Competitive importance-performance analysis of an Australian wildlife park

Ross H. Taplin

School of Accounting, Curtin Business School, Curtin University of Technology, GPO Box U1987, Perth 6845, Australia

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ABSTRACT

Importance-Performance Analysis (IPA) and the related analysis of performance minus importance gaps have proved valuable and popular techniques for the management of tourism destinations as well as products and services more generally. Their simplicity makes them easily interpretable to management. Unfortunately their application is hindered by measurement bias and doubt over the appropriate placement of crosshairs to determine whether performance and importance is high or low. This paper introduces Competitive Importance-Performance Analysis (CIPA) to resolve these issues by applying the scientific principle of a control. CIPA uses benchmarking against competitors to determine cross-hair placement, reduce measurement bias and determine market position. A survey of an Australian wildlife park is used to illustrate how CIPA provides additional insights for management while results from IPA or gap analysis are potentially misleading. CIPA is applicable not only to tourism but also to other areas of management or marketing of a product or service.

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1. Introduction

The use of empirical data from surveys of consumers is important to the effective marketing and management of products and services. Empirical data obtained from consumers can identify attributes that consumers consider important but performance in unsatisfactory. This information can be used for marketing and management, to manage consumer expectations or for quality improvement leading to higher overall satisfaction, reputation and sales. In the context of many tourism or leisure destinations this can include benefits such as enjoying nature as well as cleanliness or other service quality attributes directly controlled by management. Importance-Performance Analysis (IPA) is a technique that has been successfully employed to identify attributes than contribute to low satisfaction by directly measuring, summarising and interpreting the importance and performance of multiple attributes simultaneously.

1.1. Importance-performance analysis (IPA)

Importance-performance analysis was introduced by Martilla and James (1977). It is based on the mean performance and mean importance obtained from surveyed respondents for each of several attribute or characteristics of a service or product. Performance refers to the performance or satisfaction with the attribute and importance to the impact this performance has on the overall experience. Unlike expectations which must be measured prior to the visit importance is measured after the visit when the visitor can make an informed judgement concerning the attributes that were important to their visit. These are typically displayed in a two-dimensional plot with importance on the vertical axis and performance on the horizontal axis (Fig. 1). Crosshairs (vertical and horizontal lines) divide this plot into four quadrants with different conclusions for management. For example, when performance is low and importance is high an attribute is in the “concentrate management here” quadrant and may require management attention to improve performance.

Oh (2001, p. 617) cited the variety of literature using IPA and concluded the main reasons for its wide acceptance included its ease of application and ability to present strategic recommendations together with data. Nevertheless, concerns have also been expressed over the appropriate implementation of IPA.

The placement of crosshairs remains a controversial topic (Oh, 2001). The two popular choices in the literature are the middle of the measurement scale (recommended by Oh, 2001) and using the mean result averaged over all attributes (Ryan & Cressford, 2003). The former has been found to result in most attributes lying in the “keep up the good work” quadrant as respondents tend to give high performance and importance (research may be expected to concentrate on attributes considered important). The latter has the advantage that attributes are compared relative to each other, which is appropriate if management is considering shifting limited resources between attributes. Tongue and Moore (2007) found...
The results of gap analysis.

Crosshairs located at the mean provided closer agreement to the results of gap analysis.

Relationships between performance and importance have been shown to exist and this influences interpretation of IPA. Ryan and Huyton (2002) found positive correlations between the performance and importance assigned to attributes and suggested performance is a function of importance. Sampson and Showalter (1999) found negative correlations between performance and importance and argued importance is a function of performance. In particular, they showed that an intervention by management designed to improve performance on an attribute also influenced importance of the attribute. Matzler, Bailom, Hinterhuber, Renzel, and Pichler (2004) interpret these results as IPA assumes independence between performance and importance but it is unclear why this assumption is necessary to make valid conclusions from IPA. Certainly recommendations for management action from IPA must recognise that interventions to improve performance on an attribute may also influence importance of the attribute. Indeed, such an intervention may also influence reported performance and importance of other attributes, especially when these are interpreted as relative rather than absolute measures.

1.2. Gap analysis

The gap is defined as the mean performance minus the mean importance. Gap analysis typically compares gaps with the benchmark of zero. Positive gaps (performance exceeds importance) are considered satisfactory while negative gaps (where performance is lower than importance) indicate management attention may be required.

Gap analysis can be viewed as a reduction of the two-dimensional IPA in Fig. 1 to a one-dimensional scale. In Fig. 1 this can be achieved by adding a diagonal line from the lower left to the upper right where performance equals importance. Attributes falling to the right of the right of this line have positive gaps and attributes falling to the left of this line have negative gaps. If multiple diagonal lines parallel to the performance equals importance line are added to Fig. 1 then attributes on the same diagonal line have the same gap. When two attributes fall on different lines, the attribute with the higher gap lies on the line to the right. Hence gap analysis retains the information concerning which diagonal line the attribute falls onto but ignores the information concerning where on this line the attribute falls. Although this dimensional reduction must involve some loss of information the assumption of gap analysis is that by retaining the dimension of most interest to management little useful information is lost.

