Evaluation of Service Quality of Diving Tourism in Bali, Indonesia

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Abstract

Diving tourism has become a significant sector in Bali's tourism industry, contributing notably to the local economy and attracting divers from around the world. Bali diving tourism needs to be managed properly to strengthen competitiveness in the face of increasingly fierce competition. Using a set of attributes of diving tourism, this study aims to evaluate the compatibility of the diving tourism attributes that are important to divers and the performance of these attributes and to determine the actual performance of the diving tourism attributes in Bali. Data were collected through a questionnaire survey of 236 respondents regarding the importance of the 20 diving tourism attributes and their satisfaction with these attributes. As many as 13 of the 20 diving tourism attributes in Bali performed positively, meaning that the level of satisfaction exceeded the level of importance, and only one attribute performed negatively, meaning that the level of satisfaction was lower than the level of importance. Importance-Performance analysis shows that the attributes that are the competitive strengths of Bali diving tourism are coral cover, coral diversity, water visibility, dive equipment settings, divemaster competence, safety measures, and pre-dive briefing. The attributes that become weaknesses are the fish abundance, fish diversity, megafauna, and the implementation of the diving code of conduct. Diving tourism stakeholders in Bali must focus on improving the attributes that are weaknesses and maintaining the attributes that are strengths to strengthen the competitiveness of Bali diving tourism in the future.

Keywords: diving tourism; importance; satisfaction; performance; competitiveness.

INTRODUCTION

Background

Bali has large and diverse diving tourism resources in the form of coral reef ecosystems and marine biodiversity. This is important for the competitiveness of Bali tourism as one of the world's tourism destinations, considering that diving tourism is a type of marine tourism that is growing

rapidly in the global tourism industry (Binney, 2009; Dimmock & Musa, 2015; Ong & Musa, 2012; Roche et al., 2016; Wiranatha et al., 2016). However, competition among dive destinations is likely to be tougher in the future. More than 100 countries or regions in the world have benefited greatly from diving tourism and are competing for the dive tourism niche market (Spalding et al., 2017). To be able to compete, any tourist destination must ensure that the attraction as a whole is superior to other alternative tourist destinations and at the same time ensure a quality tourist experience is achieved (Dwyer et al., 2004).

Therefore, Bali diving tourism destinations need to evaluate themselves in the face of long-term market competition. To remain competitive, destinations must continuously recognize changing trends and map service quality. The most important thing from the knowledge gained through this evaluation is that diving tourism destinations need to build competitiveness by focusing on the attributes that are most important to divers to visit them. Furthermore, Bali diving tourism stakeholders need to work and innovate in the development of products and services to improve the quality of the experience and divers' satisfaction with the aspects that are important to them.

Based on this mission, this study aims to: (1) to evaluate the compatibility of diving tourism attributes that are important to divers and performance based on their satisfaction with these attributes and (2) to find out the actual performance of diving tourism attributes in Bali. This evaluation will show the attributes that are strengths and/or weaknesses for Bali in facing competition, as well as the efforts that must be made to build the competitiveness of Bali diving tourism.

LITERATURE REVIEW

Diving tourism is a type of marine tourism that is synonymous with coral reef tourism. Diving tourism grew out of the adventure tourism market and constitutes a significant part of international and domestic travel worldwide (Musa & Dimmock, 2012). Underwater tourism has increasingly developed since the discovery of Self-Contained Underwater Breathing Apparatus (SCUBA) equipment by Jacques Cousteau and Ernile Gagnan in 1943. In connection with the main equipment for diving, UNWTO (2001) defines scuba diving tourism as "people who travel to destination with the primary purpose of taking part in scuba diving".

Demand for a particular dive location according to Davis & Tisdell (1996) is a function of many variables. The two more important variables are price and environmental quality. Quality refers to aesthetic appeal, attractive marine life and visibility. Additionally, important utilities for scuba diving include ease of access, site conditions, dive quality and availability of alternate attractions. Some divers avoid busy dive sites. The results of O'Reilly (1982) research show that divers expect clear water, underwater views, marine life, accessibility, and low costs for their diving trips. In Hawai, Tabata (1992) found that other conditions such as boat facilities and the availability of beautiful underwater geological formations were among the conditions sought for a satisfactory diving experience.

