

Importance-performance analysis to inform visitor management at marine wildlife tourism destinations

Greg D. Simpson, Jessica Patroni, Albert C.K. Teo, Jennifer K.L. Chan and David Newsome

Abstract

Purpose – *The purpose of this paper is to postulate that the technique of Importance-Performance Analysis (IPA) is currently underutilised in visitor management studies reported in the peer-reviewed marine wildlife tourism (MWT) research literature. Further, this paper provides insight into how IPA could inform future research and management of tourism experiences at marine wildlife destinations.*

Design/methodology/approach – *This paper synthesises learning gained from the natural area tourism and recreation literature that report the application of IPA in MWT and insights from a recent study at the Dolphin Discovery Centre in Bunbury, Western Australia.*

Findings – *Although currently underutilized in MWT research, IPA is a relatively straightforward, easy to interpret, and, if correctly applied, a powerful tool that managers and researchers can employ to investigate and enhance visitor satisfaction in the short-term and for longer-term sustainability of the industry through visitor-informed tourism management.*

Originality/value – *Having identified the opportunity to enhance visitor experiences, site management and target species welfare through increased IPA research, this review provides a plain language introduction to the application of IPA and direct access to comprehensible academic discourses and exemplars for the technique. Moreover, in light of increasing tourism demand, IPA can assist in determining management options for the future.*

Keywords *IPA, Importance-Performance Analysis, Dolphin tourism, Marine wildlife tourism, Visitor experience, Visitor management*

Paper type *Research paper*

(Information about the authors can be found at the end of this article.)

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1. Introduction

While the ecological impacts of marine wildlife tourism (MWT) are highly researched (Orsini *et al.*, 2006; Bearzi, 2017; Bessa *et al.*, 2017; Senigaglia *et al.*, 2016; Patroni *et al.*, 2019), there has been much less research into the human dimensions of such tourism, especially regarding visitor satisfaction with MWT experiences (Patroni, Simpson and Newsome, 2018; Lück and Porter, 2019; Patroni *et al.*, 2019). Hereafter in this review, the term visitor describes a tourist or local resident who interacts with marine wildlife in an experience that is delivered and controlled by an operator who is (generally) licensed, regulated and/or permitted by a government or industry body to deliver marine-based wildlife tourism experiences. In this review, the term wildlife tourism means an authentic ecotourism experience that involves some form of interaction with or viewing of free-roaming wild animals in their natural habitat (Newsome *et al.*, 2005; Patroni, 2018). Visitor experiences are a complex combination of factors, which shape the feelings and attitude of the participants towards their marine wildlife interaction(s). Visitor experiences are an important component that influences the level of visitor satisfaction (Pastorelli, 2008; Senevirathna and Perera,

2013; Weiler and Black, 2014; Xin and Chan, 2014; Sumanapala *et al.*, 2015, 2017; Lück and Porter, 2019). Clearly, satisfaction is the result of quality experiences, with visitor perceptions of quality attributed to the tangible and intangible elements of the place of visit (Chan, 2005; Simpson and Newsome, 2017; Parker and Simpson, 2018a; Patroni, Day, Lee, Chan, Kerr, Newsome and Simpson, 2018; Simpson and Parker, 2018a). Hence, understanding wildlife tourism experiences is indeed a complex issue that relates to the perception, emotion and subjective experiences provided by the wildlife tourism operation(s).

The importance of visitor satisfaction for the ecotourism industry, within which wildlife tourism is a niche market segment, is summarised by Newsome *et al.* (2013, p. 23) who wrote “Satisfaction of visitors with the ecotourism experience is essential to the long-term viability of the ecotourism industry [...] and satisfaction should be second only to the conservation and protection of the resources on which tourism is based.” Visitor satisfaction is a measure of how well the attributes of a product or service (i.e. an ecotourism experience) meet the expectations of visitors (Smolčić Jurdana and Soldić Frleta, 2011; Soldić Frleta, 2014; Sánchez-Rebull *et al.*, 2018). Visitors who are satisfied with their wildlife tourism experience are more likely to re-visit or recommend the experience to family or friends through word of mouth and, evermore commonly, through online platforms such as Facebook, Instagram and TripAdvisor (Gier *et al.*, 2017; Smolčić Jurdana *et al.*, 2017; Prakash *et al.*, 2019; Patroni *et al.*, 2019). Satisfied visitors are essential for the future viability of an ecotourism operation/experience, because the income from tourists is vital for funding the operation, and having satisfied visitors can make these experiences more ecologically, economically and socially sustainable (Wilson and Tisdell, 2003; Schleimer *et al.*, 2015; Patroni, Simpson and Newsome, 2018; Patroni *et al.*, 2019).