Gap analysis essentially replaces the four rectangular quadrants of IPA with two triangles (negative gaps in the upper left requiring management attention and positive gaps in the lower right). From a management perspective the most important direction is from top left to bottom right because the quadrants “concentrate management here” and “possible overlook” suggest more need for management action that the “keep up the good work” and “low priority for managers” quadrants. This justifies the use of gap analysis instead of quadrant analysis. Nevertheless, interpretations can differ. For example, attributes in the “keep up the good work quadrant” can have both negative gaps (top left of this quadrant) and positive gaps (lower right of this quadrant). Attributes in the top left of the “keep up the good work” are close to the “concentrate management here” quadrant and may require management attention, as summarised correctly by the negative gap.

Gap analysis can be viewed as a type of benchmarking where performance is measured against importance. It correctly implies higher performance is more desirable for attributes with higher importance. Unfortunately this assumes performance and importance can be interpreted on the same scale. This is a controversial assumption since labels for scales are rarely the same. For example, Tongue and Moore (2007) use an importance scale from “not at all important” to “extremely important” but a satisfaction scale from “low” to “high”. For this reason gaps may be more appropriately interpreted as relative rather than absolute measures, which suggests a different benchmark is required. For example, attributes with a gap below the average (taken over all attributes) of the gaps may be interpreted as requiring management attention.

1.3. Benchmarking/controls

In science and business the comparison with a competing entity is standard. In science the competing entity is often referred to as a control. In business this is typically referred to as benchmarking. Performance of a product or service must be superior to competitors rather than just be high because tourist or recreational venues, like medical treatments, must compete for patronage. Providing good service is a problem if competitors are providing excellent service. This is not only important in a competitive sense but also in a measurement sense, since respondents may respond positively due to the nature of the question rather than because of the product or service being evaluated. Conclusions can be drawn after removing measurement bias or placebo effects since any such bias is likely to affect both treatment and control groups similarly. When possible it is preferable to apply the treatment and control to the same patients (within-subject design) to remove subject to subject variation.

The performance of competitors has occasionally been included in IPA (Burns, 1986; Dolinsky, 1991; Dolinsky & Caputo, 1991; Yavas & Shenwell, 2001; Kim & Oh, 2002; Kaczyski & Crompton, 2004). This literature typically investigates restaurants or healthcare rather than tourism or recreational venues. Furthermore, while
performance is compared between the competing venues it assumes the importance of each attribute is the same at the two venues. This assumption is unrealistic, especially in tourism or recreation because a variety of very different venues (with therefore different important attributes) is competing for the patronage of visitors. The case for relative importance rather than absolute importance was summarised in Oh (2001, p. 622) “Evidently, consumer preferences for a product or brand are formed based upon not only a trade-off or comparison among attributes within the focal product, but also a comparison between the same attributes across competing products”. Hence this paper proposes to improve IPA by not only comparing importance between attributes (at the same venue) but also importance between venues (for the same attribute). This comparison also provides information about the market position of the venue as it relates to why visitors may choose to visit this venue rather than a competing venue.

1.4. Aims of this paper

IPA and gap analysis have proved useful techniques for wildlife parks and zoos. Ryan and Saward (2004) performed a detailed IPA of Hamilton Zoo, New Zealand and Akama and Kieti (2003) investigated gaps on 29 attributes for visitors to a wildlife safari at Tsavo West National Park, Kenya. These studies do not explicitly consider the competitive nature of tourism destinations despite the Hamilton Zoo study being originally commissioned to compare Australia and New Zealand.

Australian wildlife is important from environmental, tourism and leisure perspectives. Unlike traditional zoos, wildlife parks provide the opportunity for visitors to have close encounters with animals. This is particularly relevant for Australian wildlife that is typically smaller, more timid and nocturnal compared to wildlife found in other parts of the world. Nevertheless, research of wildlife parks is rare, especially in the Australian context (Mason, 2000; Moscardo, Woods, & Greenwood, 2001).

Leask (2010) proposed a research agenda for the management of visitor attractions and suggested future avenues of focus, including benchmarks, more empirical work and the development of research methodologies (Leask, 2010, p. 163). In particular, there is an increasing recognition that tourism and leisure venues operate in a competitive environment and this must be taken into account not only when making decisions concerning the management of a venue but also the methodology used to collect empirical evidence upon which these decisions are based. For example, performance should be benchmarked based on best practice or the performance by competitors.

This paper proposes enhancements to Importance-performance analysis (IPA) and the corresponding gap (performance minus importance) analysis by introducing Competitive Importance-Performance Analysis (CIPA). This methodological advancement places IPA within the competitive world, eliminates measurement bias and solves a recurring problem in IPA regarding the placement of crosshairs. The methodology is applicable widely to the marketing and management of any product or service in the competitive market. The advantages of CIPA compared to IPA and gap analysis are illustrated using empirical results from a survey of visitors to an Australian wildlife park.

This paper therefore has two aims:

1. To provide methodological advances to IPA and performance-importance gap analysis that is applicable broadly to marketing and management of products and services.
2. To add to the limited literature on zoos and wildlife parks, especially in the Australian context.