Research by MacCarthy et al. (2006) in Western Australia, Queensland and Thailand found satisfaction from diving with clear water, beautiful underwater views, and marine life. Satisfaction can also come from diving buddies, the camaraderie of fellow divers and even chance encounters with strangers while diving. Results of the quantitative survey by MacCarthy et al. (2006) revealed that equipment reliability, safety, and operator efficiency (functional service) are important criteria in determining diver satisfaction. Meanwhile, the results of their qualitative research found many problems, some functional, some technical, but many

experiential and subjective elements that can determine satisfaction. Some criteria for measuring diver satisfaction are outside the direct control of the dive operator. Weather is a perfect example. However, research by MacCarthy et al. (2006) showed that in situations where divers experience technical and functional dissatisfaction, they can still offset this dissatisfaction with sufficient experiential satisfaction, so that their overall experience remains positive.

Musa (2002) examined divers' satisfaction on Sipadan Island by measuring twenty-four items representing the diving environment, service, and impact. Research findings showed that 97.8% of divers were satisfied with their experience on the island. The top five satisfaction attributes were marine life, friendly/helpful staff, good company, water temperature, and easy dive access. Concerns have arisen regarding haphazard tourism development, high density and worsening underwater visibility. Meanwhile, Musa et al. (2006) measured divers' satisfaction on Layang-Layang Island using sixteen satisfaction items. The five satisfaction factors revealed were service, lodging and food, environment, safety facilities and underwater nature. They reported that only the natural underwater dimensions significantly influenced overall satisfaction among divers. This indicates the intensity of the diving industry's dependence on a single dimension (the environment) represented by marine biota, coral reefs, underwater landscapes and water temperature.

Paterson et al. (2012) examined how diving environmental characteristics (physical and biological) influence diver satisfaction in the Florida Keys. The respondents were asked to indicate their level of satisfaction with 10 items, namely, seeing healthy coral, experiencing easy diving conditions, experiencing good water visibility, seeing undamaged coral locations, and seeing marine life, seeing large fish, seeing underwater formations unique, see live coral, experience the natural environment, and relax. The results show that the

difference between expectations and perceptions (experience) and the level of specialization of divers influence their level of satisfaction. The findings showed that seeing big fish contributed to divers' overall satisfaction at all levels of specialization. Divers were also found to have realistic expectations as they were generally satisfied with their diving experience.

The competitiveness attributes measured in diving tourism competitiveness research are very diverse. Pabel & Coghlan (2011) and Naidoo et al. (2016) used specific attributes of diving tourism from resource variables and dive operator service variables, without including destination management variables. Queiroz Neto et al. (2017) uses complete attributes including resource variables, dive operator service variables, and destination management variables. Also added are complementary tourist attraction variables and visa policies. Uyarra et al. (2005) focused on the attributes of diving tourism resource variables, plus variables related to disease risk, complementary tourist attractions, and visitor crowd factors. Coghlan & Prideaux (2009) research uses attributes from resource variables, situational conditions and demand factors, and market performance, without considering service and destination management variables. Meanwhile, O'Neill et al. (2002) adopted the attributes of the SERVQUAL model. While O'Neill et al. (2002) specifically examined the attributes of dive operator service variables.

METHODS

This study uses primary data sources. A structured questionnaire was used to collect data from respondents. The questionnaire was designed to obtain the respondent's characteristics, the diving tourism attributes that are important, and the divers' satisfaction with these attributes.

The target population in this study are foreign and domestic tourists who dive

in Bali with the condition that these tourists have experience diving outside Bali. Sample or respondents were used as data sources using a purposive sampling technique. The questionnaires were distributed to dive operators in Bali dive sites, including Sanur, Tanjung Benoa, Nusa Penida, Candidasa, Padangbai, Jemeluk, Tulamben, and Pemuteran. A total of 236 completed questionnaires were collected.

