

# The utilisation of protected area visitor research: a conceptual framework

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## Abstract

Visitor research constitutes a substantial body of knowledge within tourism literature. Effective application thereof enhances managerial decision-making towards more sustainable tourism management. However, this research is rarely exploited to its full potential. Little is known about the process of utilisation of visitor research in tourism and recreation. This article conceptualises this phenomenon in the context of protected areas by applying knowledge utilisation theory. A two-round Delphi survey was conducted among a panel of visitor research and visitor management experts from various countries to explore the determinants of utilisation, and the components of utilisation impacted. The results suggest visitor research is not optimally applied in visitor management strategies, practices and policies. The utilisation process is complex and involves at least five different categories of determinants: Skills, capacity and awareness of practitioners; the engagement between researchers and practitioners; the organisational context; dissemination efforts; and the characteristics of the research. Determinants underpinned by the organisational interest and interaction explanations appear to play an important role in utilisation. The study proposes a novel conceptual framework outlining the dynamics involved in the movement of visitor research from researchers to practitioners across the stages of utilisation. Recommendations for closing the research-practice gap are provided.

**Keywords:** visitor research, knowledge utilisation, research-practice gap, visitor management, protected areas

## Introduction

Effective protected area (PA) management should be led by evidence-based decision-making (Roux et al., 2019). This goes without saying in the complex and “messy” setting of visitor management which is characterised by continuous change and uncertainty (Spenceley et al., 2015) and inconsistent management approaches and frameworks (Albrecht, 2018; Miller et al., 2017). Visitor management requires substantial levels of skills and expertise (Leung et al., 2018); and is seated within a volatile social, political and biophysical context (McCool, 2012).

Management challenges in outdoor recreation are traditionally dichotomised into environmental research issues, studying resource impacts; and social science issues, covering social aspects, e.g. crowding and conflicts. The two are intricately linked and

require an all-encompassing, multidisciplinary approach (Manning, 2011). There is a subsequent growing urgency for PA managers to have access to information on visitors' characteristics; use patterns; their expectations, motivations, satisfaction, opinions, and behaviours; and visitor impacts and its influential and causal factors. Such knowledge is crucial for application towards effective planning; tourism development; visitor use and impact management; resource allocation; visitor interpretation; improved visitor experiences; marketing efforts; risk management and other management activities ( from Griffin et al., 2008; Marion, 2016; McCool, 2012; Newsome et al., 2013; Wardell & Moore, 2004 ).

One could reasonably expect the application of visitor research, as one of several knowledge sources required in effective PA management, to be a catalyst in enhancing the level of decision-making in visitor management. The expansion of tourism research has been significant in terms of the amount, sources and research outputs. Despite this, academics and practitioners have noted discrepancies and inefficiencies between the production and utilisation thereof, both in a broader tourism context (Hudson, 2013) and outdoor recreation settings (Manning, 2011). This creates a research-practice divide, also witnessed in various other applied sciences (Pfeffer & Sutton, 2000). The situation is perhaps best summed up by the words of Ritchie and Ritchie (2002, p. 451) "a great deal of research is being conducted in tourism, but is inefficiently used and rarely exploited to its full potential".

This article first explores the literature on utilisation-related challenges and determinants contributing to sub-optimal use, followed by an explication of the main knowledge utilisation theories. A conceptual framework is presented depicting the dynamics and components involved in utilising visitor research in PAs. The empirical investigation produces a contemporary expert view on whether the visitor research available to PA managers is optimally applied and, if not, what affects utilisation. Five categories of determinants, and the components of utilisation they impact, are identified from experts' inputs. The authors then align the categories of determinants with the main knowledge utilisation theories, to strengthen understanding of how the research-practice gap in PA visitor management can be overcome.

## **Literature review**

### ***Limitations of visitor research in PA management***

For this article, we define visitor research as data and information gathered to increase our knowledge of visitors. More specifically, their socio-demographic and psychological attributes; behaviours and use patterns at the destination; the benefits they receive from visitation; along with the positive and negative impacts arising from their visitation. It includes data from the social, environmental, and resource aspects involved in tourism and recreation.

Research uptake in PA management decision-making has long been recognised as a neglected area of study (Wardell & Moore, 2004), with only a few scholars exploring its challenges to date. Inadequate utilisation was observed by Darcy et al. (2007) who noted a

disjunction between research and park management tools. Unsystematic data collection has suppressed information flow (Moore & Hockings, 2013) and contributed to compromised management decision-making abilities (Griffin et al., 2008). Others have called for an increase in the number of applications of research (Buckley et al., 2001).

One of the major challenges widening the research-practice gap in PAs is the complexity associated with social-ecological systems. These systems are known for uncertainty as they encapsulate various elements that interact at different scales (McCool, 2012). Recreational use on public lands is impacted by continual changes in visitor preferences, advances in technology, urban developments and other societal demands. The practitioner and research communities have not been able to cope with these shifts (Cervený et al., 2020). Those involved in PA visitor management decision-making often lack experience in dealing with complex visitation-related problems since most technical managers were trained in environmental management (Blahna et al., 2020). The management process, influenced by political factors, is a source of misconceptions that divide researchers and practitioners. Limited communication between the two communities further constrains research use (Manning, 2011). The research-management relationship is also challenged by the academic environment researchers find themselves in, favouring and rewarding publications over spending time with PA managers to translate research findings into actionable objectives. The mental model of research utilisation is equated to a “hypodermic needle” approach, where PA agency managers are injected with data and information under the assumption (by researchers) that the presentation of data and information automatically equates to knowledge transfer and management action (McCool, 2012).