2. Methods

2.1. Caversham Wildlife Park

Caversham Wildlife Park is located in the outer suburbs of Perth, Western Australia, approximately 15 km from the central business district. It is privately operated without assistance from government funding. Caversham Wildlife Park specialises in native Australian wildlife where visitors can for example be photographed next to a koala and feed kangaroos. It prides itself on successful breeding programmes and relies on the assistance of volunteers in addition to its paid staff.

The major local competitor for Caversham Wildlife Park is the Perth Zoo. Perth Zoo receives government funding and is 2 km from the central business district of Perth. In addition to native wildlife it has a multitude of exotic animals from around the world, a common feature for a traditional zoo. There is also a variety of other smaller wildlife parks close to Perth that can be viewed as competitors to Caversham Wildlife Park. Some specialise in specific types of wildlife (such as reptiles). Caversham Wildlife Park also competes with venues other than wildlife parks or zoos. For example, there are a multitude of botanical parks, local suburban parks and the river foreshore that provide a venue for outings, especially for leisure activities involving resting or spending time with friends and family.

2.2. Survey methods

Visitors were invited to participate in the self-completed survey as they entered Caversham Wildlife Park and rewarded with confectionary for each survey returned as they left the park. Only one visitor from any group of visitors was sampled to ensure statistical independence of data. The survey was conducted on two weekends during spring 2009.

Importance questions were worded “How important were each of the following factors to the quality of your overall experience at Caversham Wildlife Park today?” and measured on a 7-point Likert scale from “not at all important” to “extremely important”. Performance questions followed with “How good did you find each of the following factors on this visit to Caversham Wildlife Park today?” and measured on a 7-point Likert scale from “very poor” to “very good”.

Prior to these importance and performance questions for Caversham Wildlife Park respondents were asked to name the venue of a similar visit they had undertaken most recently (but not to Caversham Wildlife Park), followed by the same importance and performance questions for this previous visit. This paper takes the view that individual visitors are best placed to decide which venues compete for their patronage. Two popular local venues were provided as examples in the questionnaire: a local botanical park (King’s Park) and zoo (Perth Zoo). The latter is the major local competitor for seeing animals and the former is a non-wildlife park that is a major landmark and local recreational venue. These two examples were provided because pilot testing revealed that without the examples respondents were unsure how similar the previous venue had to be.

The survey included 17 attributes related to facilities (attributes 1–5), information (6, 7), staff (8, 9), price (10, 11), learning (12, 13), relaxing (14, 15) and the environment (16, 17). The attributes are listed in Table 1 in this order but were placed in random order in the questionnaire. We follow the advice in Oh (2001, p. 623) by using high level rather than specific attributes. The 17 attributes were selected after pilot testing of 33 attributes chosen from the literature (including Baker & Crompton, 2000; Burns, Graefe, & Absher, 2003; Chen & Tsai, 2007; Cronin, Brady, Tomas, & Hult,
using a novel placement of crosshairs. Suppose that crosshairs on Fig. 1 were placed at the mean importance and performance of an attribute at the competing venue. Comparing the importance and performance at this venue with these crosshairs is equivalent to comparing differences in importance and performance with zero. Thus CIPA is equivalent to placing crosshairs at means for competing venues however this would make Fig. 1 confusing since the positions of the crosshairs would differ for each attribute. Different positions for crosshairs for different attributes have not been previously suggested, probably because it is difficult to display on a standard IPA plot. Although technically equivalent, this difficulty in presentation is avoided by plotting differences in performance and importance.

Gaps between performance and importance can also be benchmarked against competing venues. Problems with importance and performance being measured on different scales will cancel when we calculate the difference between the two gaps. An attractive feature of this difference in gap analysis is that it results from two alternative derivations. The difference in gaps (this venue minus competing venues) can also be interpreted as the difference in performance (this venue minus competing venues) minus the corresponding difference in importance. Mathematically, the difference in gap values for the two venues is given by

$$G_0 = G_1 - G_2 = (P_1 - I_1) - (P_2 - I_2) = (P_1 - P_2) - (I_1 - I_2) = P_0 - I_0$$

(1)

where, $P_1$ and $I_1$ denote mean performance and importance of a venue and $G_1 = P_1 - I_1$. Hence the difference in gaps ($G_0$) can also be interpreted as the difference between the superiority in performance ($P_0 = P_1 - P_2$) of this venue relative to other venues and the superiority in importance ($I_0 = I_1 - I_2$). Under the usually tenants of gap analysis, a higher performance is required for attributes with higher importance.

Since CIPA is a plot of $(P_1 - P_2)$ against $(I_1 - I_2)$, the difference in gap values for the two venues is the distance the attribute is away from the diagonal equality line. Thus the differences in gaps are read from the CIPA plot in the same way that gaps are read from the IPA plot.

One sample t-tests were used to test whether performance-importance gaps ($G_1 = P_1 - I_1$), performance differences ($P_0 = P_1 - P_2$), importance differences ($I_0 = I_1 - I_2$) and gap differences ($G_0 = G_1 - G_2$) differ significantly from zero. The statistical software R2.6.2 was used for all calculations.