Twenty diving tourism attributes were selected to evaluate the attributes that are important to divers and their satisfaction with these attributes. The diving tourism attributes used in this study were modified from the study of Coghlan & Prideaux (2009); MacCarthy et al. (2006); Musa et al. (2006); O'Neill et al. (2000); Pabel & Coghlan (2011); Paterson et al. (2012). The diving tourism attributes are grouped into three variables, including the resource variable which consists of seven attributes, the services of dive operator variable which consists of nine attributes, and the destination management variable which consists of four attributes.

The importance and performance ratings were measured through a 5-point Likert scale. The importance ratings are 1=very unimportant to 5=very important. The performance ratings are 1=very dissatisfied to 5=very satisfied. The hypothesis proposed in this study is H1: There is a significant difference between the importance and performance of the attributes perceived by the respondents.

Evaluation of the compatibility between the importance and performance of each diving tourism attribute (testing the H1 hypothesis) using paired sample t-test. The analysis of the actual performance of the diving tourism attributes using Importance Performance Analysis (IPA) according to Martilla & James (1977).

RESULTS AND DISCUSSIONS

Characteristics of Respondents

Respondents involved in this study consisted of 49.58% male and 50.42% female, the largest proportion was in the age group 20-29 years (46.61%), with higher education, namely undergraduate to doctoral degrees reached 95.76%, and the four occupations with the largest proportion respectively were employees (35.59%), professionals (26.69%), students (18.64%), and entrepreneurs (16.95 %). Respondents represent 24 countries from five continents. Respondents from Europe covered 13 countries with a very dominant proportion (72.46%), meanwhile, the five countries with the highest proportion were Germany and the Netherlands (18.64%), England (11.44%), France (7.63%), and the United States (7.20%). Most of the respondents (52.97%) are repeat divers in Bali.

In terms of gender, this study found that the proportion of female divers in Bali was slightly higher than that of males. This shows that divers are not always male-dominated, in contrast to the results of previous studies, among others Pabel & Coghlan (2011); Roche et al. (2016); Skoufas et al. (2018), which stated that males were dominating diving tourists. Even Garrod & Gossling (2008) state that scuba divers are male-oriented. This is due to physical needs, heavy equipment, required conditions, higher income, and because the male is more daring to venture into the unknown underwater realm.

Diving tourists in Bali are dominated by the young age group. This is following Garrod & Gossling (2008); Lemke & Olech (2011); Musa et al. (2006); Ong & Musa (2012), that people who enjoy diving tourism are young people aged 20-49 years. The tourist taxonomy, which is dominated by young divers, bodes well for the sustainability of the diving tourism market in Bali. Considering that repeater divers in Bali are also relatively high, it shows that Bali has become one of the choices of vacation destinations while enjoying the beauty of the underwater world. According to Correia et al. (2015), the behavioral pattern of repeaters can be the foundation of visit loyalty related to satisfaction.

Table 1. Demographic Characteristics of Respondents

Profile/Category	Sample		Profile/Category	Sample	
	Valid	%		Valid	%
Gender:			**Citizenship:**		
Male	117	49.58	USA	17	7.20
Female	119	50.42	Canada	10	4.24
Age group (year):			Indonesia	8	3.39
<20	6	2.54	South Korea	7	2.97
20 - 29	110	46.61	Hongkong	4	1.69
30 - 39	67	28.39	Australia	11	4.66
40 - 49	22	9.32	Netherlands	44	18.64
50 - 59	23	9.75	Germany	44	18.64
60+	8	3.39	UK	27	11.44
Education level:			France	18	7.63
Senior High School	10	4.24	Switzerland	15	6.36
Academy	63	26.69	Belgium	8	3.39
Bachelor	125	52.97	Denmark	6	2.54
Master	35	14.83	Austria	2	0.85
Doctoral	3	1.27	Bangladesh	2	0.85
Main occupation:			China	2	0.85
Entrepreneur	40	16.95	Czech	2	0.85
Professional	62	26.27	South Africa	2	0.85
Student	44	18.64	Italia	2	0.85
Employee (Privat dan public)	84	35.59	Others (Japan, Russia, Estonia, Slovakia, Kyrgyzstan)	5	2.12
Others	6	2.54			

Source: Research Result, 2024.