Apart from the previously mentioned studies and the works of a few others, documenting the state-of-knowledge, or reviewing the application of visitor research in visitor management (see Booth, 2006; Griffin et al., 2010; Marion, 2016; Pickering et al., 2018), little is known about the extent and determinants of actual utilisation to improve decision-making in visitor management. Any further attempts toward this aim should arguably be underpinned by an understanding of knowledge utilisation.

### ***Challenges in the utilisation of knowledge***

Knowledge utilisation is the extent to which sources of evidence is utilised in management decisions (Xiao & Smith, 2007). Drawing on the early work by Beyer and Trice (1982), Patton (1997) and Rich (1997), the authors summarise knowledge utilisation as the process and resultant outcome from the management and organisation of data and information; the social and affective associations that affect its use and explication; the ability to elect research knowledge appropriate for decision-making; and the activities associated with putting research into action.

While the non-availability of research is a significant problem, most studies on knowledge use (including this one) investigate why practitioners are not effectively utilising the sources of evidence already available to them. In recreational services, such impediments include: The receptiveness and capacity of both tourism organisations and destinations to adopt new knowledge (Scott et al., 2008); the view by practitioners that research is either irrelevant (Kelly, 2000) or overcomplicated (Thomas, 2012); the view that academics are more

concerned with engaging in knowledge conversations with themselves than interacting with practitioners (Samdahl & Kelly, 1999); the fact that practitioners pay little attention to academic publications (Jordan & Roland, 1999); and the suggestion that managers rely more on intuition and personal experience than research for decision-making (Xiao & Smith, 2007).

Studies that investigated the utilisation of research in fields other than tourism uncovered various items influencing practitioners' ability to use knowledge (Table 1).

**Table 1. Categories and determinants of knowledge utilisation.**

Category	Determinants	Sources
Acquisition efforts	Efforts by the practitioner to acquire research.	Amara et al. (2004); Landry et al. (2003).
Attributes of the practitioner	Awareness of media publications about research.	de Goede et al. (2012).
	Experience with research.	Belkhdja et al. (2007); de Goede et al. (2012).
	Level of education.	Amara et al. (2004); Belkhdja et al. (2007)
	Perceptions held about the risks of the research.	Roux et al. (2006).
	Preferred sources of information.	van der Arend (2014).
	Preferred types of information.	Rich and Oh (1993); Roux et al. (2006).
	Prioritisation of high quality research.	Cherney et al. (2013).
	Prioritisation of the feasibility of research.	Cherney et al. (2013); Cherney et al. (2012b).
	Prioritisation of the usability of research.	Cherney et al. (2013); Cherney et al. (2012b).
	The practitioner's context.	Amara et al. (2004); Cherney and McGee (2011); Cherney et al. (2012b); Landry et al. (2001).
Attributes of the researcher Characteristics of the research	Time allocated towards research or intellectual reflection.	Belkhdja et al. (2007); Roux et al. (2006).
	Level of publication outputs.	Landry et al. (2001).
	The researcher's context.	Cherney et al. (2012b); Landry et al. (2001).
	Benefits to society.	lon et al. (2019).
	Commissioned research.	van der Arend (2014).
	Extent to which research is directed towards practitioner's needs.	Amara et al. (2004); Cherney and McGee (2011); Cherney et al. (2012a); Landry et al. (2003).
	Focus on advancement of scholarly knowledge.	Amara et al. (2004); Landry et al. (2001).
	Perceived contribution of the research to professional objectives of the researcher.	lon et al. (2019).
	Relevance of the research in policy decisions.	Amara et al. (2004); Landry et al. (2003).
	Relevance and importance of the research to the practitioner's work.	Amara et al. (2004); Belkhdja et al. (2007); Cherney et al. (2012b); Landry et al. (2003).
Dissemination efforts	Research focus on real life problems.	Roux et al. (2006).
	Timing of the research.	Landry et al. (2001); Cherney and McGee (2011); Olszewski (2015).
	Type of research (quantitative, qualitative or mixed).	Amara et al. (2004); Landry et al. (2001).
	Adaptation of research outputs to the practitioner's needs.	Amara et al. (2004); Cherney et al. (2012a, 2012b); Cherney et al. (2013); Cherney and McGee (2011); Landry et al. (2001);

