</td>
<td>3.29</td>
<td>0.46</td>
<td>17</td>
</tr>
<tr>
<td>Health Clinic</td>
<td>3.83</td>
<td>0.83</td>
<td>12</td>
</tr>
<tr>
<td>Laundry</td>
<td>3.51</td>
<td>0.57</td>
<td>15</td>
</tr>
<tr>
<td>Reading Room</td>
<td>3.44</td>
<td>0.60</td>
<td>16</td>
</tr>
<tr>
<td>Cuisine service</td>
<td>4.87</td>
<td>0.33</td>
<td>6</td>
</tr>
<tr>
<td>VIP restaurant</td>
<td>4.57</td>
<td>0.69</td>
<td>8</td>
</tr>
<tr>
<td>Sun deck Bar</td>
<td>4.95</td>
<td>0.22</td>
<td>4</td>
</tr>
<tr>
<td>BBQ</td>
<td>4.95</td>
<td>0.22</td>
<td>4</td>
</tr>
<tr>
<td>Lectures and shows</td>
<td>4.83</td>
<td>0.43</td>
<td>7</td>
</tr>
<tr>
<td>Films</td>
<td>3.54</td>
<td>0.61</td>
<td>14</td>
</tr>
<tr>
<td>Snack shop</td>
<td>3.99</td>
<td>0.84</td>
<td>11</td>
</tr>
<tr>
<td>Traditional art and Souvenir shop</td>
<td>4.46</td>
<td>0.74</td>
<td>10</td>
</tr>
<tr>
<td>Shopping area</td>
<td>3.74</td>
<td>0.62</td>
<td>13</td>
</tr>
<tr>
<td>Tea bar</td>
<td>4.55</td>
<td>0.75</td>
<td>9</td>
</tr>
<tr>
<td>Comfortable living cabin</td>
<td>4.99</td>
<td>0.08</td>
<td>1</td>
</tr>
<tr>
<td>Appropriate moving speed</td>
<td>4.99</td>
<td>0.08</td>
<td>1</td>
</tr>
<tr>
<td>Convenient transportation connection</td>
<td>4.99</td>
<td>0.08</td>
<td>1</td>
</tr>
</tbody>
</table>

The IPA map were drawn in [Fig. 1], there are six factors, which are 6-cuisine service (4.24, 4.87), 7-VIP restaurant (3.66, 4.57), 8-sun deck bar (3.58, 4.95), 16-comfortable living cabin (4.32, 4.99), 17-appropriate moving speed (4.37, 4.99), 18-convenient transportation connection (4.27, 4.99) in Quadrant I, they should be kept up in good work.

There are three factors in Quadrant II, which are 10-lectures and shows (3.29, 4.87), 13-traditional art and souvenir shop (3.36, 4.46), 15-tea bar (3.37, 4.55) they should be concentrated here.

There are eight factors in Quadrant III, that are 1-beauty salon (3, 3.29), 2-fitness room (3, 3.29), 3-health clinic (3, 3.83), 4-laundry (3.05, 3.51), 5-reading room, films (3.07, 3.44), 12-snack shop (3.28, 3.99), 11-films (3.07, 3.54) and 14-shopping area (3.12, 3.74) they should pay low priority.
V. Conclusion and implications

The methods used in this article expand application field of IPA. There is not much study on service facilities evaluation by pre-post comparison based on IPA methods, so the methods in this study were certified useful to do service facilities evaluation.

The origins of cruise tourism could be stretched back to 19th century with the first ship sailing from UK to Portugal and Spain, till now, there are many changes than before, and the ship in different area show different characteristics, the service facilities should be changed by different environment. By pre-post comparison, factors such as beauty salon, fitness room, laundry, reading room, cuisine service, films, snack shop, traditional art and souvenir shop, shopping area, tea bar are obviously changed. In particular, lectures and shows rise a lot in current study, which means after experience, lectures and shows will be more important than they expected. Films, snack shop, reading room, fitness room and shopping area are not so desired than expected, so to the manager, they should know those factors can not really satisfy the tourists.

Comfortable living cabin, appropriate moving speed, convenient transportation connection, cuisine service, VIP restaurant and sundeck bar are special facilities as well as basic service facilities that could only be provided by cruise ship. Therefore, a cruise ship manager should keep up with the good work in this field.

On another side, the time on the board is too limited, so beauty salon, fitness room, laundry, reading room, films should be paid less attention, even can be reduced. Health clinic show the different attention between the different group, the older person thought it is very important while the young person do not care too much about it. The food on the board is free to eat, which is included in the total travel fee, so the tourists show limited interest to snack shop. As mentioned before, the common shopping area show less attraction than traditional art and souvenir shop, so this kind service facilities can be reduced.

The study also has some limitations. As normal IPA method has two implicit hypotheses, issues like independent dimensions, linear and symmetrical problems between attributes and performance may exist in this study. Future study could use the more promoted IPA method: RIPA (revised importance-performance analysis) developed by Deng, to decrease the potential issues between performance and importance.


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IPA 분석 방법에 의한 내륙연안 크루즈선의 서비스시설 사전-사후 비교 평가


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