

January 2002

Dive Tourism: Evaluating Service Quality

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Recommended Citation

O'Neill, Martin; MacCarthy, Martin; and Abdullah, Paul (2002) "Dive Tourism: Evaluating Service Quality," *Hospitality Review*: Vol. 20 : Iss. 2 , Article 5.

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Abstract

Through the application of importance- performance analysis (/PA), the author investigated the conceptualization and measurement of service quality for tour operators in the scuba diving industry Findings from a study of consumer perceptions of service quality as they relate to a dive tour operator in Western Australia revealed the core service quality dimensions hat need to be improved for the operator and demonstrated the values and relative simplicity of the importance-performance analyses for dive tour operators generally

Keywords

Martin O'Neill, Tourism

Dive Tourism: evaluating service quality

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Through the application of importance-performance analysis (IPA), the author investigated the conceptualization and measurement of service quality for tour operators in the scuba diving industry. Findings from a study of consumer perceptions of service quality as they relate to a dive tour operator in Western Australia revealed the core service quality dimensions that need to be improved for the operator and demonstrated the value and relative simplicity of the importance-performance analysis for dive tour operators generally.

The delivery of service quality is increasingly being seen as central to tourism providers' efforts to position themselves more effectively in the marketplace.¹ Not surprisingly, a large proportion of organizational effort is now being directed at developing an operational means for achieving just that.² Inherent in any such approach is the need to continually monitor organizational performance so that energies can be better directed at consistently satisfying customer needs. To support this a systematic approach to

service quality measurement is needed.³ Interest in the measurement of service quality is thus understandably high, and measuring the quality of the tourism experience is now an integral part of most managers' responsibilities.⁴ The challenge, however, is to identify and implement the most appropriate measurement tools for their operation.

The world-wide diving industry is typified by the informal interconnection of four key elements, dive centers, dive shops, dive communities, and dive tour operators. Dive centers are typically substantial dive shops offering the added services of formal diver training and organized excursions to local dive sites and, in almost all cases, are affiliated with at least one international training accreditation body, for example, the Professional Association of Dive Instructors (PADI), an American-based recreational dive body, which claims one fifth of the world's five million recreational

divers. Often dive centers will have training pools and vessels, either purpose built or adapted to cater to groups of recreational divers. Dive pools are compact and deep; boats have fixtures for securing compressed gas cylinders, space for diver equipment, and modified entry and exit ports. In short, the typical dive center offers a one-stop haven for recreational scuba divers—everything under one roof, including training, equipment, and transportation to the best local sites.

Communities are small

A dive shop will typically offer equipment only; less outlay is thus needed. However, no training is available, and often divers are referred to others in the industry for training, tour, and transportation needs. As with dive centers, dive shops tend to stock one or two manufacturers' products only, always bearing in mind that in a number of cases different brands are essentially the same manufacturer.

Diving communities belie the nature of recreational scuba diving globally. They are relatively small fraternities of divers sharing similar lifestyles. A strong sense of *communitas* exists whereby key players in the community, be they dive center owners, trainers, or lifestyle committed "players," are known by most regular divers. Often these bodies or clubs are formed around a particular dive skill, geographical area, or popular dive location. One example is the "Friends of Geographe Bay," a

group of volunteer divers empowered by the Western Australian (WA) government in 1998 to manage access to WA's first artificial reef, the *HMAS Swan* wreck.

Dive tour operators tend to be groups or individuals offering the services of a de facto travel agent, catering for dive holidays. They are probably long-term divers themselves; such is the interconnected nature of the industry that these people may be affiliated with or be the same people that own and/or operate dive centers. A popular service offered is that of live-aboards, which are larger boats catering for long-term dive operations. In various parts of the globe there are offshore reefs and groups of islands whose distance to the nearest populated center precludes the use of normal day charters. Hence live-aboards take paying groups of divers to advertised locations for a number of days at a time. The divers live onboard for the duration, often diving up to three or four dives a day while the vessel is parked near a secluded and pristine off-shore location.

These four inter-related elements of the diver community are traditionally positioned around various coastlines, congregating not unsurprisingly close to major tourism centers, but also near popular and more remote dive locations, the more popular of which tend to revolve around recreational diver skills and preferences, forming a taxonomy for the appreciation of the lifestyle and the subculture that surrounds it.

Reefs, wrecks, and animals can be considered as the underlying motivators for visiting Australian dive locations. Reef diving typically involves groups of divers swimming in and around reefs and limestone formations looking for sub-motivators of a reef dive. Quantity and quality of flora and fauna are an important sub-motivator, as are "swim-thru's" (underwater holes and tunnels) and clarity of water. Wreck diving involves the visitation and exploration of various vessels and objects (aircraft, seafaring, and other vehicles, mostly of a military nature) either sunk or abandoned in most of the world's oceans and/or seas. Many of these vessels take on a special significance, given their history and relative isolation. It is not surprising, therefore, that this type of diving injects a sense of mystery and purpose, of exploration and history.