The Importance-Performance Analysis (IPA) technique, first described by Martilla and James (1977), has been widely used in tourism research as a measure of visitor satisfaction within both international tourism studies (e.g. Tonge and Moore, 2007; Smolčić Jurdana and Soldić Frleta, 2012a; Sörensson and Von Friedrichs, 2013; Boley *et al.*, 2017; Newsome *et al.*, 2019) and ecotourism recreation research based in Western Australia (e.g. Taplin, 2012; McGuinness *et al.*, 2017; Parker and Simpson, 2018b; Simpson and Parker, 2018b). Inherent in the name of the technique, IPA compares the importance visitors place on the attributes of a product or service (i.e. the wildlife tourism experience) with visitor perceptions about the performance of those attributes with respect to how “good” those attributes are at meeting visitor expectations regarding their wildlife tourism experience (Oh, 2001; Taplin, 2012, pp. 1-2; Moore and Taplin, 2014). Attributes of an MWT experience are aspects such as: numbers of and/or proximity to target species; knowledge of staff, guides and volunteers; educational content of the experience; quality of the facilities and infrastructure; and increasingly perceptions of overcrowding (Bentz *et al.*, 2016; Patroni, 2018; Soldić Frleta, 2014, 2018).

Over the past 20 years, and especially more recently, there has been growing concern regarding the welfare of species targeted for tourism (e.g. Johnson and Lavigne, 1999; Semeniuk *et al.*, 2009; Bentz *et al.*, 2016; Senigaglia *et al.*, 2016; Patroni *et al.*, 2019; Simpson *et al.*, 2019; Walker *et al.*, 2019). Moreover, heavy tourism visitation (Plates 1 and 2), now frequently termed over-tourism, has placed additional pressures on nature-based tourism attractions, posing a risk to sustainability (Bentz *et al.*, 2016; Leung *et al.*, 2018; Capocchi *et al.*, 2019). This has increased pressure on managers and the ecotourism industry to respond, and there are now strongly researched guidelines in regards to tourism and visitor management in regard to wildlife tourism situations (e.g. Leung *et al.*, 2018). However, numerous opportunities remain to consolidate this research base and a vital aspect of the research effort concerned with visitor experiences during crowded and congested conditions lies in IPA (e.g. Newsome *et al.*, 2019). The IPA methodology can provide managers and researchers with insightful information on ways to gauge visitor satisfaction and uncovers attributes of a MWT operation that may be of concern in a simple visual way that is easy to

Plate 1 Tourists lining up (sometimes as many as 200) at the Monkey Mia Dolphin Interaction Zone at Shark Bay, Western Australia



Notes: The site has seen an increase in tourism over the years leading to increased visitor accommodation and resort development. Visitation by cruise ships in the future has the potential to further increase congestion and impact on visitor experience

understand (Taplin, 2012). This is important for future monitoring and research targeted to reduce the impacts of MWT through best practice management while keeping visitor satisfaction high.

Informed by the recent dolphin tourism research by Patroni, Day, Lee, Chan, Kerr, Newsome and Simpson (2018); Patroni *et al.* (2019) and the systematic literature review of Patroni, Simpson and Newsome (2018), this general review highlights how the application of IPA can inform managers, operators and researchers regarding visitor satisfaction with the attributes of their MWT experience(s) and attributes that may require management action to ensure the future viability of the operation in a global ecotourism market that is becoming increasingly competitive. Further, the summary of IPA provided in this paper can benefit tourism students during their studies and as emerging practitioners when they transition from study to professional careers in tourism.

2. IPA in MWT research

Research that investigates visitor opinions and satisfaction with MWT operations often employs questionnaires as the method of obtaining information from visitors (e.g. Mayes *et al.*, 2004; Orsini and Newsome, 2005; Draheim *et al.*, 2010; Filby *et al.*, 2015; Lück and Porter, 2019; Simpson *et al.*, 2016; Bach and Burton, 2017; McIntosh and Wright, 2017; Sitar *et al.*, 2017). However, to the best of our knowledge, only a few English language articles have applied IPA to researching MWT experiences (Patroni, 2018; Patroni, Simpson and Newsome, 2018).