The characteristics of the education level of diving tourists are strongly related to socioeconomic variables. Socio-economically, the diving tourism market segment is based on the profession and income of tourists along with the level of education. According to Lemke & Olech (2011), scuba diving tourism is relatively expensive due to equipment, intensive training, and travel costs. In general, diving tourism activities involve people with relatively high incomes.

In terms of nationality, diving tourists in Bali are predominantly from the European continent. This is following the results of a study by Pabel & Coghlan (2011) and the CBI Minister of Foreign Affairs (2017), that Europe is a key market source for world divers. Countries in Western Europe such as Germany, France, and the UK are strong world diving tourism markets.

Divers from countries in Europe are attracted to sustainable tourism destinations, with a high level of security and safety. They are increasingly seeking unique dive sites. It was further stated that the main destinations for divers from Europe include Egypt, Maldives, Thailand, Indonesia, Mexico, and the Galapagos. South Pacific Tourism Organisation (2014) reports that the USA is also the world's main market for diving tourism.

The majority of respondents (61.86%) experienced diving in one or more countries in the Southeast Asia region (excluding Indonesia). The three most visited countries are Thailand, the Philippines, and Malaysia. This diver's experience profile follows a study by Lew (2013), that Indonesia and Thailand are the two countries in Southeast Asia that are the main destinations for world divers,

followed by Malaysia and the Philippines. Respondents with experience diving in one or more Indonesian diving destinations (outside Bali) were 60.59%, of which the two most visited destinations were Gili/Lombok (54.66%) and Komodo (13.14%). Meanwhile, respondents with experience diving outside Indonesia include Australia 19.49%, Micronesia 4.66%, Hawaii 11.44%, South Pacific 10.17%, Caribbean/Central America 15.25%, the Indian Ocean 9.75%, and other regions 1.69% (Table 2). This data shows that diving tourism destinations that are competitors for Bali in the Southeast Asian region are Thailand, the Philippines, and Malaysia. Meanwhile, Bali's competitors at the national level are Gili/Lombok and Komodo.

Table 2. Respondents Experience Diving in Destinations Other Than Bali

Destinations	Number of respondents by number of diving experiences			Total	
	1-5 timee	6-10 times	≥ 11 timer	n	%
Indonesia (outside Bali)				143	60.59
Gili/Lombok	120	5	4	129	54.66
Komodo	28	1	2	31	13.14
Raja Ampat/Papua	12	1	0	13	5.51
Wakatobi	12	0	0	12	5.08
Others (Bunaken, Derawan, Togean, Alor)	19	1	0	20	8.47
Southeast Asia				146	61.86
Malaysia	26	1	0	27	11.44
Philippines	58	2	0	60	25.42
Thailand	104	14	7	125	52.97
Cambodian	22	0	0	22	9.32
Others (Taiwan, Myanmar)	9	0	0	9	3.81
Australia	38	1	7	46	19.49
Micronesia				11	4.66
Palau	7	0	1	8	3.39
Others (Guam, Federation of Micronesia)	6	0	0	6	2.54
Hawai'i	26	1	0	27	11.44
South Pacific				24	10.17
Solomon Islands	15	0	0	15	6.36
Vanuatu	15	0	0	15	6.36
Fiji	6	0	0	6	2.54
Caribbean/Central America				36	15.25
Belize	11	1	3	15	6.36
Bahamas	12	0	1	13	5.51
Others (Ecuador, Puerto Rico, Panama, Colombia, Mexiko, Honduras, Bonaire)	13	1	3	17	7.20
The Indian Ocean				23	9.75
Maldives	20	0	0	20	8.47
Others (Seychelles, Mauritius, Tanzania)	7	0	1	8	3.39
Red Sea (Egypt)	26	2	1	29	12.29

Source: Research Result, 2024.