3. Results

3.1. Visitor profile

Of the 300 surveys distributed 64 were not returned or discarded due to missing data leaving 236 questionnaires (response rate = 79%). The majority of respondents (57%) lived in the Perth metropolitan area while 9% lived elsewhere in Western Australia, 2% were from other Australian states and 32% were from other countries. Approximately 20% were 18–25 years old while 50% were 26–40, 24% were 41–60 and 6% were over 60 years old. Most respondents (59%) were female.

The previous visit provided by visitors was classified into parks without wildlife/animals (50%) and other zoo or wildlife parks (49%). Three (1%) of the visitors gave a museum as their previous venue. This high percentage of non-wildlife parks is an indication that visitors consider Caversham Wildlife Park to be in competition with non-wildlife recreational venues.
3.2. IPA results

Table 1 contains for each attribute the sample size (N), mean performance (P), mean importance (I) and mean gap (G) together with the statistical significance (sig) that the gap differs from zero. These mean performance and importance values form the basis of IPA and are plotted in Fig. 2. Crosshairs (horizontal and vertical lines) have been added at the mean importance and performance and a third line at a 45 degree angle when performance equals importance (positive gaps are to the right of this diagonal line). These three lines do not intersect at the same point because average performance exceeds average importance on these attributes. This is generally not recognised in the literature and can help explain why quadrant analysis under IPA can result in different conclusions to gap analysis.

Gap analysis reveals only one significantly positive gap for attribute 14 (having a rest). Gap analysis also reveals seven of the 17 attributes have significantly negative gaps. Most of these attributes are in the “concentrate management here” quadrant of high importance and low performance (attributes 4, 5, 6 and 10) or near this quadrant (attributes 2 and 11). Furthermore, these attributes can be directly influenced by management action as they relate to different aspects of service quality or the entry cost to the Park.

Attribute 16 (seeing wildlife/birds/plants) also has a significantly negative gap. This attribute has the highest importance to visitors and while it also has the highest performance this performance is significantly lower than its importance and hence fails to meet this benchmark. Although attribute 16 is in the “keep up the good work” quadrant, the relatively low performance compared to the importance might suggest some concern to management of Caversham Wildlife Park.

Therefore the results of IPA suggest many areas of concern for management. Many of these are highlighted by both quadrant analysis and gap analysis however the two approaches do not always give consistent conclusions. This can be attributed to the different approaches to benchmarking. Only attributes 12 (educational experiences) and 13 (doing something different) are in the “possible overkill” quadrant, but the positive gaps for these attributes are not statistically significant.

3.3. CIPA results

The mean differences in performance and importance form the basis of CIPA and are displayed in Table 2 and plotted in Fig. 3. Horizontal and vertical crosshairs are placed at zero and the diagonal line indicates differences that are equal. It follows from equation (1) that gaps are higher at Caversham Wildlife Park compared to competing venues for attributes to the right of this diagonal line. Furthermore, unlike IPA these lines must intersect at the same point in CIPA.

The mean performance of Caversham Wildlife Park is only lower than the mean for the competing venues for attributes 5 (cleanliness of venue) and 11 (venue is good for the price paid) however neither of these differences is statistically significant (Table 2). Caversham Wildlife Park has a significantly higher performance than the competing venues for 8 of the 17 attributes. Hence if management of Caversham Wildlife Park benchmark their performance against the performance at competing venues they exceed the benchmark for many attributes and are close to the benchmark for the others.

In line with IPA, however, higher performance for an attribute should be achieved if visitors consider the attribute to be more important. For example, although performance was significantly higher by 0.35 at Caversham Wildlife Park for attribute 13 (doing something different) the importance was significantly higher by 0.31. Thus relative to importance the performance is only higher by 0.04. From equation (1) this comparison of the superiority in performance with the superiority in importance is equivalent to the difference in gaps of 0.04 reported in Table 3, and is not statistically significant (p = 0.659). Thus visitors to Caversham Wildlife Park largely visit to do something different and find that Caversham Wildlife Park achieves this satisfactorily compared to other venues. This is potentially important for the marketing of Caversham Wildlife Park: visitors come here rather than others venues because it is something different to do.

Caversham Wildlife Park has significantly positive differences in gaps for attributes 7 and 8. For attribute 7 (information concerning attractions at the park) performance is superior while importance is similar to competing venues. On this attribute Caversham Wildlife Park has a competitive advantage because management has provided a superior quality of service compared to competing venues. This result differs from the IPA (Fig. 2) where attribute 7 was not unusual, with average importance, slightly low performance and negligible but negative gap. This highlights the importance of comparing results for an attribute with results at competing venues rather than with results of other attributes at the same venue.

Similarly, IPA (Fig. 2) suggested attribute 8 (knowledgeable staff) had slightly above average performance and importance with a non-significant gap of 0.05 (p = 0.463) while CIPA shows that relative to competing venues Caversham Wildlife Park performs well on this attribute. While attribute 8 is more important at Caversham Wildlife Park performance is superior by a larger margin (gap is superior by 0.21, p = 0.022). Performance exceeds the level demanded by the importance of this attribute and hence resources may return a competitive advantage if applied to other attributes. Alternatively, the superiority of Caversham Wildlife Park regarding attributes 7 and 8 may provide a powerful marketing strategy.