Notes: During the peak season, there is heavy congestion and crowding, along with many boats manoeuvring close to the shoreline to unload and pick up passengers. Some coral islands have been heavily degraded by over-tourism and this has prompted the government to close some islands to tourism and set daily arrival limits on island settings where there is a risk of further environmental degradation

Three studies on cetacean and Whale Shark tourism that utilised the IPA technique were able to identify key areas where management needed to be improved. [Ziegler et al. \(2012\)](#) used IPA to identify that crowding on a boat tour was a major issue, while [Bentz et al. \(2016\)](#) determined management needed to focus on providing more educational information, helping to resolve misleading advertising and reducing both crowding and the cost of tours. The study of [Bentz et al. \(2016\)](#) led to the realisation that uncontrolled growth of the Whale Shark tourism industry was a significant issue that required attention and action from the authorities and operators to ensure visitor satisfaction and sustainability of the experience. [Lück and Porter \(2019\)](#) used IPA, to gauge visitor experiences at a swim-with dolphin tour operation at Kaikoura, New Zealand. Concluding that tourist satisfaction is a multi-faceted concept, [Lück and Porter \(2019\)](#) went on to posit that tour operators need to be aware of tourist interests, preferences and alignment to delivery and management of the MWT experience. The IPA revealed that participants highly valued a non-degraded marine environment and the viewing of dolphins. While most expectations were met, their IPA revealed that visitors wanted stronger interpretation and more information about threats to dolphins and marine systems. An important recommendation arising from the study was that visitors desired information about how tour operators can engage in marine wildlife conservation.

[Filby et al. \(2015\)](#) used a technique similar to IPA by administering questionnaires before and after dolphin swim experiences in order to compare expectations with the actual experience, which generated management suggestions based on the expectations and

experience of tourists. Ranking suggestions from visitors allow management to understand what visitors find most important, which in some cases is not what management expected. For example, close proximity to dolphins was amongst the least important aspects in the study of [Filby et al. \(2015\)](#) and even without close proximity visitors were satisfied with their experience. This can allow for higher compliance with codes of conduct as a result of operators having a better understanding of visitor satisfaction and what is actually important to optimise the wildlife tourism experience.

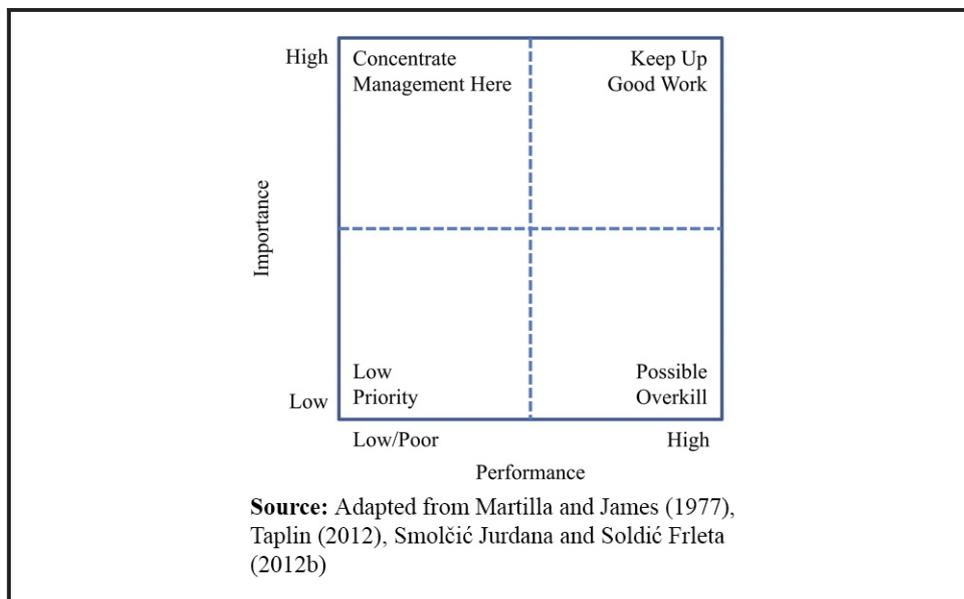
Similarly, recent research by [Patroni \(2018\)](#) found that overall the beach-based dolphin interaction provided at the Dolphin Discovery Centre (DDC) was a high-quality MWT experience with all attributes located high in the Keep Up Good Work quadrant. The application of two enhanced approaches to the IPA (see next section) revealed that management consideration of several attributes could further enhance the tourism experience provided by the DDC. For example, the IPA revealed that the amenities of the DDC facilities were below visitor expectations. Visitors also expressed a desire to be more informed about the wild dolphin-focused conservation and research initiatives of the DDC and a local university research partner. In addition to those two issues, management of the beach-based dolphin interaction, knowledge of the staff and volunteers, and value for money were aspects of the operation that management could review to better meet visitor expectations and increase satisfaction among future visitors.