Reefs are evolution

Artificial reefs form the latest evolution with the purposeful diver adaptation and sinking of former warships in areas sponsored by local community groups and government. The principal motivation for such ventures is, of course, revenue generation and the hope that the costs of such ventures will be more than offset by the income generated by visitors to these sites and surrounding local areas. Australia leads the world in this type of tourism development with the preparation and purposeful sinking of the naval frigate *HMAS Swan* off Dunsborough, and the

destroyer *HMAS Perth* off Albany in Western Australia, sunk at a cost of AU\$400,000 and AU\$1.6million, respectively. These are soon to be joined by *HMAS Hobart*, due to be sunk in 2002 off Adelaide, South Australia, along with an embryonic project to include a recently decommissioned Oberon class submarine.

Animal diving can be further divided into the sub-motivators of hunter diving and appreciation diving. Hunter diving, as the name suggests, involves divers seeking out and carrying the tools to retrieve seafood. This can include crayfish or lobster loops (piercing lobster while catching them is prohibited in most countries by law), spear guns for fish, crab catchers for crabs, and nets for prawns. Diving for appreciation involves diving to a safe proximity, bearing in mind diver safety and animal disturbance, to simply admire different species, perhaps even the taking of photographs and video footage for later enjoyment and identification.

Scuba divers demand quality

The growth in adventure tourism products and services is unprecedented, not the least in Australia where there are a wealth and diversity of natural resources to facilitate their development. Scuba diving, as a niche market within the adventure domain, is also a growth market for the tourism industry in Australia, with dive tourists demanding dive destinations that offer pristine coral reefs, interesting dive wrecks, and abundant marine life.

The World Tourism Organization⁵ in its futuristic report "2020 Vision" outlined the enormous potential of adventure tourism from consumers' wishes to travel to high places (mountaineering), underwater (scuba-diving), and to the ends of the earth (Antarctica trips). Scuba diving is an important and growing component of the adventure tourism market and is a significant part of international and domestic travel around the world. Dignam,⁶ for example, considers that scuba diving is one of the world's fastest growing recreational and tourism activities. This view is shared by Tabata⁷ who suggests that scuba diving and snorkeling rate as the most popular activities for tourists who travel to the tropics and sub-tropical tourism destinations.

Scuba, meaning Self-Contained Underwater Breathing Apparatus, was designed and popularized by Jacques Cousteau and Emile Gagnan in 1943. The aqualung, as it was known then, was the device that underpinned the dive industry as it is known today, allowing humans to travel beneath the waves to explore and experience the underwater world. Earlier, using scuba equipment to spear fish appeared to be the main activity undertaken by divers.⁸ However, since this activity is now illegal in many areas, and since there is a growing world-wide appreciation to look at the environment, diving simply for the experience of diving appears to have replaced this original functional motive. To this end,

interest has grown in a number of diving possibilities, including reef diving, wreck diving, drift diving (planning a dive that allows the current to take a person from one location to another), deep diving, technical diving, cave diving, and competition diving (e.g., "spud" hunts run by dive shops), or simply anywhere that an unusual or attractive feature can be found.

Divers travel further

Tabata suggests that divers are now traveling further afield in pursuit of scuba diving holidays to view wrecks, coral reefs, and caves. In essence, this has led to the emergence of dedicated dive tourism destinations such as the Great Barrier Reef on the eastern seaboard of Australia, Fiji, the Solomon Islands, Vanuatu, and the Maldives. Indeed, in the case of Australia's Great Barrier Reef alone, Wilks and Davis⁹ contend that a total of 243 charter operators are licensed by the Great Barrier Reef Marine Park Authority to conduct scuba diving activities. Windsor¹⁰ estimates that in 1996 alone the dive industry generated some AU\$103 million in annual revenue.

Wilks and Davis suggest that for the purposes of classification, recreational scuba divers generally belong to one of five groups:

- The first group has been trained and certified by an accredited training agency. These divers are classed as "dive certified" and are easily identified by their qualification

card, which is normally required to be shown before any licensed diving activity can be undertaken.

- The second group is in the process of training. These divers must demonstrate their competence in both artificial and open-water environments before certification can be granted.
- The third group of divers is best classed as opportunists or individuals who have engaged in a controlled form of diving activity while on holiday or other recreational endeavors. The emphasis is on safety and giving the individual a flavor for scuba as an activity, with close supervision by certified instructors in a controlled environment--normally a hotel swimming pool.
- The fourth group of divers includes certified instructors and dive masters who run their own diving charter/instruction business or are employed by a particular operator on a seasonal basis.
- The final group of divers may be classed as those who engage in recreational diving at a distance from normal commercial operations. While in the majority of instances these divers are dive certified, many are not, with divers having their own equipment and means of getting to and from actual dive sites.