Most noteworthy is the absence of attributes in the “concentrate management here” quadrant of Fig. 3 compared to Fig. 2. No attributes have a higher importance but lower performance at Caversham Wildlife Park compared to competing venues. Thus,
Table 2
Competitive importance-performance analysis (CIPA) results for Caversham Wildlife Park compared to all competing venues.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>N</th>
<th>P</th>
<th>sig</th>
<th>I</th>
<th>sig</th>
<th>G</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Places to sit and rest</td>
<td>220</td>
<td>0.06</td>
<td>0.444</td>
<td>0.09</td>
<td>0.334</td>
<td>-0.02</td>
<td>0.825</td>
</tr>
<tr>
<td>2. Availability of toilets</td>
<td>216</td>
<td>0.03</td>
<td>0.782</td>
<td>-0.16</td>
<td>0.029*</td>
<td>0.19</td>
<td>0.096</td>
</tr>
<tr>
<td>3. Quality food and beverage for sale</td>
<td>200</td>
<td>0.20</td>
<td>0.060</td>
<td>0.13</td>
<td>0.272</td>
<td>0.07</td>
<td>0.608</td>
</tr>
<tr>
<td>4. Well maintained facilities</td>
<td>218</td>
<td>0.09</td>
<td>1.000</td>
<td>-0.07</td>
<td>0.362</td>
<td>0.07</td>
<td>0.490</td>
</tr>
<tr>
<td>5. Cleanliness of premises</td>
<td>217</td>
<td>-0.11</td>
<td>0.219</td>
<td>0.00</td>
<td>0.952</td>
<td>-0.11</td>
<td>0.344</td>
</tr>
<tr>
<td>6. Signposts for directions</td>
<td>221</td>
<td>0.11</td>
<td>0.223</td>
<td>0.15</td>
<td>0.066</td>
<td>-0.04</td>
<td>0.713</td>
</tr>
<tr>
<td>throughout the venue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Information concerning</td>
<td>217</td>
<td>0.21</td>
<td>0.018*</td>
<td>-0.02</td>
<td>0.827</td>
<td>0.23</td>
<td>0.035*</td>
</tr>
<tr>
<td>attractions at the venue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Knowledgeable staff</td>
<td>221</td>
<td>0.48</td>
<td>0.000***</td>
<td>0.26</td>
<td>0.001***</td>
<td>0.21</td>
<td>0.022*</td>
</tr>
<tr>
<td>9. Friendliness of staff</td>
<td>209</td>
<td>0.51</td>
<td>0.000***</td>
<td>0.34</td>
<td>0.000***</td>
<td>0.17</td>
<td>0.111</td>
</tr>
<tr>
<td>10. Value for money</td>
<td>221</td>
<td>0.00</td>
<td>0.962</td>
<td>0.00</td>
<td>0.956</td>
<td>-0.01</td>
<td>0.940</td>
</tr>
<tr>
<td>11. Venue is good for the price paid</td>
<td>217</td>
<td>-0.09</td>
<td>0.345</td>
<td>-0.03</td>
<td>0.731</td>
<td>-0.06</td>
<td>0.643</td>
</tr>
<tr>
<td>12. Educational experiences</td>
<td>216</td>
<td>0.38</td>
<td>0.000***</td>
<td>0.27</td>
<td>0.001***</td>
<td>0.11</td>
<td>0.295</td>
</tr>
<tr>
<td>13. Doing something different</td>
<td>219</td>
<td>0.35</td>
<td>0.000***</td>
<td>0.31</td>
<td>0.001***</td>
<td>0.04</td>
<td>0.659</td>
</tr>
<tr>
<td>14. Having a rest</td>
<td>223</td>
<td>0.14</td>
<td>0.147</td>
<td>0.34</td>
<td>0.001***</td>
<td>-0.20</td>
<td>0.094</td>
</tr>
<tr>
<td>15. Spending time with family/friends</td>
<td>217</td>
<td>0.12</td>
<td>0.049*</td>
<td>0.02</td>
<td>0.751</td>
<td>0.10</td>
<td>0.235</td>
</tr>
<tr>
<td>16. Seeing wildlife/birds/plants</td>
<td>216</td>
<td>0.37</td>
<td>0.000***</td>
<td>0.32</td>
<td>0.000***</td>
<td>0.05</td>
<td>0.567</td>
</tr>
<tr>
<td>17. Enjoying nature</td>
<td>226</td>
<td>0.31</td>
<td>0.001***</td>
<td>0.35</td>
<td>0.000***</td>
<td>-0.04</td>
<td>0.684</td>
</tr>
</tbody>
</table>

Sample size (N) and mean differences in performance (P), importance (I) and gap (G) for Caversham Wildlife Park and all competing venues, with statistical significance (sig) of each mean compared to zero. *,” ** and *** denotes p < .05, p < .01 and p < .001 respectively. Values of G do not always equal P – I exactly due to rounding.

while IPA may correctly indicate there are attributes that management should concentrate on improving because performance is low and importance is high, CIPA suggests competing venues suffer from this problem to a larger extent and Caversham Wildlife Park may have a competitive advantage in these areas.