	Dissemination efforts of the researcher.	Landry et al. (2003). Cherney et al. (2012a, 2012b); Cherney and McGee (2011); Landry et al. (2001); Landry et al. (2003).
Funding	Importance placed on external funding.	Cherney and McGee (2011); Landry et al. (2001).
Interactions between researchers and practitioners	Number of external grants.	Landry et al. (2001).
	Interactions between researchers and practitioners.	Crona and Parker (2011); Hemsley-Brown (2004).
	Involvement of the practitioner in the research process.	de Goede et al. (2012).
	Involvement of the researcher in decision-making.	de Goede et al. (2012).
	Communication between researchers and practitioners	Roux et al. (2006).
	Investment in research partnerships.	Cherney et al. (2013). Cherney et al. (2012b).
	Linkages between researchers and practitioners.	Amara et al. (2004); Belkhodja et al. (2007); Cherney et al. (2012a, 2012b); Cherney and McGee (2011); Hemsley-Brown (2004); Landry et al. (2001); van der Arend (2014). Cherney et al. (2012b).
Organisational settings	Problems associated with the orientation of research partnerships.	
	Types of research partners.	van der Arend (2014).
	Intensity of use of research sources.	Belkhodja et al. (2007)
	Leadership.	Hemsley-Brown (2004).
	Number of employees.	Landry et al. (2003).
	Organisational capacity	Belkhodja et al. (2007).
	Organisational type	Amara et al. (2004); Landry et al. (2003); Belkhodja et al. (2007).
	Peer-to-peer interactions of practitioners.	Crona and Parker (2011).
	Policy-making based on research.	van der Arend (2014).
	Politics.	Ottoson (2009).
	Training activities that integrate research results.	Belkhodja et al. (2007)

Research is not the only source of knowledge managers rely on to make justifiable decisions. Organisational memory refers to “the individual recollections and shared interpretations of historical information consequent to implementing earlier decisions and brought to bear on present decisions” (Baskerville & Dulipovici, 2006, p. 93). The recollection of good and bad management decisions of the past could enable or hinder learning and decision-making (Kransdorff, 2006) and bias decisions towards maintaining the status quo (Baskerville & Dulipovici, 2006; Zakaria & Mamman, 2015). Little is known of the interactions between organisational memory and visitor research; and whether organisational memory enables or hinders the uptake of new knowledge in the PA visitor management context.

Notwithstanding an expanding body of knowledge exploring the determinants of utilisation (Crona & Parker, 2011), the field of study still lacks a formal definition to house different concepts of knowledge utilisation in an all-encompassing and uncomplicated manner (Heinsch et al., 2016). Despite this shortcoming, scholars have identified six main theoretical explanations which are discussed next.

### ***Theoretical explanations of knowledge utilisation***

Knowledge utilisation literature describes six prominent streams of theories interpreting the determinants of organisational knowledge uptake: (i) Push and pull models, (ii) dissemination models, (iii) engineering explanations, (iv) organisational interest

explanations, (v) the two communities metaphor, and (vi) interaction explanations (from Amara et al., 2004; Belkhdja et al., 2007; Landry et al., 2001). This section briefly describes the streams, expounding the major differences, advantages and limitations of each.

'Push models' (knowledge-driven approaches) suggest a linear movement of ideas from research towards absorption, enabling the diffusion of innovation. In contrast, 'pull models' (problem-solving approaches) start from the premise of a real-life problem identified by the end-user, directed to the researcher for modification into a research question and proposed solutions. Utilisation is stimulated by the fact that end-users are receptive and willing to implement workable solutions (Rosenberg & Nathan, 1982; Yin & Moore, 1988). Generally, researchers use push strategies to get knowledge across the research-management divide, while managers employ pull strategies to solicit the required information. Both approaches have been criticised for their limitations. For example, end-users may feel alienated from the research forced onto them in the push model, perceiving it to have little practical relevance (Heinsch et al., 2016). With the pull model, utilisation may be limited when end-users solicit research for easily identifiable operational issues, ignoring more substantial information needs (Roux et al., 2006).

The 'dissemination model' also speaks to the movement of knowledge, but from the premise that knowledge transfer does not happen automatically and that additional actions are required to channel knowledge to relevant end-users. Dissemination has occurred when the end-user becomes aware of new knowledge. Various mechanisms are employed to facilitate dissemination (Belkhdja et al., 2007; Landry et al., 2001).

Moving away from the flow of knowledge, the 'engineering explanations' attribute the level of utilisation to the research characteristics (e.g. reliability, complexity, observability, compatibility) and the type of research conducted (e.g. qualitative, quantitative, applied, basic research). Although such explanations may be applicable in some public sector cases, they largely ignore the organisational and social contexts in which governmental organisations operate (Amara et al., 2004).

'Explanations of organisational interest' counter this limitation by accounting for the effect that contextual variables, embedded in organisational features and interests, have on utilisation (e.g. size of organisation, positions held by end-users, alignment with policy domains) (Landry et al., 2003). Within this group of explanations, the user's context has been identified as a factor influencing academic research demand (Cherney et al., 2013). The practitioner's environment could influence their beliefs about the relevance, merit and feasibility of a particular piece of evidence. An organisation's absorptive capacity, or its employees' ability to identify, interpret, and apply research findings (Tanriverdi & Venkatraman, 2005) also play an important role, along with access to research outputs such as reports and journals (Cherney et al., 2013).