Rice¹¹ offers a similar classifica-

tion for divers, proposing three broad types of diver ranging from hard core to tourist to potential. The hard core diver, he suggests, is in search of the challenge of the dive destination as well as the specific flora and fauna associated with a particular locale. The tourist engages in scuba as part of his or her vacation, yet may not be the main motivator behind the vacation. The potential diver may best be referred to as a rookie, or someone who is keen to learn.

Operator is critical link

Regardless of the motivation or classification scheme used, the dive tourism industry has grown around meeting the needs of all of these groups, with the dive tour operator being a critical link between the tourist product and tourist needs.¹² In this context it means that the tour operator manages the interaction between the diving environment (caves, reef, marine life, wrecks, etc.) and the specific needs and wants of divers (relaxation, adventure, novelty, remoteness, etc.). This, in turn, highlights that the service provided by the tour operator is likely to be a major determinant of diver satisfaction.

Indeed, this is in keeping with Murphy's¹³ earlier contention that the manner in which visitors are received and the quality of service provided forms a major component of a destination's tourist image. Morgan¹⁴ concurs and notes the importance of the tour operator in understanding tourists' needs, competence, and desires for excite-

ment, as well as ensuring safety and controlling environmental impacts. He contends that an evaluation of the level of service quality provided by the dive tour operator would be a suitable measure of how satisfied customers were likely to be with their dive experience.

Service quality is evaluated

Today's tourism operator faces a lot of choice when it comes to measuring customer perceptions of service quality with a full range of qualitative and quantitative measurement techniques presenting themselves for this purpose.¹⁵ Disconfirmation modeling is one such approach which has grown in significance within the tourism sector over recent years. These techniques seek to explore the relationship between customers' pre-purchase expectations and their perceptions of service performance, and hold that as consumers evaluate the level of a service's performance, they typically can't help but compare that performance to what they expected.¹⁶

One such approach which has received limited acceptance within the tourism sector is that of importance performance analysis (IPA).¹⁷ This measurement technique emerged from the earlier work of Martilla and James¹⁸ and is best described as an absolute performance measure of consumer perceptions of service quality. Unlike other more direct disconfirmation techniques, however, IPA also seeks to identify the underlying importance ascribed by

consumers to various quality criteria being assessed.²⁰ In other words, importance is viewed as a reflection of the relative value of the various quality attributes to consumers. The objective is to identify which attributes, or combinations, are more responsive for repeat purchase behavior and which have less impact.

The information derived should prove invaluable in terms of the development of marketing strategies for the organizations that use it.²¹ This view is confirmed by Lovelock, Patterson, and Walker²² who stated that importance performance analysis is an especially useful management tool helping to direct scarce resources to areas where performance improvement is likely to have the most effect on overall customer satisfaction. It also has the benefit of pinpointing those service attributes which should be maintained and those on which significant improvement will have little impact. This will in turn give direction to the business in terms of what it is attempting to achieve, i.e., total customer satisfaction though the continual provision of a quality diving experience. It will also serve notice to both customers and competitors alike as to the business's strategic positioning. This study seeks to extend the literature on service quality through an application of the importance performance measurement technique within the tourism sector.

To assess consumer perceptions of service quality during the dive tourism experience, a combination

of both qualitative and quantitative methods was employed. This required the use of three specific research instruments, including in-depth one-to-one interviews supplemented by participant and non-participant observations²³ and the administration of a quantitative survey instrument. While all three methods dealt with service quality issues, only the results of the visitor survey are presented in any detail here.

Data for the study were collected by a 25-item self-completion questionnaire developed through an adaptation of the original 22-item SERVQUAL instrument, and better fitted in terms of face validity to suit the context of the dive tourism sector. Scale items were added or adapted based on reports from other similar service quality studies²⁴ and from a series of qualitative interviews completed some months earlier.²⁵ Customers were asked to complete a questionnaire immediately after completing their dive consumption experience, but just prior to departing the dive tour operator's premises. Respondents were asked to rate the level of importance attributed to each dimension on a similar scale anchored from low importance (1) to high importance (5). In addition, respondents were asked to rate their perceptions of the dimensions listed on a five-point Likert scale anchored at strongly agree (5) and strongly disagree (1). Additional questions were asked in relation to customer demographics for further exploratory research into dive tourism.

