# The Use of Importance–Performance Analysis and Market Segmentation for Tourism Management in Parks and Protected Areas: An Application to Tanzania's National Parks

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**This paper presents an application of the IPA technique, coupled with market segmentation, to a sample of visitors to Tanzania's National Parks. The utility of the technique in a protected area context is highlighted, by comparing it with the results from three programme perspectives – non-segmented data (a homogeneous IPA programme), segmented data that look at performance measurements only (a segmented performance-only programme), and segmented data (a segmented IPA programme). A few examples of non-parametric statistical analysis are presented to highlight the flexibility of the technique. When combined with market segmentation, IPA is a superior technique to that of a non-segmented approach, which views the sample as homogeneous and can lead to the displacement of visitors. It is also superior to that of a performance-only approach. The technique is achievable for a protected area agency with limited resources and expertise and is also a good starting point for agencies with suitable resources and expertise.**

## Introduction

For many nations, particularly in the developing world, protected area tourism either generates, or has the potential to constitute, a significant proportion of national GDP, foreign exchange earnings and employment figures. Many protected area agencies, which oversee these tourism estates, face decreasing levels of public funding and an increasing dependence on internal capital generation. As a result, many of these bodies have changed their management structure from that of a traditional government agency, to that of a crown corporation or parastatal which retains its revenues. This scenario has created an increased managerial focus and reliance on tourist client satisfaction. Most park agencies, however, lack experience and expertise in client satisfaction measurement and other types of marketing research.

Not all park agencies monitor park visitor satisfaction, and many base standards of satisfaction on the expert judgement of management (Vaske *et al*., 1991).

For those agencies that have developed a visitor survey, satisfaction measurement can consist of a 'performance only program', which looks purely at service ratings but not at the importance of services to clients. Studies and practice have shown that while client input is essential in regards to rating the performance of service ratings, a park agency must also know what patrons expect from a service and the aspects they feel are important (Mackay & Crompton, 1988). Tools are therefore needed to help managers comprehend and evaluate client services with more than performance measures alone.

Sophisticated techniques such as the SERVQUAL instrument (Parasuraman *et al.*, 1988) have been developed, and applied to park contexts (Hamilton & Crompton, 1991) but are generally impractical for use in protected areas. These techniques often require the use of complex software and require expertise not only in their administration, but also in the interpretation of data (Duke & Persia, 1996). In addition these techniques require lengthy survey instruments and often exhibit low response rates for park visitors who are accustomed to filling out surveys about only 10–15 minutes in nature.

One technique available to the protected area professional is Importance–Performance Analysis (IPA). The application of IPA, introduced by Martilla and James (1977) is well documented, and has shown the capability to provide service managers with valuable information for both satisfaction measurement and the efficient allocation of resources, all in an easily applicable format.

In brief, importance and performance scores attained from survey instrument Likert scales are plotted onto a two-dimensional matrix, where arbitrary gridlines are established that reflect standards of service quality and managerial goals. Importance questions may read something like *Please rate how important the following services are to you while at our establishment*, while performance questions may read as *How did we perform on the following service aspects*? All points fall into one of four quadrants:

- *Keep up the good work*: Importance and performance ratings both meet or exceed service quality standards;
- *Concentrate here*: Importance and performance ratings both fall short of service quality standards;
- *Low priority*: Performance scores do not meet the service quality standard, but respondents do not place a high level of importance on the service; and
- *Possible overkill*: Performance scores meet or exceed service quality standards, but a low level of importance is assigned to this particular service.

An example of an IPA grid is shown in Figure 1.

## Importance–Performance Analysis

IPA has been applied to a diverse range of contexts including banking (Ennew *et al.*, 1993), dentistry (Nitse & Bush, 1993), and health care (Dolinsky & Caputo, 1991) and in a tourism/outdoor recreation context has been applied to special events such as municipal marathons (Guadagnolo, 1985), ski resorts (Hudson & Shepherd, 1998; Uysal *et al.*, 1991), escorted tours (Duke & Persia, 1996) and hotels (Martin, 1995). It has also seen limited application to tourism in protected areas, in the areas of facility evaluation such as
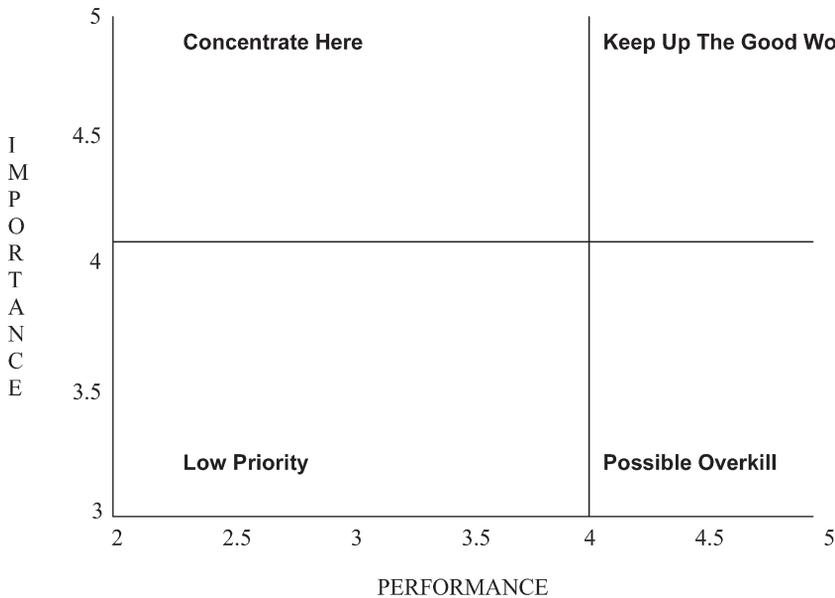
**Figure 1** Importance–Performance matrix