From a different viewpoint, the 'two communities metaphor' (Caplan, 1979) ascribes the low level of instrumental use of social sciences research to the fact that researchers and end-users reside in two culturally different worlds with different objectives and values; each operating within different paradigms, experiencing different challenges and having different viewpoints about the context of research (Xiao & Smith, 2007). Managers, who look for

simple, easy-to-use answers, often regard the knowledge produced by academics as overcomplicated (Richie & Ritchie, 2002). Practitioners' efforts towards acquiring research and the adaptation of research outputs into products that managers can understand and align to the organisation's challenges have been highlighted as influential (Amara et al., 2004).

The 'interaction explanations' view social interactions between researchers and practitioners as one of the most important predictors of utilisation (Landry et al., 2003). This model was developed in response to criticisms of previous science-push and demand-pull models. Scholars increasingly agree that committed relationships, exchanges and joint efforts between researchers and practitioners lead to more functional knowledge (Heinsch et al., 2016) and significantly counters suboptimal utilisation (Dunn, 1980; Landry et al., 2001; Oh, 1997; Yin & Moore, 1988). Various scholars' works support the interaction explanations (Cherney et al., 2012a, 2012b; Crona & Parker, 2011; de Goede et al., 2012; Estabrooks et al., 2011).

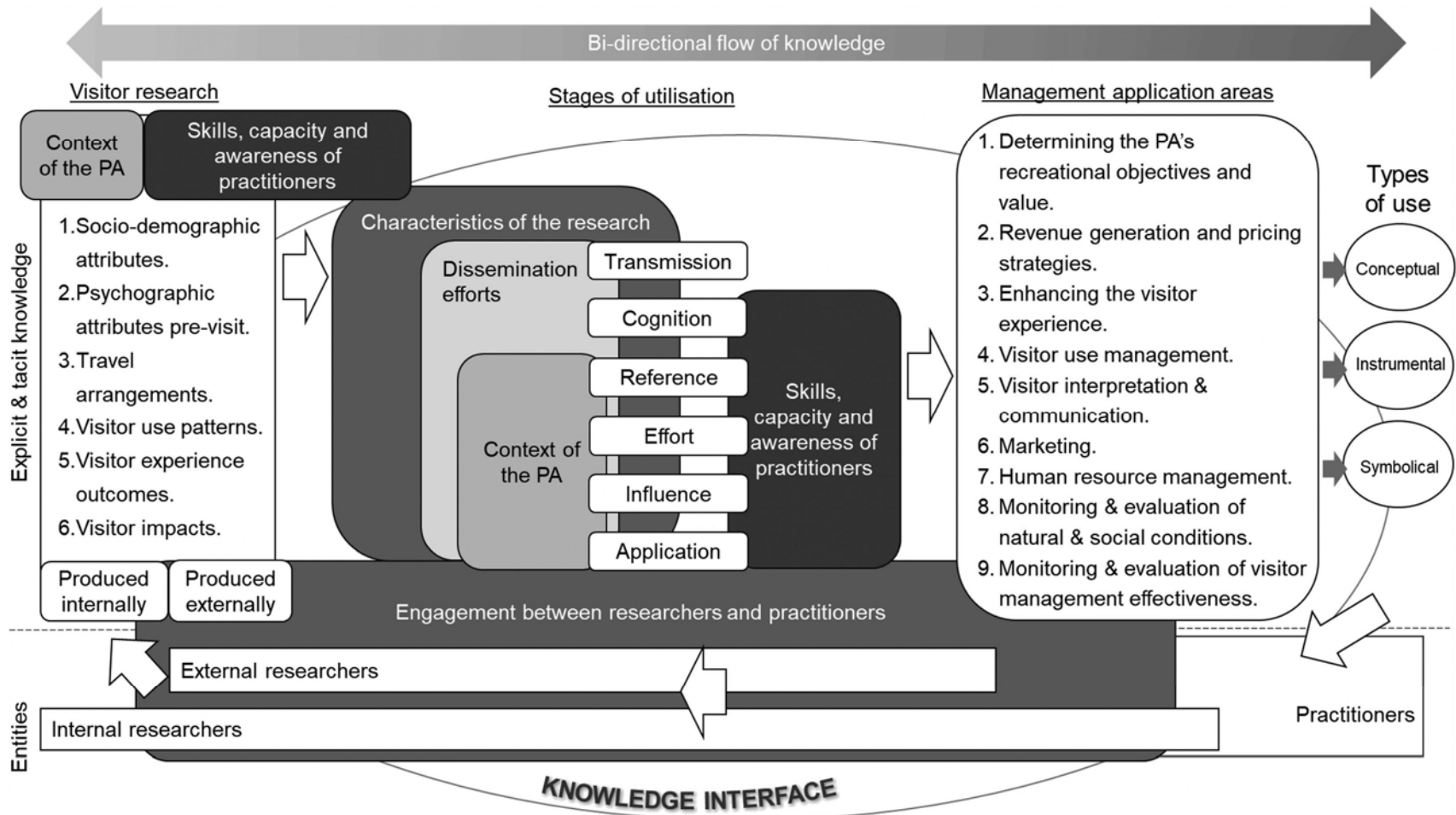
Evidently, various theoretical stances provide explanations for inconsistent levels of utilisation. Despite their usefulness in suggesting potential barriers or opportunities in the pathway towards uptake of visitor research by practitioners, no studies could be found that examined the relevance of the explanations mentioned above in the context of PAs. Thus a framework is presented next that conceptualises the components involved in the uptake of visitor research by practitioners.