3. Applying IPA for best practice MWT management

3.1 Background to IPA

An IPA is typically displayed as a two-dimensional plot with the importance of the attributes ranked on the vertical axis and the perceived performance of the attributes plotted on the horizontal axis of the IPA matrix ([Figure 1](#)). In its most basic form, an IPA is completed by using that matrix to plot the mean of the importance ratings for each attribute against the mean of its performance ratings (see Section 4.1 for notes on a possible exception to plotting the mean values). The original IPA of [Martilla and James \(1977\)](#) utilises a Scaled-Centred IPA (SC-IPA) matrix with four quadrants with different requirements for

Figure 1 Importance-Performance matrix



management actions. The crosshairs that delineate the quadrants are located at the neutral midpoint of the Likert scales for importance and performance. The matrix highlights those attributes that are working well and should be maintained (Keep Up Good Work), attributes that may require management action/attention (Concentrate Management Here) and attributes that fall into the Low Priority or Possible Overkill quadrants and therefore require less management focus (Martilla and James, 1977; Taplin, 2012; Patroni, 2018). On the contrary, an appropriate focus on attributes situated in the Possible Overkill quadrant that are being overserved may reveal scarce resources that can be reallocated to correct the underperformance of other attributes (Parker, 2017; Parker and Simpson, 2018b). Accordingly, IPA provides managers with a statistically simple indication of what attributes of their operation require more attention, less attention and those that should be maintained at the current level of resourcing and performance (Oh, 2001; Smolčić Jurdana and Soldić Frleta, 2012b; Tonge *et al.*, 2011; Taplin, 2012; Moore and Taplin, 2014).

A Data-Centred IPA (DC-IPA), which has the crosshairs positioned at the grand means of the importance and performance rankings for the attributes (Moore and Taplin, 2014, Patroni, 2018), is a more stringent application of the original IPA proposed by Martilla and James (1977). This enhanced IPA can be used by high-performing MWT operations to maintain or enhance their performance in a competitive market segment by identifying those attributes that are performing below average with respect to visitor expectations or those attributes that are being overserved, which may allow scarce resources to be better allocated (Azzopardi and Nash, 2013; Moore and Taplin, 2014; Parker and Simpson, 2018b).

Taplin (2012), Moore and Taplin (2014) and others such as Oh (2001) demonstrate and report another enhancement of the original IPA technique called Gap Analysis IPA (GA-IPA). The GA-IPA still not only uses the two-dimensional plot of the importance and performance of attributes for a MWT experience, but also quantitatively assesses the mean difference (Gap) between the performance and importance of each attribute ($\text{Gap} = (\sum(\text{Performance} - \text{Importance}))/n$). The GA-IPA enhances the original quadrant analysis of Martilla and James (1977) by also providing a one-dimensional quantitative statistical analysis (e.g. one sample *t*-tests to identify non-zero gaps) that is simple to perform and report (Taplin, 2012). Positive gaps, where the performance of the attribute exceeds its importance for and to visitors, are considered satisfactory, although as previously mentioned consideration could be given to reallocating scarce resources from those attributes to reduce over servicing (Taplin, 2012; Parker *et al.*, 2018; Soldić Frleta, 2018). In contrast, a significant negative gap indicates that management action may be required, as the performance of that attribute is lower than its importance for visitors to the MWT experience, which indicates that visitor expectations are not being met (Taplin, 2012; Moore and Taplin, 2014; Parker and Simpson, 2018b). The GA-IPA provides a form of benchmarking. Performance is measured against importance and appropriately implies higher performance is more desirable for attributes with higher importance (Taplin, 2012). While of increasing complexity to calculate, Taplin (2012) and Moore and Taplin (2014) demonstrate further development of the enhanced GA-IPA that allows for comparison of the same attributes between two or many wildlife tourism experiences to provide a numeric analysis of the competition between tourism operations in the context of best practice management and enhancing the satisfaction of future visitors.