visitor centres (Mengak *et al.*, 1986), and cabins (Hollenhorst *et al.*, 1992), and also in the measurement of opinions of park concessionaires (Burns, 1988). In protected area management, IPA is seldom used in professional marketing practice, although recommendation for its use as a guideline for managers was recently proposed (Hornback & Eagles, 1999).

While deemed as a useful tool for homogeneous markets, displacement of visitors can occur if subgroups containing different importance ratings are not segmented from the data (Vaske *et al.*, 1996). For example, if a representative sample of a park population actually contains a number of specific visitor groups, and one of these groups represents a large percentage of use, and subsequently the sample, the mean IPA ratings will reflect this dominant segment. Management, thinking they are catering to the general park population, will actually cater to the satisfactions of this large group. However, if the smaller segments have distinct values that appear in different quadrants of the IPA grid, managerial decisions catered toward the dominant group may actually displace some to go elsewhere. Subsequently, more individuals from the dominant group may be attracted to the park, and in future IPA analysis service quality will appear to be elevated.

Market segmentation is a fundamental practice in marketing research, which involves the process of dissecting markets into smaller subgroups that share common characteristics. While there is no universal consensus on the characteristics by which to conduct segmentation in the tourism industry, variables are generally categorised according to geographic, demographic, psychographic, and behavioural traits (Morrison & O'Leary, 1994). Since visitors to parks can seldom be grouped into one whole, market segmentation appears to be a necessary component of the application of IPA to parks. While the

identification of segments often involves the use of complex factor and cluster analysis techniques, in the context of tourism in parks it is generally based on the behavioural traits of visitors such as camping or day use, and segments can generally be derived in an *a priori* manner.

## Purpose

This paper presents an application of the IPA technique coupled with market segmentation to a sample of visitors to Tanzania's National Parks. The utility of IPA as a viable client satisfaction measurement instrument for the protected area manager is highlighted, by comparing the matrix results and interpretations with those attained from other techniques. Specifically, the study data are compared and contrasted with three program perspectives – non-segmented data (a homogeneous IPA programme), segmented data that look at performance measurements only (a segmented performance-only programme), and segmented data (a segmented IPA programme). A few examples of non-parametric statistical analysis will also be presented to highlight the flexibility of the technique.

## Methodology

### Case study nation – Tanzania

Tanzania, located in East Africa, contains a world-class system of national parks and game reserves. Tourism, which is largely based on these parks, has developed to become the nation's second leading foreign exchange earner (MNRT, 1997). The country is less developed than its East African neighbours, and seeks to position itself as a low-density, high-quality, and high-priced tourism destination (Wade *et al*., 2001). However, a lack of infrastructure and staff training – particularly in the area of marketing research exists. Tanzania National Parks (TANAPA), the agency that manages the national parks, currently has no formal visitor satisfaction measurement programme. The agency possesses little managerial research capacity, and is an example of an organisation that could benefit from this technique. The country offers an excellent case study example for this study.

In order to illustrate various aspects of the IPA and segmentation technique (which will be referred to as a 'segmented IPA programme'), examples from samples of two national parks (Kilimanjaro and Serengeti) and a sample representing the system of parks will be presented. The details of the samples and market segments are presented in the results sections.

### Development of survey instrument and segments

Satisfaction variables and market segments for each park were identified through a series of focus groups conducted with various TANAPA staff both at the agency headquarters and individual parks, in addition to consultations with a number of knowledgeable tourism personnel in various sectors of the tourism industry, and some visitors. In addition, surveys used in North American parks were also reviewed. A series of park-specific and standardised variables for all surveys were developed and incorporated onto a survey instrument. Questions asking respondents demographic, socio-economic, trip

characteristic, travel motivation, and expenditure information were also present. Importance-Performance variables were measured on a 5-point Likert scale and limited to an approximate total of 15 depending on the park, in order to maintain an average time of 15 minutes to fill in the questionnaire. While some IPA studies develop surveys containing over 100 variables, and subsequently conduct factor analysis to narrow them down, this was deemed as too complex for an introductory study in an agency with little social science experience.