### ***Draft conceptual framework***

Figure 1 depicts the authors' understanding of visitor research utilisation in PA visitor management. It is described along the dimensions of (i) the movement of knowledge, (ii) the determinants of utilisation, (iii) the process by which knowledge moves, (iv) the application areas where knowledge is absorbed into, (v) the entities involved in the knowledge production and utilisation process, (vi) the interactions between the entities, and (vii) the end result of utilisation.

Six visitor research types and nine management application areas where research was recommended to be applied were identified in earlier work by the authors involving a systematic review of 407 visitor research studies conducted in national parks during the years 2014 – 2018 (under review). Knowledge transferred by researchers at some point collides with the determinants inhibiting or enabling utilisation. Here a list of items that impact the uptake of research by practitioners is hypothesised, informed by the literature explored. Based on the lead author's personal experience of managing tourism research in a PA agency, an additional three items were included, bringing the total to 17 items. These were: Collaboration between internal and external researchers; a researcher's level of experience working with PAs with high visitation levels; and previous involvement in PA visitor management.

Knowledge utilisation is a process rather than a single event, represented by the six cumulative stages conceptualised by Knott and Wildavsky (1980), and later adapted by Landry et al. (2001). The process starts with researchers' *transmission* of research,



**Figure 1.** Draft conceptual framework for the utilisation of visitor research.



succeeded by *cognition*, or practitioner understanding of the research results. The third stage is *reference* – the actions where practitioners cite the research as a reference in their reports, studies, and strategies. *Effort*, which involve the actions taken by practitioners to adopt the outputs of the research follows *reference*. The final stages involve *influence* and *application*. Influence happens when the research has affected the choices and decisions of practitioners. *Application* is said to have happened when the research gives rise to applications and extension of management activities.

The entities involved in the process comprise the producers (internal and external researchers) and the end-users of knowledge (practitioners involved in PA visitor management). The authors made an assumption that external researchers engage less with research produced internally, as such knowledge is not always subjected to public dissemination. The authors further propose that greater interaction exist between practitioners and internal researchers than practitioners and external researchers, provided there are internal research capabilities in the first place.

Once visitor research is applied to management activities, three types of utilisation can occur: instrumental, conceptual, and symbolic. Instrumental use implies the employment of research in an action-oriented way to find practical solutions to a specific management challenge (Xiao & Smith, 2007). Conceptual use, also known as “knowledge for understanding” (Rich, 1977), implies the application of knowledge in the development of new theories, hypotheses or understandings about the problems at hand, but without necessarily directly changing policy or decisions (Cherney & McGee, 2011). Symbolic or political use entails the application of research to justify a political position or practice or defend prior decisions (Cherney & McGee, 2011, Xiao & Smith, 2007).

Utilisation of research demands a process that facilitates the transfer of understanding and knowledge, moving beyond data and information transfer. Based on this principle, the knowledge interface dimension, informed by Roux et al. (2006), represents the mechanisms that facilitate knowledge flow between communities. In an attempt to move away from the push-pull models, the authors advocate for a bi-directional flow of knowledge through ongoing interactions between the two communities to realise a shared and enhanced understanding of the subject at hand. Knowledge of practitioner challenges is communicated to researchers, who in turn produce research to address these challenges. The new insights arising from the research are transmitted from the producers to the practitioners. Although not the focus of this article, it is acknowledged that movement again takes place in the opposite direction, as the enhanced understanding gained from management decisions and actions, and the consequences thereof are shared with researchers (Mason, 2005; McCool et al., 2007). Such increased understanding can be absorbed back into the organisational memory and create additional demand for research, representing an iterative and symmetrical process at the micro-level (McCool, 2012). In practice, knowledge appears to move in such a bi-directional fashion continuously. For this study's purposes, we limit the focus to understanding the inhibitors and enablers of utilisation of knowledge moving in one direction: from researchers to practitioners.