Compatibility Between The Importance and Performance of Diving Tourism Attributes

The mean score of the importance of the respondents on the diving tourism attributes and the mean score of performance of these attributes are shown in Table 3. Overall, the mean score of importance score is MI = 3.39 and the mean score of performance is MP = 3.54 with the value of reliability being α = 0.935 and α = 0.949, respectively for the importance and performance scale. In terms of importance, respondents are most concerned with the resource variable (MI = 3.49; α = 0.921), followed by the operator service variable (MI = 3.41; α = 0.855), and destination management (MI = 3.18; α = 0.821).

Meanwhile, in terms of performance, respondents were most satisfied with the operator service variable (MP = 3.63; α = 0.931), followed by the resource variable (MP = 3.59; α = 0.887), and destination management (MP = 3.26; α = 0.912).

The five attributes that are most important to the respondents are visibility (MI = 3.75), dive equipment settings (MI = 3.73), safety measures (MI = 3.71), pre-dive briefing (MI = 3.75), = 3.57), and dive master competence (MI = 3.52). Meanwhile, the five attributes that are perceived as having the highest performance are dive equipment settings (MP = 3.95), water visibility (MP = 3.93), dive master competence (MP = 3.87), crew (MP = 3.81), and underwater landscapes (MP = 3.76).

Table 3. The Test Results of The Compatibility Between The Performance and Importance of The Diving Tourism Attributes

No	Diving Tourism Attributes	MI	MP	MP-MI	t value	Sig. (2tailed)
A	**Resource variable**	**3.49**	**3.59**			
1	Underwater landscapes	3.39	3.76	0.37	-7.380	0.000*)
2	Coral cover	3.47	3.68	0.21	-3.856	0.000*)
3	Coral diversity	3.44	3.63	0.19	-3.857	0.000*)
4	Fish abundance	3.42	3.41	-0.01	0.189	0.851
5	Fish diversity	3.45	3.40	-0.05	1.096	0.274
6	Megafauna	3.50	3.29	-0.21	3.121	0.002*)
7	Water visibility	3.75	3.93	0.18	-3.224	0.001*)
B	**Operator service variable**	**3.41**	**3.63**			
8	Dive equipment setting	3.73	3.95	0.22	-4.397	0.000*)
9	Comfort on the boat	3.14	3.31	0.17	-2.980	0.003*)
10	Cost	3.30	3.32	0.02	-0.401	0.689
11	Dive master competence	3.52	3.87	0.35	-7.107	0.000*)
12	Crew	3.36	3.81	0.45	-9.263	0.000*)
13	Safety measures	3.71	3.72	0.01	-0.318	0.751
14	Pre-dive briefing	3.57	3.70	0.13	-2.593	0.010*)
15	Accuracy of customer service	3.16	3.51	0.35	-7.892	0.000*)
16	Availability of educational materials	3.24	3.44	0.2	-4.647	0.000*)
C	**Management destination variable**	**3.18**	**3.26**			
17	Destination infrastructure/facilities	3.08	3.21	0.13	-3.335	0.001*)
18	Destination security	3.04	3.19	0.15	-3.357	0.001*)
19	Implementation of the diving code of conduct	3.40	3.43	0.03	-0.768	0.443
20	Destination information center	3.18	3.22	0.04	-0.878	0.381

*) Significant; MI = mean score of importance; MP = mean score of performance
Source: Research Result, 2024.

The results of the paired sample t-test to evaluate the significance of the compatibility between importance and performance for each diving tourism attribute (H1 hypothesis testing) in Table 3 conclude that the hypothesis is accepted for 14 attributes. This means that there are 14 attributes with a mean score of importance that is significantly different from the mean score of performance. Thirteen of these attributes are positive performers and one attribute is negative. Attributes that perform positively mean the level of satisfaction of respondents is significantly higher than the level of importance, while attributes that perform negatively are the opposite.