A first draft of the survey instrument was administered on a group of park tourists as a pretest. In addition to measuring response times and developing distribution strategies, the pretest solicited respondents for their feedback regarding the IPA and other variables being measured on the instrument. The survey was subsequently refined based on this feedback. An 'other' variable was included in the pretest but removed due to space and a low response rate. A variety of segmentation scenarios utilising demographic and socio-economic variables were also analysed, to investigate whether other forms of segmentation could prove useful for the study. The behavioural segments however proved to be the most useful discriminator.

## Analysis parameters

Since the goal of Tanzanian tourism is to position itself as a high end, high service quality destination (Wade *et al.*, 2001), gridlines were placed at values of 4.0 to reflect standards of 'extremely important' and 'excellent' performance. Some debate exists in the literature as to whether mean or median values are better for the importance and performance ratings (Burns, 1988). Mean values were chosen for this study, since they are easily derived. In addition, the study followed the example of Hudson and Shepherd (1998) and did not 'force' variables into all quadrants.

The examples are analysed from the following three program perspectives:

(1) the Homogeneous IPA programme where importance and performance measures are present, but no market segments are identified within the sample;
(2) the Segmented performance-only programme where market segments are identified but results are only attained for performance measures only; and
(3) the Segmented IPA programme where market segments are identified and measures of both importance and performance are present.

In addition, a few results of significant non-parametric statistical will be presented to highlight its compatibility with importance–performance analysis.

## Results

### Kilimanjaro National Park visitors

Figure 2 illustrates the importance-performance grid results for a non-segmented sample of climbers to Kilimanjaro National Park (*n* = 129). Based on this homogeneous group, the (D) friendliness of guides and (E) group harmony are strengths in the visitor experience. Areas where staff can concentrate
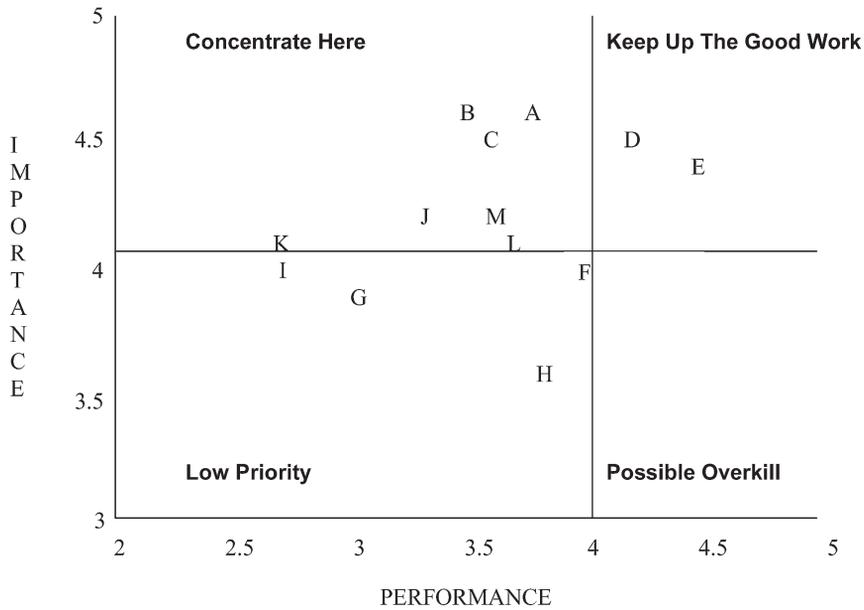
Kilimanjaro National Park Importance and Performance Ratings

| Code | Variable | Mean importance | Mean performance | Difference |
|------|----------|-----------------|------------------|------------|
| A | Low level of litter | 4.58 | 3.70 | −0.88 |
| B | Security from theft | 4.57 | 3.46 | −1.11 |
| C | Knowledge of guide | 4.52 | 3.52 | −1.00 |
| D | Friendliness of guide | 4.46 | 4.07 | −0.39 |
| E | Group harmony | 4.35 | 4.44 | +0.09 |
| F | Friendliness of porters | 3.92 | 3.99 | +0.07 |
| G | Convenience of registration | 3.84 | 3.00 | −0.84 |
| H | Security from wildlife attack | 3.61 | 3.85 | +0.24 |
| I | Availability of information | 3.96 | 2.76 | −1.20 |
| J | Low level of crowdedness | 4.14 | 3.26 | −0.88 |
| K | Cleanliness of washrooms | 4.02 | 2.61 | −1.41 |
| L | Friendliness of TANAPA staff | 4.02 | 3.60 | −0.42 |
| M | Accommodation | 4.15 | 3.54 | −0.61 |

**Figure 2** Importance–Performance grid for Kilimanjaro users

on improving the visitor experience include levels of (A) litter and (J) crowding, (B) security from theft, (C) knowledge of guides, (M) quality of accommodation, (K) cleanliness of washrooms and (L) friendliness of park staff. Figure 1 suggests that the managers have considerably more issues to address than issues well handled.