This competitive advantage is illustrated with attribute 4 (well maintained facilities) which is directly controlled by management (a service quality attribute). In IPA, performance is slightly below average (5.57 compared to 5.60) while importance is slightly above average (5.77 compared to 5.70). This results in a statistically significant negative gap of –0.20 (p = 0.005), suggesting a need for management action to improve the maintenance of their facilities. In CIPA, performance is shown to be comparable to competing venues while importance is slightly lower, resulting in a positive but statistically insignificant gap of 0.07 (p = 0.490). Thus while IPA suggests management should consider improving their maintenance of facilities CIPA shows visitors consider competing venues to be at least as poor on this attribute. A similar conclusion is reached for attribute 2 (availability of toilets) where a significant negative gap of –0.29 (p < 0.001) under IPA becomes an almost significant positive gap of 0.19 (p = 0.096) under CIPA.

Conversely, the significantly positive gap of 0.22 (p = 0.025) for attribute 14 (having a rest) under IPA could be a misleading positive result. This gap is 0.20 worse than competing venues and this difference in gaps is almost statistically significant (p = 0.094) under CIPA. Compared to competing venues, this attribute is significantly more important at Caversham Wildlife Park than other venues (p = 0.001) by 0.34 however performance is insignificantly higher by 0.14 (p = 0.147). The high importance placed on this attribute for Caversham Wildlife Park relative to other venues may require further investigation by management. Finally, the correlation between performance and importance is lower under CIPA compared to IPA. The correlations between performance and importance for the attributes range from 0.34 to 0.70 (mean = 0.52). Under CIPA, differences (Caversham Wildlife Park minus previous venue) of performance and importance exhibit substantially lower correlations ranging from 0.09 to 0.41 (mean = 0.23). Thus the relationship between performance and importance can largely be explained by the different scales different visitors use (visitors who give high values for importance tend to give high values for performance). Since visitors tend to do so consistently for both venues this relationship is reduced by taking differences under CIPA, reinforcing the need to benchmark performance and importance against previous venues.

3.4. Benchmarking against venues with wildlife

Although Caversham Wildlife Park may compete with a variety of different types of venues a comparison with other venues primarily providing wildlife is also of interest. Table 3 and Fig. 4 contain the results of a CIPA when competing venues were another wildlife park or zoo. This analysis contains smaller sample sizes since only about half the visitors gave a wildlife park or zoo as their previous venue. Table 3 shows only attributes 7 and 8 have gap differences that are statistically significant. The same result was
obtained when gaps were compared with all competing venues (Table 2). Since the results in Tables 2 and 3 are similar for most attributes our discussion below concentrates on differences between these sets of results.

A comparison of Fig. 3 with Fig. 2 (and Fig. 1) suggests not only an absence of attributes in the “concentrate management here” quadrant but also an absence of attributes nearby this quadrant. For example, attribute 10 (value for money) that was clearly in this quadrant but also an absence of attributes nearby this quadrant. For example, differences in measurement scales for performance and importance may lead to negative gaps (importance exceeding performance) this can not only bias the quadrant an attribute appears in under IPA but also the observed gap between performance and importance. For example, differences in measurement scales for performance and importance may lead to negative gaps (importance exceeding performance), implying zero is not a suitable benchmark for gaps. This is an important reversal of conclusions that deserves further examination. IPA may suggest lowering entry prices to bring performance more in line with importance however CIPA suggests raising entry prices may be possible without Caversham Wildlife Park becoming uncompetitive with other wildlife parks and zoos. It appears most wildlife parks suffer from inferior performance (relative to importance) on this attribute. CIPA applies an appropriate benchmark based on competing venues and suggests Caversham Wildlife Park may be superior to other wildlife parks on this attribute.

4. Discussion

IPA is known to be problematic regarding the placement of crosshairs to benchmark whether performance and importance values are high or low (Oh, 2001). Options include using the midpoint of the measurement scale, using the mean of the attributes, or using importance to benchmark performance (gap analysis). Gaps can be benchmarked against zero (absolute measure) or the mean gaps of all the attributes (relative measure). None of these are entirely satisfactory.

This paper introduces CIPA, where performance, importance and gaps (performance minus importance) are benchmarked against the corresponding values at competing venues. The competing venues serve the role of a scientific control to reduce measurement bias. For example, visitors may respond to performance and importance questions concerning money differently to other attributes due to norms associated with valuing money. Since this effect could differ for performance and importance this can not only bias the quadrant an attribute appears in under IPA but also the observed gap between performance and importance. For example, differences in measurement scales for performance and importance may lead to negative gaps (importance exceeding performance), implying zero is not a suitable benchmark for gaps. As this measurement bias affects gaps for both venues the measurement bias cancels for differences in gaps making zero a suitable benchmark under CIPA.