## **Methods**

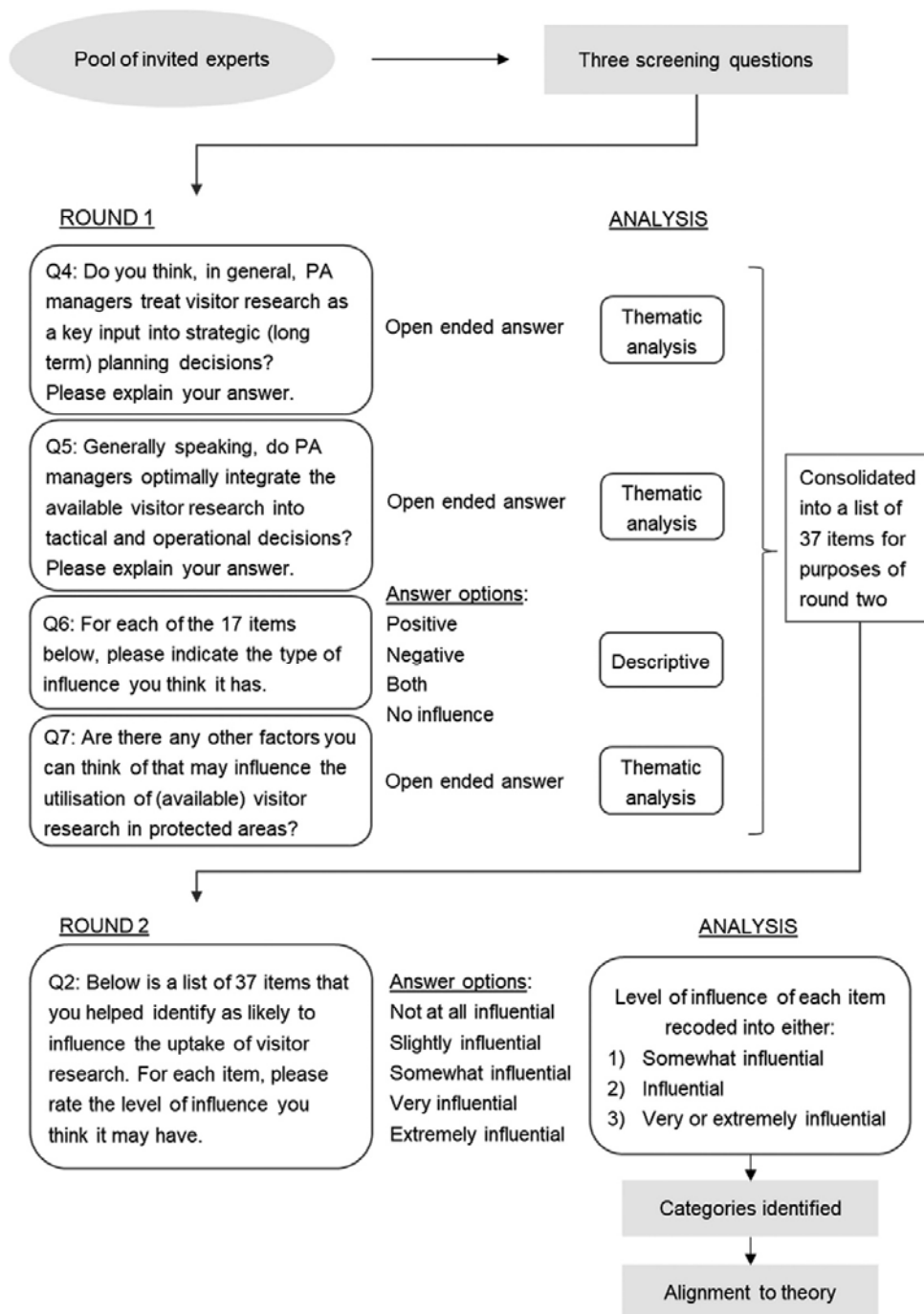
The study's main objective was to determine what influences the uptake of visitor research by PA practitioners and in what ways. Before delving into these aspects, the authors gained a contemporary expert view on whether the available visitor research is optimally integrated into strategic, tactical and operational decisions.

A qualitative approach was applied to gather information from experts, allowing for identifying of themes and exploring underlying meanings (Saunders et al., 2012). It was anticipated that various items would be mentioned as reasons behind the current utilisation of research. The Delphi technique facilitates convergence of opinion on a specific real-world issue, by collecting data from a panel of experts through questionnaires delivered in multiple iterations (Hsu & Sandford, 2007). The technique is commonly applied in the development of concepts or frameworks, which is the focus of this study. Such a process usually comprises two steps, starting with identifying a set of concepts, followed by classification or taxonomy development (Okoli & Pawlowski, 2004).

The University of Pretoria's Research Ethics Committee granted approval for the study. Participants were informed of the study's purpose, and a list of conditions related to informed consent provided. These included voluntary participation, privacy and confidentiality for all participants. Individuals could stop participation at any point in time without any negative consequences. The conditions further stated that any quotations used in reporting would be anonymised to protect the respondent's identity. The identity, job titles, employers and other personal information of respondents remain known only to the authors.

### ***The Delphi process***

This study applies the Delphi method to embrace varying opinions for informing the conceptual framework's development (Okoli & Pawlowski, 2004). A two-round Delphi survey was carried out, firstly to gather information, and in a second iteration, to allow experts to reassess their initial judgments of the array of determinants mentioned in the first round. Figure 2 outlines the process and the questions posed to experts in semi-structured interviews during round one, followed by a structured questionnaire in round two. It further indicates how the data collected was analysed.



**Figure 2.** The Delphi process, data collected and analysis performed in this study.

***Selection of experts***

Data was collected from key individuals with the experience, knowledge and occupations that put them in a position to contribute to our understanding of the topic. A pool of potential participants were identified based on their experience and responsibilities working with visitor research in a PA visitor management context, and then screened for eligibility. The process of identifying individuals involved a series of steps. A systematic review of

visitor research in PAs (under review) produced a useful list of experienced researchers. This list was expanded by including senior managers in PAs responsible for visitor research or visitor management and authors of PA visitor management literature, identified through internet searches and personal knowledge. This approach produced an initial list of 56 experts, two of which had retired but are still actively involved in the PA network. One expert delegated the task to a more experienced colleague, and another forwarded the invitation to a global PA visitor management interest group.