The positive performing attributes consist of four attributes of the resource variable including underwater landscapes, coral cover, coral diversity, and water visibility; eight attributes of the operator service variable include dive equipment settings, comfort on the boat, divemaster competence, crew, pre-dive briefing, the accuracy of customer service, and availability of educational materials; and two of the destination management variable include destination infrastructure/facilities and destination security.

Several previous studies have shown that divers get satisfaction, especially with resource variables, meaning that the attributes of resource variables such as coral reefs, water temperature, marine life, and underwater landscapes contribute to diver satisfaction compared to other variables (Ince & Bowen, 2011; Musa, 2002; Musa et al., 2006). Meanwhile, the results of other studies show that divers get satisfaction, especially with operator service variables, such as friendly crew, safety efforts, and dive equipment settings (Meisel-Lusby & Cotrell, 2008; O'Neill et al., 2000; Thirumoorthi et al., 2013).
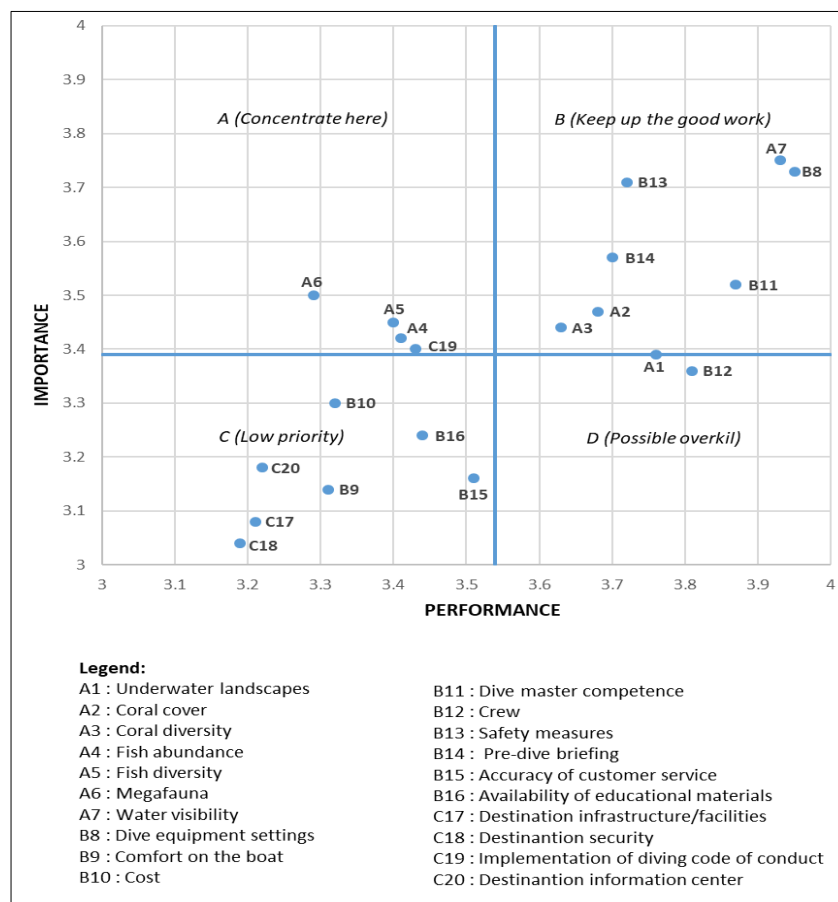
Figure 1. Importance-Performance Analysis of The Diving Tourism Attributes in Bali

The only negative performing attribute was the megafauna of the resource variable. The presence of megafaunas in the waters of Bali is perceived as unsatisfactory due to the high motivation to find these megafaunas in diving. Finding megafaunas such as sharks, napoleon wrasses, humphead parrotfishes, sea turtles, and manta rays in diving is one of the priority divers' motivations (Lucrezi et al., 2013; MacCarthy et al., 2006; Meyer et al., 2002; Musa, 2002; Paterson et al., 2012).