3.2 Guidelines for conducting IPA

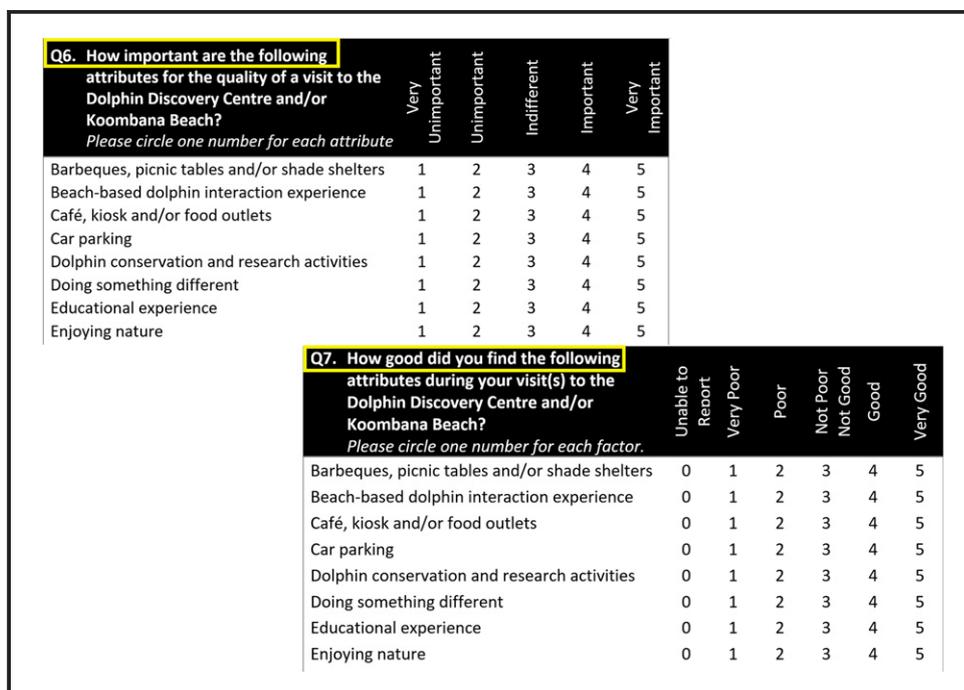
The starting point for a successful IPA is a good questionnaire design. At its simplest, the methods of questionnaire design and validation are as follows. Review published literature to identify key attributes of MWT experiences under investigation in terms of both visitor satisfaction and animal welfare (e.g. Bentz *et al.*, 2016; Parker and Simpson, 2018b; Simpson and Parker 2018b; Lück and Porter, 2019). Consult a panel of practitioners,

researchers and industry partners familiar with questionnaire design and/or the relevant MWT experience to review the draft questionnaire and customise the attributes included in the survey (e.g. Sarantakos, 1998; Tsang *et al.*, 2017). It is then advisable to conduct a pilot study to field test the questionnaire with, ideally, at least 30–50 participants (Tsang *et al.*, 2017). Those three steps provide a qualitative face validation of the questionnaire. As reported in Section 4, larger sample sizes of 300–400 should be considered for more detailed or sophisticated questionnaires or when the questionnaire is to be quantitatively validated.

The data collected in an IPA survey can be subject to a wide range of statistical analyses (Oh, 2001). When designing the survey questionnaire, consideration should therefore be given to what research questions may be of interest in both the short and longer term. If the data collected in the IPA survey are to be utilised in more complex statistical analyses, then consideration should be given to quantitatively validating the questionnaire using data from a pilot study. Conducting factor analyses, such as principal component analysis and checking the internal consistency of the questions, provides additional validation to the questionnaire design. While complex validations may not be essential for the three forms of IPA described in the preceding section, they should be considered as best practice for questionnaire development.

In terms of asking the IPA question, Taplin's (2012) approach of asking “How important is Attribute X to you?” and “How good is Attribute X performing?” was found to work well in the Patroni (2018) survey of MWT visitors (Figure 2). If there is the possibility that different groups of visitors may hold differing views regarding the importance and/or performance of some attributes, then questions that collect relevant demographic data should also be included in the questionnaire. The collected demographic data should facilitate the investigation of any differences in the responses among subgroups of visitors (Simpson *et al.*, 2016; Patroni, 2018). Representativeness and sample size requirements for the

Figure 2 Exemplar importance and performance IPA questions from the survey of Patroni (2018) that informed this general review



surveyed population are considered in [Section 4](#) regarding assumptions of the IPA technique.