Figure 3 illustrates the differences in the importance–performance grid when the Kilimanjaro climber sample is segmented into Marangu climbers
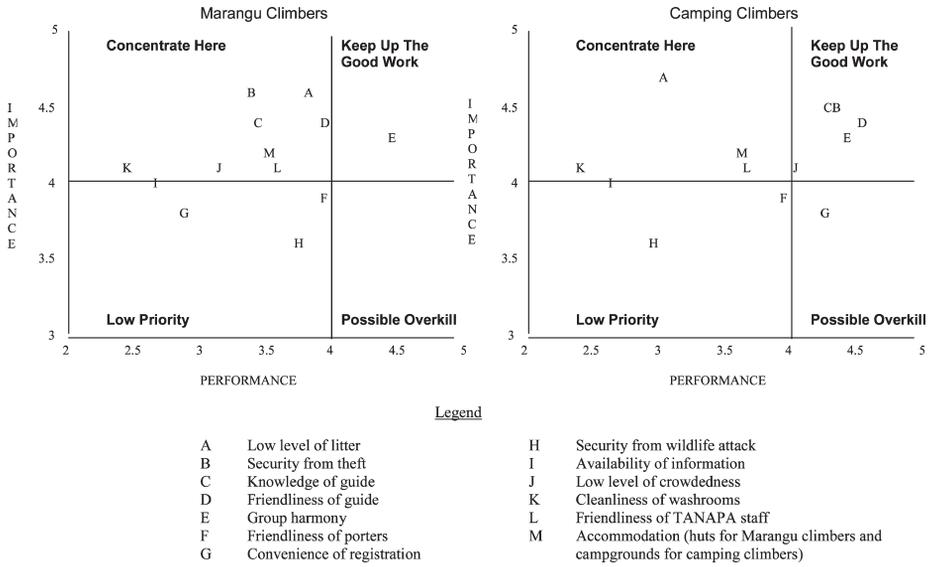
**Figure 3** Importance–Performance grid for Marangu and camping climbers at Kilimanjaro national park

(which represent 85% of park visitors and climb along the main Marangu route, staying in the park huts), and Camping climbers (which represent 15% of users and climb along one of the alternative routes in the park, and for the most part camp in tents). The Marangu climber IPA shows four factors requiring management emphasis that are well received in the Camping climber segment. These are (C) knowledge of the guide, (B) security from theft, (D) friendliness of the guide, and (J) low levels of crowdedness.

The differences amongst the segments are further highlighted in Table 1, which contains data for the variable of guide knowledge. The 'homogeneous IPA programme' (based on the values for the total park sample row only) concludes that visitors place high importance on guide knowledge (mean = 4.52), but rate it as low in performance (mean = 3.52), thus placing the variable for all users in the 'concentrate here' quadrant. The 'segmented IPA programme' recognises the differences between segments and places Camping climber guides in the 'keep up the good work quadrant' since the performance is high for this group (mean = 4.21) and Marangu guides in the 'concentrate here' quadrant.

**Table 1** Importance/Performance of guide knowledge in Kilimanjaro national park

| *Kilimanjaro segment* | *Importance* | *Performance* | *Difference* |
|---|---|---|---|
| Marangu climbers | 4.43 | 3.41 | −1.02 |
| Camping climbers | 4.53 | 4.21 | −0.32 |
| Total park sample | 4.52 | 3.52 | −1.00 |

**Table 2** Importance/Performance of guide friendliness in Kilimanjaro national park

| Kilimanjaro segment | Importance | Performance | Difference |
|---|---|---|---|
| Marangu climbers | 4.48 | 3.94 | −0.46 |
| Camping climbers | 4.37 | 4.56 | +0.19 |
| Total park sample | 4.46 | 4.07 | −0.39 |