The analysis of the relative position of the diving tourism attributes concerning the overall mean score of importance and performance using IPA is shown in Figure 1. A four-quadrant matrix of IPA outcomes is constructed by two axes based on the overall mean score of importance (MI = 3.39) and the overall mean score of performance (MP = 3.54). There are five attributes located in quadrant B (Keep up the good work). These attributes indicate the optimal level of performance, exceeding the overall mean score of the attributes concerning attributes that are also considered important by respondents.

These attributes can be judged as the competitive strength of Bali diving tourism, including water visibility, coral cover, coral diversity, dive equipment settings, divemaster competence, safety measures, and pre-dive briefing. According to (Martilla & James, 1977), the attributes that are in the Keep up the good work quadrant are attributes that perform well so they need to be maintained. Meanwhile, according to Bindu & Kanagaraj, (2013); Boley et al. (2017), as a destination's competitive strength, these attributes can be used as a focus in destination marketing, and in the future, they must strive to maintain its quality.

Attributes that are in quadrant A (Concentrate here) can be considered as a weakness in the competitiveness of Bali diving tourism where respondents have high expectations for these attributes but their performance is low. Four attributes fall in quadrant A, including fish abundance, fish diversity, megafauna, and the implementation of the diving code of conduct. Three of these attributes are resource variables. Problems related to the fish abundance and the lack of megafauna in the waters of Bali have been revealed by Allen & Erdmann (2012), that there have been indications of overfishing in almost every coral reef location in Bali.

According to Martilla & James (1977), the attributes in the Concentrate here quadrant are low-performing attributes that need to be the focus of improvement. Furthermore, Boley et al. (2017) stated that the attributes in this quadrant pose the biggest problems for destinations, and therefore require urgent managerial attention to improve their quality and performance. It is also suggested by Bindu & Kanagaraj (2013) that the attributes in the Concentrate here area indicate that destination management and service operators need more attention to it and try to change it to an area that has strength for that destination in the future.

Seven attributes are in quadrant C (Low priority), including comfort on the boat, cost, accuracy of customer service, availability of educational/informational materials, destination infrastructure or facilities, destination security, and destination information center. The attributes in this quadrant indicate that respondents are less concerned with these attributes and their performance is also perceived as low. Most of the attributes of the destination management variable fall in this quadrant. According to O'Neill et al. (2000), quadrant C reflects the tendency for certain aspects of the organization not to work optimally. However, because the importance of these aspects is also low, it is not necessary to prioritize efforts for improvement.

Furthermore, there are two attributes in quadrant D (Possible overkill) which means that the expectation of respondents to these attributes is low but the performance is high. These attributes include underwater landscape and crew. According to Bindu & Kanagaraj (2013), attributes

that are rated low in importance and high in performance are areas that service providers should continue to maintain at the same level of effort. Likewise, Martilla & James (1977) stated that although the attributes were judged to be of slight importance because their performance was considered well, these good work practices could be used as a reason to continue.

CONCLUSION

Thirteen of the 20 attributes of Bali diving tourism evaluated were positive performers, including underwater landscapes, coral cover, coral diversity, water visibility, dive equipment settings, comfort on the boat, divemaster competence, crew, pre-dive briefing, the accuracy of customer service, availability of educational materials, destination infrastructure/facilities, and destination security. The only negative performing attribute is the megafauna.

Visibility, coral cover, coral diversity, diving equipment settings, divemaster competence, safety measures, and pre-dive briefing are attributes of Bali diving tourism that are relatively positioned as optimal actual performance, exceeding the overall average of attributes concerning the importance of these attributes. These attributes can be used as strengths in developing competitive Bali diving tourism. On the other hand, attributes, including fish abundance, fish diversity, megafauna, and the implementation of the diving code of conduct are weaknesses and require priority efforts to improve.

Bali diving stakeholders need to be more focused and continuously improve the performance of these attributes to reverse the condition so that they become a force in the competition considering that these attributes are highly valued by respondents. Meanwhile, the attributes that have performed well need to be maintained.

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