4. Assumptions of IPA

4.1 *Picking the right matrix and scale*

Despite the relative simplicity of the IPA approach, the technique can become problematic where the selection of attributes is not sufficiently robust, where the survey method and/or questionnaire are poorly designed and where the underlying assumptions of IPA are not considered ([Oh, 2001](#); [Azzopardi and Nash, 2013](#); [Moore and Taplin, 2014](#)). For example, one of the main controversies with IPA includes the question of where to place the crosshairs for a SC-IPA or DC-IPA matrix. The cross hairs are commonly placed either at the mid (neutral) point of the scale for SC-IPA or at the grand means for importance and performance to produce a DC-IPA, which results in a different allocation of the attributes into the four quadrants ([Oh, 2001](#); [Ryan and Cessford, 2003](#)). As highlighted in Section 3.1, which scale is utilised will, in a large part, be determined by the overall level of visitor satisfaction with the MWT operation and the competitiveness of the market niche.

A second and somewhat related assumption for the correct application of the IPA technique is that the scales for performance and importance are the same with the same ordinal span or intensity across the categories, which provides opportunity for a linear relationship to exist between performance and importance ([Babbie, 1992](#); [Taplin, 2012](#)). Following on from the requirement for the scales to be the same for importance and performance is the requirement of Likert scale design that the midpoint of each scale is a neutral position between a negative/poor statement and a positive/good statement about importance or performance of an attribute ([Babbie, 1992](#); [Albaum, 1997](#); [Sarantakos, 1998](#)). While it is acceptable for the neutral midpoint to be implicit in a Forced Choice Likert scale that has an even number of categories to choose from, many authors have recommended an odd number of categories with the neutral option explicitly stated ([Babbie, 1992](#); [Albaum, 1997](#); [Sarantakos, 1998](#)). An IPA based on the [Taplin's \(2012\)](#) IPA questions with a five-point Likert scale is likely to have the following ranges for importance and performance:

- Very important, important, indifferent, unimportant, and very unimportant.
- Very good, good, not good/not poor, poor, very poor, and unable to report.

4.2 *Linear relationships, correlation and normality*

As noted by [Oh \(2001\)](#), plotting the mean importance and performance ratings against each other on a two-dimensional matrix implies a linear relationship exists between those factors for each attribute. [Oh \(2001\)](#) goes on to highlight that this is generally the case and was the intention of [Martilla and James \(1977\)](#) when they developed the method. Visitor responses for each attribute can, and should, be checked by performing a simple check of the (Pearson) correlation between the importance and performance ratings using any readily available and simple to use statistical package or spreadsheet application. That correlation test will return a positive or negative (–) value of between 0 and 1. General guidance for interpreting the outcome of the correlation test is provided in [Table I](#).

If the numeric value of the correlation is less than 0.40, meaning there is only a weak correlation between the importance and performance rankings for that attribute, then the data may not meet the normality assumption of IPA (so far as that is possible for ordinal Likert scale data) that is suggested by [Oh \(2001\)](#). Normality of the data is likely to be improved by focusing on the differences, or gaps, between the importance and performance ratings, as discussed below. As reported by [Parker and Simpson \(2018b\)](#), the practical implications of a weak linear relationship is that there may be subpopulations of visitors participating in the MWT experience who have differing views as to the importance

Table I Criteria for evaluating the strength of the linear relationship between the importance and performance ratings of an attribute and the direction of the correlation

<i>Interpreting the value of the correlation coefficient</i>	
Range of correlation values	Strength of linear relationship
Less than/under 0.20	Very weak relationship/Very low correlation
0.21–0.40	Weak relationship/Low correlation
0.41–0.70	Some relationship/Moderate correlation
0.71–0.90	Strong relationship/High correlation
Greater than/over 0.91	Very strong relationship/Very high correlation
<i>Interpreting the sign of the correlation coefficient</i>	
Positive (+) values	Negative (–) values
Visitors rating of the importance and performance of the attribute match. For example:	Visitors rating of the Importance and Performance of the attribute are opposite. For example:
High-importance rating and high-performance rating	High-importance rating and low-performance rating
or	or
Low-importance rating and low-performance rating	Low-importance rating and high-performance rating

Source: Adapted from Sarantakos (1998)

or performance of that attribute. As alluded to in Section 4.1, in such situations, plotting the median values of the importance and performance ratings may provide better focus for management action to enhance visitor satisfaction (Martilla and James, 1977; Oh, 2001).