Three screening questions assessed individuals' eligibility for participation, based on their (i) current positions held; (ii) responsibilities in conducting or overseeing visitor research; and (iii) involvement in visitor management. Thirty-four experts from six different continents responded. Eight were excluded either because their responses were incomplete (six) or the qualifying criteria weren't satisfied (two). The remaining 26 experts resided in: Africa (six); Australasia (six); North America (six); Europe (five); South America (two) and Asia (two).

The final list of experts had, on average, 21 years of experience working with or for PAs (minimum six years; maximum 49 years). Experts also indicated their involvement in both visitor management and research on various continents. Half of the experts had involvement in visitor management on more than one continent, with five experts having worked on four or more continents. Eighteen experts noted involvement in the collection of visitor research on only one continent, while five had collected visitor data in three or more continents.

Sixteen experts were external researchers or consultants who work with PAs regularly, half of whom held a well-established publication record (an h-index of 20 and above according to Google Scholar profiles) at the time of writing this article. Seven experts were senior staff members at a PA agency (five senior managers in research and two senior visitor management experts). The remaining three experts worked for a national department or ministry of environment with responsibilities of overseeing visitor research in several PAs.

Of the 26 experts who completed round one, 20 proceeded to complete round two of the Delphi survey.

### ***Data collection***

The panel of experts was invited to participate in either an online asynchronous interview using SurveyMonkey®, or an online synchronous interview via the video conferencing service Zoom. Both interview methods are recognised tools in qualitative social science research (Archibald et al., 2019; Hesse-Biber & Griffin, 2013; Ratislavová & Ratislav, 2014). Experts were approached via email during the week of 29 July to 5 August 2019 for participation in round one. All but one opted for an asynchronous interview, which facilitated data collection over different time zones and geographical distances. The interviews were semi-structured and provided many opportunities for experts to expand on their answers, unlike quantitative methods using structured questionnaires. In addition, follow-up email conversations were held when further clarity on a respondent's answers were required. The majority of responses were received within a week of the first invitation. Reminders were sent to those who hadn't responded after two weeks. Invitations for round

two were sent on the 28<sup>th</sup> of August 2019. Reminders were sent after a week and data collection concluded two weeks later.

In round one, experts were encouraged to elaborate on whether research was treated as a key input into i) strategic and ii) tactical and operational decisions. Next, using the 17-item list of potential determinants, experts noted the type of influence of each (positive, negative, both, or no influence) (Figure 2). Lastly, experts could mention any other determinants not listed or discussed before. In round two, a consolidated 37-item list, identified in round one, were presented back to experts. Round two granted an opportunity for experts to re-examine their initial responses by also considering the determinants identified by other panellists. To determine the most dominant factors at play, a five-point Likert scale was used, with 1 = not at all influential, 2 = slightly influential, 3 = somewhat influential, 4 = very influential and 5 = extremely influential. Likert scales have been utilised in other small sample Delphi studies to measure importance (Hofman et al., 2020). The Likert-ratings produced an aggregated judgement of the assortment of determinants involved in research utilisation. All 37 items had mean values above 3. Standard deviations were calculated to determine how widely the answers varied as an indication of consensus or diversity of opinion (Kaynak & Marandu, 2006). All were below the recommended threshold value of 1.5 for a 5-point scale (Giannarou & Zervas, 2014), pointing towards consensus. Furthermore, the authors used the round two results to group the determinants into categories for appraisal against existing theory. Hence, the Delphi process served its purpose of informing the conceptual framework's taxonomy (Okoli & Pawlowski, 2004), and data collection was subsequently concluded after round two.

### ***Data analysis***

In round one, identifying themes was fundamental to analysing data gathered in the open-ended answers (Figure 2). An inductive process was used to manually code experts' answers, which were then grouped into common themes (Braun & Clarke, 2006). Results of the thematic analyses of Q4 and Q5 revealed several themes of determinants. The data from Q7 delivered similar results, with many repetitions of themes already mentioned previously, pointing towards data saturation. The combined determinant themes from Q4, Q5 and Q7 were anonymised and summarised. This data, together with the results of Q6, was used to create the consolidated 37-item list of potential determinants which was presented back to experts in round two.

An evaluation of the means of each of the 37 items (round 2) indicated all 37 were regarded as influential, albeit at differing levels. Using the mean range of each, the level of influence was recoded into three levels as an indication of its importance: Somewhat influential ( $m < 3.5$ ); influential ( $3.5 \leq m < 4$ ); and very or extremely influential ( $m \geq 4$ ). Measuring each item's level of influence in this manner helped the authors identify the most important elements. Finally, five major categories of determinants of utilisation were identified by grouping relevant items together.