Table 2 contains data for the variable of friendliness of the guide. A 'homogeneous IPA programme' perspective places the variable in the 'keep up the good work quadrant' since total park sample means for both importance and performance are above 4.0 (mean = 4.46 and 4.07). The 'segmented IPA programme' analysis places Camping climbers in the 'keep up the good work' quadrant, and the Marangu climbers, the main park user group, in the 'concentrate here' quadrant, since performance ratings are below 4.0 (mean = 3.94).
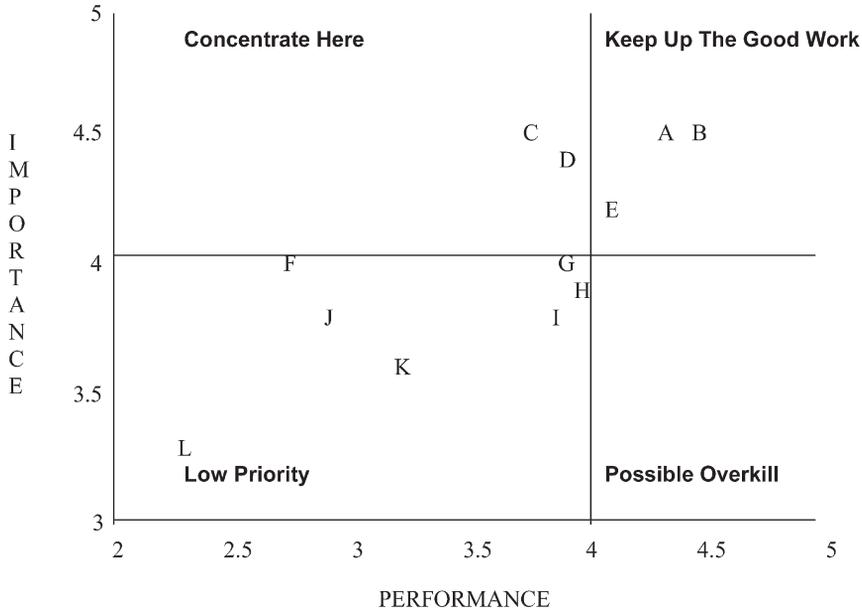
## Serengeti National Park visitors

Four market segments were identified for the sample of visitors:

(1) lodge safari visitors who stay at one of the lodges or hotels in the park;
(2) special campers who as part of a luxury safari camp in one of the special campgrounds;
(3) camping safari visitors who arrive in groups of about three or four and camp in the public campgrounds; and
(4) overland safari visitors who travel throughout Africa in trucks holding groups of 10 people or more and who camp in the public campgrounds.

Figure 4 illustrates the importance and performance grid for the non-segmented sample of visitors to Serengeti National Park ($n = 235$). Based on this visual analysis, (C) security from theft and (D) levels of crowdedness are the areas where management should concentrate their efforts. Visitors are satisfied with the (A) knowledge and (B) friendliness of the guides and (E) group harmony. The interpretation of results changes when the segments are identified within the homogeneous sample, and examples are displayed below.

Importance and performance ratings of the segments for the variable of cleanliness of washrooms are presented in Table 3. From the 'homogeneous IPA program' perspective, visitors place a mean importance of 3.98 on cleanliness of washrooms, slightly below the gridline standard of 4.0. Despite performance being rated as low (mean = 2.67), the value for the homogeneous sample is in the 'low priority' quadrant. The 'segmented IPA program' perspective views Lodge and Overland safari users as placing a high importance on washroom cleanliness (mean = 4.05 and 4.10) and combined with their low performance ratings (mean = 2.95 and 1.80), place these two user groups in the 'concentrate here' quadrant. The Camping safari and Special camper groups are in the 'low priority' category due to their lower importance ratings (mean = 3.80 and 3.60). When non-parametric statistics are used, one can further deduce through results of a one-way analysis of variance (ANOVA) that Overland safari visitors place a significantly lower performance rating on

Serengeti National Park Importance and Performance Ratings

| Code | Variable | Mean importance | Mean performance | Difference |
|------|----------|-----------------|------------------|------------|
| A | Knowledge of guide | 4.52 | 4.28 | −0.24 |
| B | Friendliness of guide | 4.50 | 4.43 | −0.07 |
| C | Security from theft | 4.35 | 3.60 | −0.75 |
| D | Low level of crowdedness | 4.30 | 3.91 | −0.39 |
| E | Group harmony | 4.16 | 4.08 | −0.08 |
| F | Cleanliness of washrooms | 3.98 | 2.67 | −1.31 |
| G | Security from wildlife attack | 3.95 | 3.88 | −0.07 |
| H | Friendliness of TANAPA staff | 3.88 | 3.94 | +0.06 |
| I | Accommodation | 3.82 | 3.80 | −0.02 |
| J | Availability of information | 3.76 | 2.84 | −0.92 |
| K | Visitor centre | 3.57 | 3.20 | −0.37 |
| L | Quality of roads | 3.33 | 2.22 | −1.11 |

**Figure 4** Importance–Performance grid for Serengeti users

washroom cleanliness than all other groups. Clearly the different Serengeti user groups have different responses with this important variable.

A very different type of interpretation occurs when a 'segmented perform-ance-only program' perspective is taken. In this view, all groups are unsatisfied – with Overland safari users being the most unsatisfied, and spe-cial campers the least. All are considered as being unsatisfied since perform-ance means are all below 4.0. No consideration of importance ratings is taken, since they are not measured in this programme.