A statistically important assumption associated with the GA-IPA is that the differences between importance and performance (i.e. Gaps = Performance – Importance) for responses of individual visitors need to be normally distributed to prevent any distortion in the quantitative results and exploratory data analyses should be conducted before proceeding with a GA-IPA (Lai and Hitchcock, 2015; Patroni, 2018).

4.3 Sample size

As for any form of social science survey, the selection and representativeness of wildlife tourism IPA participants needs to be considered (Babbie, 1992; Sarantakos, 1998; Kurtz and Mayo, 1979). While a minimum sample size of between 100 and 200 participants is recommended for questionnaire-based studies, depending on the statistical analyses that will be performed, the sample size needs to be sufficiently large to ensure the survey is representative of the population that is being reported on (Babbie, 1992; Sarantakos, 1998; Weston and Gore, 2006). Readily available “sample size calculators” can be found online; however, the rule of thumb values for sample sizes in social science surveys will, in the main, be adequate for IPA surveys. The minimum acceptable sample size is generally taken to be 100 completed questionnaires, with 200 participants being considered adequate, and samples of 300–400 participants providing a balance between statistical reliability and logistical feasibility (Sarantakos, 1998; Weston and Gore, 2006; Tsang *et al.*, 2017). As with questionnaire design, if it is planned to utilise the data for more complex statistical modelling, such as General Linear Models or Structural Equation Modelling, then larger sample sizes are needed (Golob, 2003; Weston and Gore, 2006). A larger sample size and/or stratified sampling strategy should also be considered if a difference in the responses of subpopulations to the IPA questions are expected or are of interest for the MWT research (see Section 4.2).

5. Practitioner perspectives for the future of IPA in MWT

The implications of employing IPA for tourism practitioners and managers are largely concerned with solving problems and enhancing practice. With MWT expanding around the world (e.g. Orams and Lück, 2014; Drbohlav and Hejkrlik, 2018), there will be an increasing

need to manage over-tourism, visitor perspectives on crowding and congestion and obtain visitor input on satisfaction levels with current and predicted MWT operations. In the future, it will be increasingly important to realise the importance and performance of educational management strategies, the efficacy of structured interpretive programs and visitor impressions of actual and planned management actions (e.g. [Newsome et al., 2013](#); [Lück and Porter, 2019](#); [Patroni et al., 2019](#)). For example, in the case of viewing marine turtles digging nests and laying eggs, [Waayers et al. \(2006\)](#) found that 77 per cent of tourist groups breached a voluntary code of conduct when in the presence of a laying turtle. The work of [Waayers et al. \(2006\)](#), reported from the Ningaloo Reef area of Western Australia, would now benefit from a protected area manager/tourism operator initiated follow up IPA. Its purpose would be to better understand what current tourists feel is most important about their turtle viewing experience, gain an understanding of compliance with the code of conduct, gauge their assessment (performance) of current management actions and provide visitor perspectives on planned management actions.

Recent TripAdvisor reports and the work of [Ziegler et al. \(2018\)](#) reveal that Whale Shark viewing operations in the Philippines are in need of review and the application of appropriate visitor management (see [Pine et al., 2007](#) for global context and [Mau, 2008](#) regarding best practice). For example, the Donsol Whale Shark Interaction has received a high percentage of average to terrible ratings in the first half of 2019 ([TripAdvisor, 2019](#)). Applying IPA here could inform the development of improved industry standards, especially with respect to addressing congestion at sightings and exploring possible contrasting perceptions amongst different cultural groups of clients.

A current dilemma for protected area managers in the Seychelles is increasing tourism leading to over-tourism at Cousin Island, an important seabird sanctuary and iconic wildlife tourism destination ([Narrandes, 2019](#)). Recent reports indicate that visitor control measures at Cousin Island Special Reserve are needed ([Nature Seychelles, 2019](#)). Cousin Island is experiencing record visitation with an increase of 27 per cent above annual visits for the previous 10-year period ([Nature Seychelles, 2019](#)). Managers are in urgent need of visitor data that report on the acceptance of increased access fees, perceptions of crowding and visitor perspectives on sustainable tourism management. IPA can provide such data. Akin to the work of [Newsome et al. \(2019\)](#), this can lead to government support for control policies leading to improved management, visitor acceptance of management strategies and the maintenance of high levels of visitor satisfaction.