Tour participants surveyed

A convenience sampling strategy was employed wherein 200 surveys were distributed to all consumers of a guided tour on an artificial reef experience in the southwest region of Western Australia over a four-month period, August to October 1999. Surveys were distributed by the operator post-dive and during the debrief section of the day. Of the 200 questionnaires administered, a total of 163 useable returns were received, representing a valid response rate of exactly 81.5 percent. This was considered an excellent response rate, which may in part be explained by the trusting relationship established over the course of the day between diver and tour operator, and the relatively captive nature of the respondents.

While it may be argued that the nature of such a relationship might in some way impede the generalizability of the results and also weaken the reliability/validity of the results, it should be borne in mind that the study is merely exploratory in nature and is in no way designed to be representative of this sector in general terms. Rather, involved in the supply sector to the very real threats and/or opportunities presented by the service quality issue. As such it is intended to generate debate around how this issue can best be addressed.

A small incentive of a lottery-based free dive was offered as an inducement to prompt completion of the questionnaires. The 163 subjects included 111 (68.1 percent) males

and 52 (31.9 percent) females. Approximately 72 percent of respondents were under 35 years of age, with approximately 75 percent of respondents falling into category one of Wilks and Davis's classification of recreational scuba divers, i.e., fully trained and accredited, 20 percent into category two, i.e., in process of training and 5 percent into category four, i.e., master divers and/or instructors.

This is representative of most off-shore diving cruises at this time of year where at least one fifth of most passenger cargoes is made up of trainees and accompanying instructors and is representative of the dive population in other reported studies.

Quality dimensions revealed

While the overriding goal of the study was to address the value of IPA as a diagnostic quality improvement tool within the dive tourism sector, it also proved useful to test the psychometric performance of the instrument within the particular service setting. Overall, the instrument performed well in terms of both reliability and validity. Overall reliabilities were $\alpha = 0.88$ and 0.92 , respectively, for both the importance and performance scales. Overall reliability for the importance performance (IP) difference scores was also high at $\alpha = 0.86$. Construct validity was also addressed in terms of both convergence and the research instrument's ability to discriminate between the underlying dimensionality of the service quality

construct. Convergence was investigated by calculating the mean difference scores for each of the 25 scale items and correlating (Pearson's product moment correlation) these with the mean score from an overall single item measure of quality which was also included in the instrument. A correlation of 0.778 was found, which was significant at the 1 percent level.

Discriminant analysis made use of the principal components OBLIMIN oblique factor rotation procedure in SPSS-X and is in keeping with the original SERVQUAL study. This was deemed essential, given the inclusion of three additional scale items and the fact that many previous studies making use of the SERVQUAL methodology found that the original factor structure was not held up. This test revealed that the five-component structure proposed by Parasuraman, *et. al.*, for the SERVQUAL scale was held up, with slight overlap in the assurance and reliability dimensions. Results reveal strong factor loadings (item-to-total-correlations) along all five dimensions, with coefficient alpha scores ranging from $\alpha = 0.65$ (TANGIBLES) to $\alpha = 0.92$ (RESPONSIVENESS). These results are shown in full in Table 1.

These reliability scores, excluding that of tangibles, clearly exceed the usual recommendation of $\alpha = 0.70$ for establishing internal consistency of the scale.²⁶ There is no explanation as to why the tangible dimension under-

Table 1
Reliability of extracted service quality dimensions

SERVQUAL Dimension	Importance Attributes [Cronbach's Alpha]	Performance Attributes [Cronbach's Alpha]
Tangibles	0.786	0.653
Empathy	0.838	0.890
Reliability	0.776	0.778
Responsiveness	0.723	0.923
Assurance	0.725	0.806

performed in terms of reliability other than that it may have had something to do with the inclusion of the additional three quality attributes.

Diver perceptions analyzed

The next stage of the analysis was to examine the sample responses across the 25-item attributes to assess diver perceptions of service quality and relative importance assigned by divers to each. This information is presented in Table 3, where mean scores are shown for importance and performance for each of the 25 attributes. In addition, a paired-samples t-test was run to evaluate where mean performance scores differed significantly from mean importance scores. This information is essential in helping operators determine not only how they are performing in relation to all variables, but also what is important in relation to provision from a consumer point of view. In turn, this should help direct improvement efforts where significant differences are shown to exist between performance and

assigned importance for each variable. The analysis does highlight a high degree of co-linearity within the results. While this may at first glance be looked upon as a weakness of such measurement scales, it is felt that given the time required to complete the survey and the discriminant evidence provided, the results are a true and accurate reflection of diver perceptions when recorded.