**Table 3** Importance/Performance of cleanliness of washrooms in Serengeti national park

| Serengeti segment | Importance | Performance | Difference |
|---|---|---|---|
| Lodge safari | 4.05 | 2.95 | −1.10 |
| Special campers | 3.80 | 3.60 | −0.20 |
| Camping safari | 3.60 | 2.54 | −1.06 |
| Overland safari | 4.10 | 1.80[a] | −2.30 |
| Total park sample | 3.98 | 2.67 | −1.31 |

[a]f test probability for one-way ANOVA ≥0.01 with lodge safari, ≥0.05 with special campers, and ≥0.10 with camping safari

**Table 4** Importance/Performance of low level of crowdedness in Serengeti national park

| Serengeti segment | Importance | Performance | Difference |
|---|---|---|---|
| Lodge safari | 4.29 | 4.10 | −0.19 |
| Special campers | 4.50 | 4.50 | −0.00 |
| Camping safari | 4.27 | 3.40 | −0.87 |
| Overland safari | 4.33 | 3.71 | −0.62 |
| Total park sample | 4.30 | 3.91 | −0.39 |

Table 4 illustrates results for the variable of level of crowdedness in the park. The 'homogeneous IPA programme' interprets that visitors place a high level of importance on levels of crowdedness (mean = 4.30) and rate the level of performance below the service quality standard of 4.0 (mean = 3.91), placing it in the 'concentrate here' quadrant. The 'segmented IPA programme' would place Lodge and Special campers in the 'keep up the good work' quadrant and camping and overland safari users in the 'concentrate here' quadrant. A 'segmented performance-only programme' analyst would conclude that performance is low for Camping and Overland safari visitors, but acceptable for Lodge and Special campers based on the performance ratings only.

Results for accommodation ratings are presented in Table 5. While Lodge safari users stay at the lodges, and Special campers at the special campsites, Overland and Camping safari users both stay in public campsites. The 'homogenous IPA programme' places the variable in the 'low priority' quadrant, since the mean importance (mean = 3.82) and performance (mean 3.80) values are below the criterion of 4.0. The segmented IPA programme places Lodge

**Table 5** Importance/Performance of accommodation in Serengeti national park

| Serengeti segment | Importance | Performance | Difference |
|---|---|---|---|
| Hotel/lodge in park | 4.09 | 4.33 | +0.24 |
| Special campsite | 4.00 | 4.60 | +0.60 |
| Public campsite | 3.33 | 2.86 | −0.47 |
| Total park sample | 3.82 | 3.80 | −0.02 |

safari and Special campers in the 'keep up the good work' quadrant, due to the mean importance (mean = 4.09 and 4.00) and performance ratings (mean = 4.33 and 4.60) being above 4.0. It places the public campers in the 'low priority' quadrant, since these visitors while rating the campgrounds as low in performance (mean = 2.86), also place a low level of importance on the campground (mean = 3.33). The 'segmented performance-only programme' would conclude that while Lodge and Special campsite users are extremely satisfied with their accommodation, public campers are not, and therefore public campsite quality should be addressed.

## System of national parks

Table 6 presents results from a sample of visitors from across the system of national parks, and represents the national park tourism market for the nation ($n = 474$). Southern circuit users are those who visit the remote and undeveloped parks found in the southern part of the country, Climbers are those who visit one of the two mountain parks, and Northern circuit users are those who travel along the common travel route of northern safari parks.

The variable of low levels of crowding is illustrated. The 'homogenous IPA programme' would view national park users as being in the 'concentrate here' quadrant due to importance being greater than 4.0 (mean = 4.30) and mean performance being at 3.78. The 'segmented IPA programme' while placing Climbers and Northern circuit visitors in the 'concentrate here' quadrant, would recognise the satisfaction of the Southern circuit group, placing them in the 'keep up the good work' quadrant, due to the high performance rating (mean = 4.71), in conjunction with the mean importance rating above 4.0 (mean = 4.80). The 'segmented performance-only programme' would draw the conclusion that Southern circuit users are satisfied, and Climbers and Northern circuit visitors unsatisfied, based on the performance ratings alone.

**Table 6** Mean values for low levels of crowdedness by segment

| TANAPA segment | Importance | Performance | Difference |
|---|---|---|---|
| Southern circuit | 4.80[a] | 4.71[b] | −0.09 |
| Climbers | 4.14 | 3.26 | −0.88 |
| Northern circuit | 4.37 | 3.92 | −0.45 |
| Total sample | 4.30 | 3.78 | −0.52 |

[a]f test probability for one-way ANOVA $\geqslant 0.05$ with northern circuit, and $\geqslant 0.01$ with climbers
[b]f test probability for one-way ANOVA $\geqslant 0.01$ with both groups

When one-way analysis of variance (ANOVA) tests are applied to the data, it is further revealed that Southern circuit users place a significantly higher level of importance, and a significantly higher level of performance than the other two groups on levels of crowding in Tanzanian national parks. This finding is probably due to the much lower levels of public use that occur in the national parks of the southern circuit.