6. Researcher perspectives of the future of IPA in MWT

Following on from a practitioner's perspective, future IPA research can make a significant contribution in setting a management agenda for sustainability and enhanced visitor satisfaction in MWT (e.g. [Patroni, 2018](#); [Patroni, Simpson and Newsome, 2018](#); [Lück and Porter, 2019](#)). Previous questionnaire work has shown the benefits of gaining visitor perspectives on the importance of MWT, the feeding of marine wildlife, the role that educational programs can play and the need for ranger presence to supervise tourists who come into contact with marine wildlife (e.g. [Lewis and Newsome, 2003](#); [Orsini and Newsome, 2005](#); [Stoeckl et al., 2005](#); [Smith and Newsome, 2006](#); [Patroni et al., 2019](#)).

[Orsini and Newsome \(2005\)](#) utilised surveys to explore the social dimensions of incidental and dedicated tourism to an Australian Sea Lion haul out site located at Carnac Island, Western Australia. Survey data revealed the need for more information about Australian Sea Lion behaviour and ecology. Results from the questionnaire provided researchers and management with insight into how much ignorance there was in regard to public understanding as to why Australian Sea Lions were on the beach and whether visitors thought they were disturbing the sea lions or not. Teasing out what is important, via IPA, and gauging the performance of MWT experiences will aid in enhancing visitor satisfaction and the sustainable management of such MWT interactions. In this regard, [Rodger et al. \(2011\)](#)

developed a simple to use assessment framework that can be applied in MWT situations. Moreover, undertaking IPA can go a long way in resolving data deficiencies relating to the social dimensions of existing and proposed MWT operations. More recently, although not a MWT example, the IPA conducted by Newsome *et al.* (2019) has resulted in workshops, seminars and political engagement in regard to tourism development and the future management of wildlife sightings (Kasmir, 2016; *The Borneo Post*, 2016; Kinabatangan-Corridor of Life Tourism Operators Association, 2017). Such IPA-derived research is thus contributing to the future management of an iconic wildlife tourism destination.

7. Conclusion

IPA research is important and much needed as interactions between humans and marine wildlife are complex, often contentious, and almost every situation is different. Marine-based wildlife tourism can impact many target species and an even greater number of off-target species by different means and potentially to a greater extent than in terrestrial wildlife tourism situations. At the same time, it could be perceived that the emphasis on reporting of only peer-reviewed literature may be considered a shortcoming of this review. Accordingly, we acknowledge that there would be value in future research that explores the grey literature and the fostering of additional engagement with managers and operators who deliver MWT experiences and who recognise the importance of IPA. Historically, the application of IPA in the MWT space has been limited, yet this technique provides much insight into what is important to the visitors and how satisfied they are with the attributes of their experience. Looking to the future, such an insight provides management with a win-win focus for those attributes that can increase visitor satisfaction while minimising impacts on marine wildlife. Increasingly, visitor attitudes have the ability to positively modify the future management and regulation of wildlife tourism. For these reasons, understanding what is important for the visitor experience and using that knowledge to optimise management of marine wildlife interactions can ensure both the satisfaction of future tourists and the future welfare of the wildlife targeted for tourism.

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Author affiliations

Greg D. Simpson is based at the Centre for Sustainable Aquatic Ecosystems, Harry Butler Institute, Murdoch University, Perth, Australia and the Sukau Ecotourism Research Centre (SERC), BEST Society, Kota Kinabalu, Malaysia.

Jessica Patroni is based at the Centre for Sustainable Aquatic Ecosystems, Harry Butler Institute, Murdoch University, Perth, Australia.

Albert C.K. Teo is based at the Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah, Kota Kinabalu, Malaysia; Borneo Eco Tours, Kota Kinabalu, Malaysia and the Sukau Ecotourism Research Centre (SERC), BEST Society, Kota Kinabalu, Malaysia.

Jennifer K.L. Chan is based at the Borneo Tourism Research Center, Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah, Kota Kinabalu, Malaysia and the Sukau Ecotourism Research Centre (SERC), BEST Society, Kota Kinabalu, Malaysia.

David Newsome is based at the Environmental and Conservation Sciences, College of Science, Health, Engineering, and Education, Murdoch University, Murdoch, Australia and the Sukau Ecotourism Research Centre (SERC), BEST Society, Kota Kinabalu, Malaysia.

Corresponding author

Greg D. Simpson can be contacted at: G.Simpson@Murdoch.edu.au

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