An analysis of Table 2 reveals that the relative mean scores of the quality items are skewed toward the positive end of the scale with a mean score of 4.558 for perceived importance and 4.414 for perceived performance for this tour operator. While some operators may be satisfied with such figures, closer examination reveals some interesting results. Firstly, divers appear to have concerns on quite a number of fronts with minus values being recorded for 20 out of the 25 quality attributes in the performance minus importance column. Negative scores are indicative of the fact that, given the importance of these items to divers, actual performance

Table 2
Divers' Importance – Performance Means

Quality Attribute	Mean Importance	Mean Performance	Performance minus Importance	t value	Sig. (2 tailed)
Appearance / décor	4.14	3.31	-0.834	-7.645	0.0001
Brochures	4.04	3.40	-0.644	-6.010	0.0001
Understand specific needs of divers	4.72	4.40	-0.325	-5.138	0.0001
Attended to needs promptly	4.78	4.53	-0.252	-4.932	0.0001
Interested in solving problems	4.68	4.44	-0.239	-4.593	0.0001
Got things right first time	4.72	4.51	-0.215	-3.335	0.001
Staff gave prompt service	4.71	4.50	-0.215	-3.335	0.001
Staff kept customers informed	4.69	4.50	-0.190	-3.074	0.002
Boat was highly suitable	4.64	4.46	-0.178	-2.923	0.004
Staff made dive more enjoyable	4.67	4.52	-0.160	-2.429	0.016
Divers treated like special individuals	4.49	4.38	-0.110	-1.851	0.066
Individualized attention to divers	4.59	4.48	-0.104	-1.794	0.075
Behaviour of staff gave confidence	4.75	4.65	-0.098	-2.246	0.026
Delivers services on time	4.58	4.48	-0.098	-1.576	0.117
Staff made customers feel secure	4.60	4.51	-0.092	-1.303	0.194
Divers best interests at heart	4.53	4.44	-0.092	-1.313	0.191
No excessive waiting time	4.51	4.43	-0.080	-1.259	0.210
Staff always willing to help divers	4.66	4.61	-0.055	-0.904	0.367
Dive more convenient than on own	4.65	4.61	-0.043	-0.682	0.496
Staff consistently courteous	4.63	4.61	-0.012	-0.229	0.819
Knowledgeable staff	4.56	4.58	0.025	0.458	0.648
Staff neat	3.99	4.04	0.043	0.421	0.674
Staff never too busy to respond	4.48	4.58	0.098	1.624	0.106
Good facilities	4.55	4.66	0.110	1.891	0.060
No compromise on safety	4.60	4.72	0.123	1.411	0.160

was somewhat below expectation. In essence, therefore, importance values are seen to act as a surrogate for consumer expectations.

The next stage in the analysis examined the relative positioning of the individual service quality attributes in relation to overall mean performance and importance for this operator. One of the advan-

tages of importance performance analysis is that attributes can be plotted graphically on a matrix, and this can assist in quick and efficient interpretation of the results. Figure 1 highlights the relative attributes in matrix format.

The matrix is represented by the importance values on the horizontal axis, while performance

values are on the vertical axis. The skewed nature of the results forced the researchers to use mean values to represent the crosshairs of the matrix; this helped to identify the stronger and weaker attributes more clearly. This is consistent with the suggestion by Martilla and James that the placement of crosshairs is a relative judgment, rather than an absolute measure. It should be clear that while the horizontal importance axis appears stretched in comparison to the corresponding vertical performance axis, the same unit of analysis is used, and this stretching has occurred as a result of the actual minimum and maximum mean values recorded for each scale.

Alternatives available

When presented in matrix format (Figure 1) the results of this analysis present the operator with a number of strategic alternatives. Quadrant A is reflective of a misuse of the operator's resources. While judged to be performing well above average in relation to the provision of the particular service attributes, customers in their assessment of the overall dive experience have deemed these same attributes relatively unimportant. In this regard, the only attribute which stands out is that related to staff being "never too busy to respond." This may be a reflection of the easy-going nature of dive operations where flexibility is an important issue. It is unlikely, therefore, that any further investment and/or improvement in this area will lead to