Research into recreational venues considers benefits attained by visitors (eg. Joppe et al., 2001; Tongue & Moore, 2007). Since many of these benefits (such as having a rest) can be obtained from many different types of venues it is important to examine how these

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**Table 3**

Competitive importance-performance analysis (CIPA) results for Caversham Wildlife Park compared to competing wildlife parks and zoos only.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>N</th>
<th>P</th>
<th>sig</th>
<th>I</th>
<th>sig</th>
<th>G</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Places to sit and rest</td>
<td>108</td>
<td>0.29</td>
<td>0.011*</td>
<td>0.24</td>
<td>0.043*</td>
<td>0.05</td>
<td>0.737</td>
</tr>
<tr>
<td>Availability of toilets</td>
<td>105</td>
<td>−0.16</td>
<td>0.280</td>
<td>−0.19</td>
<td>0.065</td>
<td>0.03</td>
<td>0.865</td>
</tr>
<tr>
<td>Quality food and beverage for sale</td>
<td>97</td>
<td>0.48</td>
<td>0.003**</td>
<td>0.20</td>
<td>0.252</td>
<td>0.29</td>
<td>0.191</td>
</tr>
<tr>
<td>Well maintained facilities</td>
<td>109</td>
<td>0.14</td>
<td>0.520</td>
<td>0.08</td>
<td>0.375</td>
<td>0.05</td>
<td>0.751</td>
</tr>
<tr>
<td>Cleanliness of premises</td>
<td>106</td>
<td>−0.08</td>
<td>0.323</td>
<td>−0.10</td>
<td>0.357</td>
<td>0.03</td>
<td>0.850</td>
</tr>
<tr>
<td>Signposts for directions</td>
<td>107</td>
<td>0.10</td>
<td>0.440</td>
<td>0.21</td>
<td>0.082</td>
<td>−0.10</td>
<td>0.523</td>
</tr>
<tr>
<td>Information concerning attractions at the venue throughout the venue</td>
<td>108</td>
<td>0.17</td>
<td>0.158</td>
<td>−0.16</td>
<td>0.179</td>
<td>0.32</td>
<td>0.032*</td>
</tr>
<tr>
<td>Knowledgeable staff</td>
<td>109</td>
<td>0.51</td>
<td>0.000***</td>
<td>0.22</td>
<td>0.013*</td>
<td>0.29</td>
<td>0.011*</td>
</tr>
<tr>
<td>Friendliness of staff</td>
<td>104</td>
<td>0.37</td>
<td>0.004**</td>
<td>0.15</td>
<td>0.088</td>
<td>0.21</td>
<td>0.167</td>
</tr>
<tr>
<td>Value for money</td>
<td>110</td>
<td>0.15</td>
<td>0.285</td>
<td>−0.19</td>
<td>0.113</td>
<td>0.34</td>
<td>0.056</td>
</tr>
<tr>
<td>Venue is good for the price paid</td>
<td>110</td>
<td>0.07</td>
<td>0.572</td>
<td>−0.04</td>
<td>0.796</td>
<td>0.11</td>
<td>0.491</td>
</tr>
<tr>
<td>Educational experiences</td>
<td>107</td>
<td>0.35</td>
<td>0.001***</td>
<td>0.27</td>
<td>0.016*</td>
<td>0.07</td>
<td>0.611</td>
</tr>
<tr>
<td>Doing something different</td>
<td>107</td>
<td>0.50</td>
<td>0.000***</td>
<td>0.32</td>
<td>0.008**</td>
<td>0.18</td>
<td>0.177</td>
</tr>
<tr>
<td>Having a rest</td>
<td>109</td>
<td>0.41</td>
<td>0.004**</td>
<td>0.47</td>
<td>0.003**</td>
<td>−0.06</td>
<td>0.751</td>
</tr>
<tr>
<td>Spending time with family/friends</td>
<td>107</td>
<td>0.13</td>
<td>0.150</td>
<td>0.07</td>
<td>0.569</td>
<td>0.07</td>
<td>0.597</td>
</tr>
<tr>
<td>Seeing wildlife/birds/plants</td>
<td>106</td>
<td>0.27</td>
<td>0.009**</td>
<td>0.11</td>
<td>0.186</td>
<td>0.16</td>
<td>0.184</td>
</tr>
<tr>
<td>Enjoying nature</td>
<td>111</td>
<td>0.48</td>
<td>0.000***</td>
<td>0.37</td>
<td>0.001**</td>
<td>0.11</td>
<td>0.482</td>
</tr>
</tbody>
</table>

Sample size (N) and mean differences in performance (P), importance (I) and gap (G) for Caversham Wildlife Park and the competing wildlife park/zoos venues only, with statistical significance (sig) of each mean compared to zero. *, ** and *** denotes p < .05, p < .01 and p < .001 respectively. Values of G do not always equal P − I exactly due to rounding.
benefits are obtained relative to competing venues. While IPA may suggest a positive result if visitors report that they have attained a benefit from their visit this might more realistically be interpreted as a negative if the benefit is attained to a higher extent at other competing venues.

We do not suggest that standard IPA has no value but that CIPA should be performed in addition to IPA to obtain a more thorough understanding of performance taking into account the competitive nature of our society and to understand the market position of the venue relative to competitors. Tourists and locals must make choices concerning where to go and what to do with their valuable time. To attract this patronage, venues must provide superior performance compared to the competition rather than just good performance.

4.1. Methodological variations to CIPA

Many variations to the implementation of the principles of CIPA are possible that may be relevant in particular circumstances. The motivation for the specific implementation presented in this paper and alternatives that may be appropriate in other circumstances are considered here to assist future application of CIPA.