## Discussion of Results

### Kilimanjaro National Park

The examples for Kilimanjaro National Park clearly show that important information can go undetected when a small user group is not segmented from the main population. The camping climbers were clearly more satisfied with their experience at the park, and in particular with their guides than the Marangu climbers. Had the camping climbing group not been segmented from the data, managers would incorrectly conclude that guide satisfaction was low for this group. This is an important finding as different companies and guides serve the alternative camping climber routes, than those who service the Marangu route.

If this trend in the data had been reversed – the camping climbers dissatisfied with the knowledge of their guides and the Marangu climbers satisfied, the dissatisfaction of the smaller group (in this case the camping climbers) would likely go undetected. In this scenario, quality of guides would be perceived as being in the 'keep up the good work' quadrant, and could lead to the displacement of camping climbers – the phenomenon described by Vaske *et al.* (1996).

In addition, we see here how the existence of a small segment can inflate the satisfaction means of a larger segment, when not separated in the data. Table 2 shows that since the camping climbers were overwhelmingly satisfied with the friendliness of their guides (mean performance = 4.56), this brought the overall sample mean to 4.07, placing the variable into the 'keep up the good work' quadrant. However, the performance mean for Marangu climbers was 3.94, placing this main user group into the 'concentrate here' quadrant. The smaller undetected segment could inflate the data so the main segment, appearing satisfied with their experience, could not appear to be in need of improved service quality.

### Serengeti National Park

In the Serengeti examples we see the dynamics of having four segments as part of an importance-performance analysis. Segmentation is clearly necessary to recognise the distinct dynamics of each group. An important note may be found in the type of segments created. In the Serengeti example, it may have been logical for the analyst to include both overland safari visitors and camping safari visitors into one segment, since they both stay in the public campgrounds – a 'public camping safari' segment for example. Had this been the case, the combined segment would have fallen into the 'low priority' quadrant for quality of washrooms variable (Table 3), and the ratings of the overland safari visitors being in the 'concentrate here' quadrant would go unnoticed.

This distinction in IPA ratings is significant information since the overland safari visitors use the same public camping facilities and washrooms, that the camping safari visitors use. Since the overland visitors have passed through a number of other African countries, their point of reference is different. They may be comparing the washrooms found in the Tanzanian national parks to those found in competitor nations. Since Tanzania wishes to position itself as

a high end, high quality tourist destination (Wade *et al.*, 2001), this finding sends a message to management in relation to international service quality comparison. Therefore, the type of segments chosen has a significant bearing on the type of information derived.

An important note is also found in the size of the segments. In a representative sample, niche markets may have a low number of respondents. In the case of the special campers, the results must be treated with caution due to the low number of respondents in this group ($n = 15$). However, the technique can still highlight the uniqueness of this group and possibly lead to the design of a separate study designed just for these users.

Secondly we see in the data the limited utility of a 'segmented performance-only program' and the value-added achieved by the measurement of an importance dimension. In Table 5 for example, the 'segmented performance-only program' would lead the analyst to incorrectly conclude that public campsite users are unsatisfied with their accommodation. While the performance rating is low at 2.86, the importance rating is also low at 3.33. Not recognising the dynamic of importance could lead to incorrect interpretation of results and improper resource allocation.

Also, the size of the acceptable gap between importance and performance is one that needs to be established. In the case of camping safari visitors (Table 3), the gap is −1.06, even if the variable appears in the 'low priority' quadrant. The analyst should consider at what the point this gap is significant.

## System of national parks

The example from the overall national study in Table 6, shows how non-parametric statistical analysis when accompanying the importance-performance technique, adds new information to the study. In this case, despite all visitor groups rating the importance of low levels of crowding as above 4.0, it is seen that southern circuit visitors rate this variable as being significantly more important than the other groups – who already rate it as important. Despite performance means being below 4.0 for climbers and northern circuit users (placing them into the 'concentrate here' quadrant), it is likely that had either group rated performance as being slightly above 4.0 (placing them into the 'keep up the good work' quadrant along with the southern circuit users), this difference in performance would still likely be significant. This shows that differences amongst segments can still be statistically significant, despite being situated within the same quadrant.

In the case of Tanzanian tourism, this finding is important, as Southern circuit visitors are a clear market segment that needs to be monitored and managed independently from the other groups. Southern circuit users demand significantly lower levels of crowding and are very satisfied with their experience in southern Tanzanian national parks. The nation, which seeks to position itself as a low-density tourism destination, will need to be careful not to displace this group by developing the southern park use levels to the higher levels of the northern circuit.

## Implications for Future Research

### Utility of the technique

Importance–performance analysis coupled with market segmentation is a basic technique that can provide useful results for the protected area tourism manager. It can act as a baseline diagnostic tool to provide insight into the relationship between satisfaction dynamics and the importance that specific visitor groups assess to various aspects of the service offering. It can also guide resource allocation, as areas of service strength, overkill, low priority, and need for concentration are highlighted in an easily understood matrix. The results can also be used to direct additional research dollars more efficiently, as areas that require increased concentration can be further investigated.