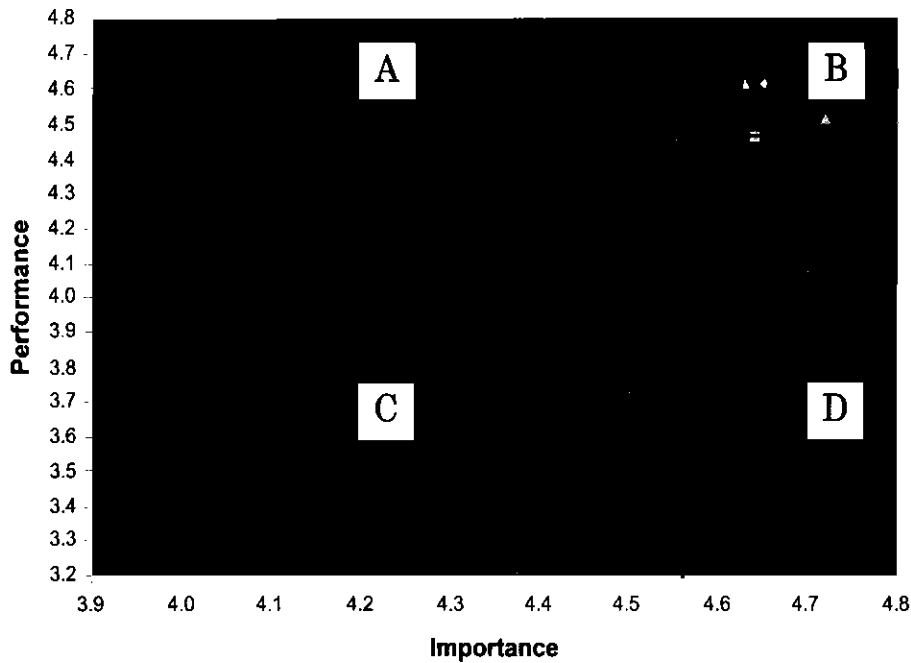
a greater perception of quality on the part of the consumer.

Quadrant B is reflective of a level of optimal performance in that the dive tour operator is perceived to be performing well above average in relation to the delivery of those service attributes deemed important by customers. In this case the vast majority of attributes are perceived to be well above average for those attributes that customers also perceive to be important. This operator has certainly channeled his energies toward a more "personalized" service, and many of the personal contact attributes (e.g., courtesy, helpful staff, attention to needs) are clearly important to customers, and the company is performing well in all respects.

Quadrant C is reflective of the fact that certain aspects of the organization are not performing to their full service potential. When viewed in the context of the corresponding importance weightings, however, any pertaining improvement effort would have to be questioned. In this study, the company can be seen to be under performing in relation to the more tangible aspects of the service provided (brochures, décor, neatness of its staff), but relatively these attributes are not as important to customers as other service quality attributes.

Quadrant D is where a great deal of improvement effort on the part of the operator is required. The matrix illustrates quite clearly that the organization is performing well below average in relation to the provision of an "understanding of

Figure 1
Importance - performance matrix of individual service attributes



the specific needs of divers” which may take into consideration such things as competence of divers, needs for interpretation, and certain motivational characteristics. As these same attributes are deemed to be of great importance by customers in their overall evaluation of the service experience it is essential that company improvement efforts be prioritized in this area. Perhaps an initial screening of diver experience may be able to channel divers into groups of similar competence (e.g., deeper, longer, and more advanced dives).

Quality dimensions analyzed

The final stage of analysis was to concentrate on the service quality dimensions extracted during the initial factor rotation (Table 3).

As with the previous analysis of individual service quality attributes (Table 2), results reveal that the mean importance scores for each dimension are again skewed toward the positive end of the scale. Table 3 suggests, however, a more even distribution of mean performance scores ranging from $m=3.40$ for empathy through to $m=4.53$ for responsiveness. While diver expectations have only been marginally unconfirmed in the negative rela-

Table 3
Comparison of importance/
performance scores for service quality dimensions

SERVQUAL Dimension	Mean Importance	Mean Performance	Performance minus Importance	t value	Sig. (2 tailed)
Tangibles	4.27	3.97	-0.30	-5.417	0.01
Empathy	4.04	3.40	-0.644	-6.010	0.01
Reliability	4.72	4.40	-0.325	-5.138	0.01
Responsiveness	4.78	4.53	-0.252	-4.932	0.01
Assurance	4.68	4.44	-0.239	-4.593	0.40

tive to the importance ratings, two-tailed significance tests do reveal that these differences are nonetheless significant at the level $p < 0.05$ in the case of four out of the five dimensions assessed.

Analysis reveals that, as a whole, responsiveness rated highest in terms of overall importance to divers ($m=4.78$), followed by reliability, assurance, tangibles, and empathy. This is an interesting finding, given the fact that as a leisure pursuit scuba diving is a particularly hazardous and/or potentially life threatening activity. One would imagine, therefore, that divers would be seriously concerned with the many safety aspects of the activity and in being assured with the actual dive tour operator's credentials as a matter of priority.

As Table 3 reveals, however, assurance is ranked third in terms of perceived importance. This would seem to imply that divers are more interested in actually getting into the water and take the assur-

ance dimension almost for granted. This may in part be explained by the highly-regulated nature of the industry and the many credentials that operators are required to possess before a license is awarded. In many instances these credentials are displayed openly within the premises of the operator and serve to reassure the diver that they are in safe hands. This, of course, is a classic illustration of the Bitner's²⁷ servicescape concept and the importance of tangible physical evidence in the service environment. It should also be reported that all staff employed by the particular company are fully dive master qualified with extensive diving experience in various types of environments throughout the world. This fact is clearly communicated to all divers prior to the commencement of their actual dive.