The question of which venues are competing was answered in this paper by assuming visitors are best placed to determine which venues are competing: if a visitor believes two venues are in competition for their patronage then they are defined to be competing venues. This approach has several advantages. This information is useful for marketing and management and researchers and managers may make incorrect assumptions about which venues are in competition. Furthermore, as demonstrated in Section 3.4, CIPA can be applied to researcher defined competing venues by selecting subsets of visitor surveys. Nevertheless, specifying a particular competing venue (eg. Perth Zoo) or type of venue (eg. wildlife parks) in the questionnaire will increase sample size and provide more precise conclusions regarding this comparison. Such specific comparisons may be more relevant for non-tourism products or services where there is direct competition with a single supplier.

The analysis of subsets of questionnaires can be applied beyond the nature of the previous venues to investigate different trends for different segments of visitors or investigate potential methodological bias. These subsets may be based on demographics of visitors such as international versus local visitors, how often visitors attend this venue or the time between this visit and the visit to the previous venue.

Visitors could be surveyed at competing venues or a neutral venue instead, or as well as, at the venue of interest. This may reduce any bias due to comparing current visitation with past visitation. This approach was not adopted in this study for several reasons. First, this requires the researcher to define the competing venues which may be subjective and realistically involve numerous venues. Second, it is more difficult to administer surveys at numerous locations. Third, comparisons between performance and importance at different venues must be based on different respondents which increases statistical estimation error. The approach adopted in this paper uses the same respondents for both venues because this within-subject design provides more accurate estimates by removing variation between respondents when comparing competing venues. Furthermore, applying CIPA to subsets of visitors at Caversham Wildlife Park based on how long ago their previous visit occurred produced similar conclusions irrespective of time since past visitation.

CIPA requires a longer questionnaire as performance and importance questions are also required for competing venues. It is contended here that interpretation of IPA results without knowing the corresponding results for competing venues is problematic and therefore the additional questions are justified. In medical research this statement is taken as a self-evident truth as evidence of a new treatment is considered inadequate if resources are not allocated to simultaneously investigating a control treatment. Further research could investigate the possibility of replacing these two questions with a single question measuring the difference between the two venues directly.

4.2. Management of Caversham Wildlife Park

The example used to illustrate CIPA in this paper has implications for the management of Caversham Wildlife Park that are not revealed by IPA. These are briefly discussed in respect to the venues Caversham Wildlife Park competes with, the attributes of importance to visitors of Caversham Wildlife Park and the performance of Caversham Wildlife Park on these attributes.

Caversham Wildlife Park not only competes with other wildlife parks and zoos but also with other venues such as local parks. Many visitors consider their visit to Caversham Wildlife Park to be similar to previous visits to local (non-wildlife) parks, presumably because the purpose of their visit is not only to see wildlife but also to spend time with family and friends, having a rest and doing something different. Understanding how Caversham Wildlife Park performs on these attributes, especially in comparison to other competing venues that include but are not limited to wildlife parks, is important to future patronage. These comparisons are possible under CIPA but not under IPA.

IPA reveals the most important attributes to visitors of Caversham Wildlife Park are attributes 16 (seeing wildlife/birds/plants), 15 (spending time with family/friends) and 17 (enjoying nature). The first might be expected of a wildlife park and the second is consistent with past literature for zoos (eg. Ryan & Saward, 2004; Sickler & Fraser, 2009). CIPA reveals only the third of these is significantly more important at Caversham Wildlife Park compared to other wildlife parks. Thus the natural experience at Caversham Wildlife Park differentiates it from other competing wildlife parks or zoos. Other attributes that are significantly more important at Caversham Wildlife Park also include attributes 14 (having a rest), 1 (places to sit and rest), 12 (educational experiences), 13 (doing something different) and 8 (knowledgeable staff). These relate to the two themes of resting and new experiences. While IPA does not necessarily highlight these as important to Caversham Wildlife Park, CIPA highlights how these differentiate Caversham Wildlife Park from competing wildlife parks. As suggested by Oh (2001), relative importance provides valuable insights into the market position of Caversham Wildlife Park above those provided by the absolute importance of IPA.

IPA and performance-importance gaps suggest the performance of Caversham Wildlife Park is poor for many attributes however CIPA suggests that the competitors to Caversham Wildlife Park tend to perform even worse. For example, IPA suggests Caversham Wildlife Park performs poorly on the attribute “value for money” with the third lowest performance of all attributes and relatively high importance. This may suggest the need for management to address this issue, possibly by reducing entry costs. CIPA, however, suggests Caversham Wildlife Park performs favourably relative to its competitors, especially other wildlife parks and zoos. Rather than reducing entry costs, CIPA suggests entry fees could be used in marketing to exploit a competitive advantage or even raised. Thus conclusions based on IPA without CIPA could be misleading to management.

Although IPA suggests Caversham Wildlife Park has superior performance relative to importance for the attribute “having a rest”, CIPA suggests Caversham Wildlife Park may be inferior to
competing venues, especially local parks. This is due to a relatively high importance of this attribute at Caversham Wildlife Park compared to other venues. Caversham Wildlife Park has superior performance for this attribute compared to other wildlife parks but inferior performance compared to non-wildlife parks. The extent to which Caversham Wildlife Park competes against these two different types of venues for patronage by visitors may deserve further consideration.

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References