For an agency with limited technical expertise and financial resources, it offers a foundation for exploratory research that can be built upon as resources and expertise become available. Parks generally can identify client groups in an *a priori* manner without large focus group and factor analysis studies. For an agency with resources, techniques such as non-parametric statistical analysis can complement the technique. In addition, both demographic information and expenditure data can be merged with the IPA data to form more complete segment profiles to base further strategic decision-making upon.

The use of the technique, in the context of protected areas management, can go beyond that of traditional marketing studies which seek to elevate service quality and regular use. The technique can also be used to de-market and deliberately displace visitors for the purpose of lowering use. For example, an ecological impact study seeking to lower the amount of visitors who use an ecologically sensitive area, may wish to identify and concentrate on segments that place a high importance on low density – to produce material for a de-marketing strategy to displace visitors who accept high density elsewhere.

### Segmented IPA programme vs other satisfaction programmes in park agencies

A 'segmented IPA programme' is a superior technique to that of a 'homogeneous IPA programme' alone, which can fail to recognise distinct differences in niche markets and ultimately lead to the displacement of these visitors. Visitors to protected areas are often not a homogeneous group, but have distinct preferences and perceptions of quality. In fact, two groups of visitors who use identical facilities within a park, may appear in differing quadrants of the IPA grid. Segments can both be sampled and studied separately, or compared and contrasted within the same sample and study. The technique can also highlight the existence of segments, as a number of experimental subgroups could be separated to check for distinct IPA ratings.

A 'segmented IPA programme' is also a superior approach to a 'segmented performance only programme' which only looks at differences amongst satisfaction ratings, but ignores differences in importance. This can produce the error of assuming that resources should be allocated toward areas with poor service ratings, despite some service areas not being important to the visitor.

The dimension of importance or expectation, can significantly improve the quality of the information with a minimal amount of effort.

## Issues and limitations of the technique

The diagnostic sensitivity of the technique is limited to the quality and utility of visitor segments identified in the sample population. The identity of visitor segments needs to be carefully thought through, particularly in the context of the managerial implications of the data. A given classification of segments may not produce the information necessary to address specific concerns. For example, a park looking at levels of crowdedness may segment visitors into campers and day visitors. However, if the park has two campgrounds – one with a higher density of campsites than the other, important perceptual differences between the two campground user groups may be detected if they are separated, revealing the existence of a third segment.

When conducting segmentation, some segments may have small sample sizes – particularly those that are defined during the analysis portion of the study, or some that constitute a proportionally low percentage of the overall survey population (which in fact occurred with special campers in the Serengeti study). For behavioural segmentation variables, which can be defined before the administration of the survey, this problem can be minimised with compensatory sampling techniques. For others, further study can be conducted on the specific segment. It is important to attain a reasonably large sample size for each segment under study.

The relativity of the gridlines is a potential shortfall of the technique. The placement of the gridlines ultimately determines in which quadrant the variables will appear. For example, with gridlines set at importance and performance ratings of 4.0, a variable with an importance rating of 4.5 and a performance rating of 4.02 will fall into the 'keep up the good work' quadrant. However, the same variable with a performance rating of 3.98 will now fall into the 'concentrate here' quadrant. However, the performance difference between 3.98 and 4.02 may not be sensitive enough to warrant an entirely opposite managerial interpretation. The goals of the protected area will determine the placement of the gridlines.

One option to address this concern would be to conduct statistical tests to determine whether a mean value such as 3.98 was significantly different from the gridline value of 4.0. While a viable option for the statistician, this adds to the complexity of the technique and may not be viable for an agency such as TANAPA with limited social science expertise. At a bare minimum, a 'zone of caution' could be exercised for all I/P values that fall below a certain range (i.e. 0.05) of the gridline value.

The gap between importance and performance ratings is an issue that must be addressed. A variable that lies in the 'low priority' quadrant, with an importance rating of 3.5 and a performance rating of 2.0, still has a service gap of 1.5. Despite the variable being less important than others, the gap should be noted. A maximum gap standard should be developed as another way to flag poor service delivery.

## Conclusion

Importance–performance analysis coupled with market segmentation is a useful exercise for protected area managers to measure service quality. This technique is achievable for agencies lacking expertise and resources such as TANAPA, and provides a simple and visual aid for the diagnosis of tourism service quality in protected areas. It is also a good starting point for agencies with suitable resources and expertise. It can be complemented with other methods such as non-parametric statistical analysis, and segments can be profiled with demographic and economic information to improve the quality of data further.

It is a superior method to that of a non-segmented approach that views the sample as homogenous. Displacement of niche visitors can be avoided and the effects of managerial decisions on different groups understood when visitors are segmented. In addition, this technique is superior to that of a performance-only approach, which can lead to incorrect interpretive assumptions and ultimately a misallocation of funds, since the importance dimension is not measured.

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