Equally surprising is the fact that the empathy dimension has rated lowest in terms of the level of ascribed importance attributed by

divers. This would seem to contradict the popular belief from within the broad services literature that it is not so much what is received as opposed to how it is delivered that makes a perceptible difference in the minds of most service consumers. Table 3 makes it clear that divers rate the more technical and/or functional aspects of the dive experience as being more important than the more personal and/or relational. This may be related in some way to the pressure of time, weather, and other situational variables, which can make or break a diving tour.

Company is responsive

As with the importance scores the company seems to have performed best in relation to the responsiveness dimension ($m=4.53$) which is, of course, an excellent result given the level of ascribed importance recorded for this dimension. Divers are clearly delighted with the company's performance in this respect. This is followed by assurance, reliability, tangibles, and empathy, and while at first glance these results are largely consistent with their respective importance rankings, the company is clearly under performing in all respects, with the level of ascribed importance clearly outweighing perceived performance for all dimensions.

Most surprising is the fact that the operator performed most negatively in relation to the empathy dimension, which seems to suggest that company employees are not

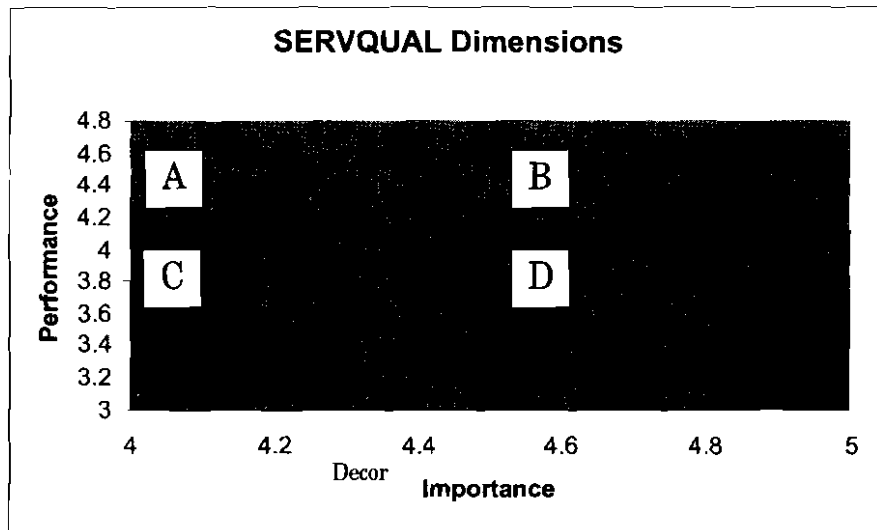
welcoming and sympathetic to the needs of divers. While, this dimension was ranked lowest in terms of overall importance by divers, the company should nonetheless be concerned about this finding. A series of two-tailed significance tests (Table 3) demonstrates that significant differences were found at the level $p<0.05$ in relation to this and three other dimensions, including tangibles, reliability, and responsiveness. Given the importance of each of these dimensions to divers, these findings should be of clear concern to this operator. Clearly a considerable improvement effort is required in all respects. Each of these dimensions is plotted on a further importance performance matrix, as presented in Figure 2.

Findings direct improvement

The study has implications on a number of levels concerning the management and measurement of service quality. First, for the specific operator under investigation, and, second, for the broader dive tourism sector.

Looking first at the particular operator, there are a number of concerns that require immediate attention. The results illustrate that while overall perception scores are well above average, they are nonetheless below the level of expectation in most cases, with 20 out of the 25 variables assessed recording negative difference scores (Table 2). Looked at from a dimensional perspective (Table 3) this operator is experiencing difficulty in

Figure 2
Importance-performance matrix of SERVQUAL dimensions



all respects, with statistically significant ($p < 0.05$) difference scores being recorded for four of the five RATER dimensions. Of most concern, however, is the fact that this operator has been found to be under performing in relation to key safety aspects of the diving experience, recording a statistically significant negative differential against the reliability dimension. If left unchecked, this has the potential to undermine both existing marketing efforts and longer term survival. As with any other form of potentially life-taking adventure tourism activity, a company's reputation is only as good as the positive word of mouth generated by its last customer. In a marketplace dominated by high levels of new entrants and correspondingly high levels of discontinuance, it is essential that

the necessary cause and effect analysis be undertaken in order to correct this perception.

Surprisingly, the operator has fared worst of all in relation to the empathy dimension, which is reflective of the level of understanding shared between the dive tour operator and its customers. While deemed relatively unimportant in comparison to other dimensions of the dive experience by this group of respondents, the operator should be cognizant of the role and importance generally of the softer elements of the service experience to most customers. While most divers are mainly concerned with the quality of the actual dive, many customers are now concerned with the totality of the experience, and there can be no doubt that an operator's performance in this respect

can have the potential to recover and/or improve an otherwise mundane experience.

Clearly both issues are of concern to customers, and quality improvement efforts should be targeted accordingly. This should start with a deeper analysis of the issues in, perhaps, a focus group forum. This would permit the operator the opportunity to tease out the specifics of customer concerns and would permit customers the opportunity to express themselves in greater detail. In turn, the rich information derived could be used to more accurately direct company improvement efforts and competitive standing.

System redesign needed

In the case of this operator, all elements of the tour operator's delivery system should be redesigned around those attributes deemed important by divers. The service facility, product, operations, and customer service functions must be totally customer focused. This requires that the customer continue to be consulted in all stages of the service design process so that his or her needs can be properly ascertained and delivered. This should allow the organization to extract exact specifications for the design of the service system from the actual end user. These specifications can then be used to map and/or blueprint the service so that fail points can be identified and cause/effect and effect/solution analyses can be conducted as and when required. For example, atten-

tion is clearly required with respect to the softer delivery aspects of this operator's dive charter offering. Divers rated the empathy dimension as performing badly, yet also rated this dimension as being of high importance in their consumption of the dive product.

More broadly, the study highlights the importance of the service quality issue for dive tour operators and demonstrates that while success overwhelmingly depends upon the quality of the actual dive experience, the quality of service afforded before, during, and after the dive experience is now crucial in overall diver evaluations. In an industry sector which offers little by way of differentiation in terms of dive sites visited, operators may be afforded the opportunity to differentiate themselves competitively on the basis of the quality of service provided. This is an emerging and particularly important area of interest for many operators, particularly as they struggle to compete with an almost annual raft of new market entrants who are keen to compete on the basis of price alone. While in the past, dive tour operators have responded on the basis of product and price competition, they are now realizing that they can shelter from this form of competition on the basis of both product and service quality. What is essential, however, is that they understand the key links between service quality provision, customer value, and longer term loyalty and the fact that one is very much antecedent of the other.

As with most other forms of tourism operation this will require a fundamental rethinking in relation to most aspects of current business practice, including business focus, mission setting, delivery system design, staffing levels and performance, and detailed and ongoing market research. The overriding priority has to be the generation of both customer and referral loyalty; this can only happen with a clear and enunciated customer orientation strategy.

IPA is first step

To this end, importance/performance analysis is a very good first step in determining not only what is important to customers in terms of the dive tour experience, but also how the organization is performing in relation to satisfying the specific customer requirements identified. The final tabulated results pictorially and graphically show the strengths and weaknesses of the service dimensions studied for this tour operator.

IPA also has the benefit of pinpointing the service attributes which should be maintained at present and those on which significant improvement will have little impact. In turn this will give direction to the business in terms of what it is attempting to achieve, i.e., total customer satisfaction through the continual provision of a quality diving experience, and serve notice to both customers and competitors alike as to the business's strategic positioning. Additionally, the relative simplicity of the technique for

tourism operators means that limited market research knowledge is required.

Operators should be mindful, however, that system requirements might have to change over time due to a change in the relative importance of particular attributes to customers. In other words, the customers' needs may remain the same, but the relative priority of the needs may change, which of course will require that the delivery mechanism be adopted to reflect this change. This could, for instance, occur as a result of the level of experience a consumer has with a service provider over time. For example, in the context of service provided by this operator, divers have rated the responsiveness dimension of service quality as most important at the time of completion. This is not surprising given their relative inexperience with the particular operator. Over time, however, it is likely that this situation may change with the diver becoming more independent due to his or her familiarity with the tour operation.

The major limitation of the study is obviously the focus on one tour operator. The easy replication of this technique across a sector of the tourism industry or across a specific destination should, however, assist marketers to assess competitive market positioning. There is clear need to conduct further extensive empirical testing of such models in a range of different dive settings and with a range of different dive customers in

order to continue to establish the reliability and validity of the techniques as a general framework for the assessment of dive quality.

Obviously this study or the use of importance performance analysis is not attempting to be prescriptive, but should be used to help researchers investigate possible problem areas in more detail. In addition, the study did not attempt to consider possible intervening factors that may affect the composition of the action grid. Future studies could incorporate factors such as number of previous visits, amount of dive experience, gender difference, age differences, and nationality differences. It should also be noted that the quantitative analysis used here does not explain why the observed ratings occurred; for this, supplementary qualitative research would be useful.

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