### ***Assumptions and limitations***

The focus of the study is on the utilisation of available visitor research by practitioners. An assumption was made that individuals with experience in dealing with visitor research and visitor management in PAs would likely have witnessed varying utilisation levels across different research projects and PA contexts. As such, these individuals would be in a good position to comment on the current state of utilisation and identify determinants of utilisation. The large number of external researchers consulted may have introduced bias; however, given PAs' reliance on them for conducting research, the inclusion of researchers who have worked with PAs for many years, we felt, was justified. The lead author's past experiences in managing tourism research influenced the research design, e.g. the selection of the 17 items used in round one and possibly the analysis and interpretation of results. The inclusion of open-ended questions and the Delphi process's inductive nature and its thematic analysis countered this limitation (Knowles, 2019). The lead author's employment at a PA agency could have influenced the way experts responded. The use of an asynchronous data collection method in all but one of the interviews reduced this limitation as experts could freely express their views in their own words without the pressure of being directly observed by the interviewer, such as in face-to-face interviews (Ratislavová & Ratislav, 2014).

### **Results**

#### ***Results of round one***

##### *The integration of visitor research into strategic, tactical and operational decisions*

Expert opinion varied on whether visitor research is being treated as a key input into strategic, or long term planning in PAs. While six of the 26 experts noted an improvement in managers' attitudes towards research, six others believed visitor research is not regarded an essential component of strategic planning. Four experts reportedly witnessed its integration into long-term planning, albeit to a limited degree. Uptake in strategic planning varies quite a lot between PAs and even within PA agencies. Various reasons were cited for the statements provided. Some experts witnessed certain types of research being prioritised when it comes to strategic planning.

Most experts believed that visitor research is underutilised in tactical and operational decisions, with a clear gap between what is produced and what is utilised. Levels of utilisation in tactical and operational decisions also vary within and between PAs, with some believing there is still too much focus on natural resource management. Three experts acknowledged that research utilisation is a slow and ongoing process, while two expressed uncertainty about the implementation of their own research recommendations. On a more positive note, seven experts specifically mentioned they'd seen improvements in some areas. New public planning manuals have facilitated the use of visitor data but are still only seen in a small proportion of PAs.

### *Expert views on the initial 17-item list of determinants*

More than 70% of experts agreed that 16 out of the 17 items influenced research utilisation (Table 2). The exception was the researcher's level of experience in terms of number of publication outputs (articles, books, etc.) (Less than 50% agreed). When asked about the direction of influence, 14 items were regarded positive by the majority, encouraging the uptake of research. The organisational memory of a PA was viewed both a positive and negative determinant by 42% of experts. Similarly, 46% of experts regarded the type of research conducted (qualitative, quantitative, or mixed) as both encouraging and inhibiting the uptake of research.

**Table 2. Expert views on the type of influence of the 17-item list.**

Item	Direction of influence	%
Acquisition efforts by practitioners.	+	62%
Adaptation of research outputs to suit the practitioner's needs.	+	81%
Availability of practitioners that are trained in the role of visitor research in PA visitor management.	+	89%
Collaboration between internal and external researchers.	+	84%
Dissemination efforts by the researcher.	+	77%
Interactions between the researcher and practitioner(s).	+	85%
Involvement of the practitioner in the research process.	+	54%
Involvement of the researcher in management decision-making.	+	58%
Organisational memory of the PA.	+ / -	42%
Practitioner experience with and understanding of visitor research.	+	65%
Relevance of the research to the practitioner's work.	+	85%
Research is directed towards practitioners.	+	77%
Researcher experience in PA visitor management.	+	81%
Researcher experience in terms of publication outputs (articles, books, etc.).	Not influential	44%
Researcher's experience in working in PAs with high visitation levels.	+	56%
Researchers taking the practitioner's context into consideration.	+	89%
Type of research conducted (qualitative, quantitative, or mixed).	+ / -	46%

+ Positive; - Negative; +/- Both positive and negative.

### *Inhibitors and enablers identified through thematic analysis*

Fifteen inhibitors and 13 enablers were identified from the experts' open-ended answers. The most frequently mentioned determinant inhibiting visitor research application into management decisions was a lack of capacity and ability (in terms of resources, budget, skills and time) of managers to value, source, interpret, and apply research effectively. Managers, many of whom were historically trained in natural resource management, lack the skills required to interpret and absorb research into tactical and operational decisions. Few have been adequately trained in visitor management, and many lack the time and resources to synthesise the research implications for management.

There are issues of manager's capacity to apply and appreciate the value of research, or even have the time or resources to do so. (Expert 4)

Many managers have very weak training in the many subfields of visitor management, so find it very difficult if not impossible to understand the implications of the findings for management. (Expert 16)

Research competes for the attention of managers, with many other seemingly more pressing matters grabbing their attention. Budget constraints inhibit a manager's ability to implement research findings, particularly when improvements requiring considerable funding are recommended.

Experts noted a tug of war between preserving the conservation integrity and allowing more visitors, and a reluctance in some PAs to permit any tourism activities. There is still an under-appreciation of visitor research among many PAs, often perceived as secondary in importance to environmental research with a lack of credibility in social sciences witnessed in some PAs.

"Why should we ask visitors? They may tell a lie" (this is an extreme but typical statement). They often perceive ecological data as key input, but not social ones. (Expert 1)

Discord between researchers' and management priorities can hinder the research outcomes' absorption into decision-making and planning. Expert 1 also noted that when researchers focus solely on their own academic goals and managers simultaneously only prioritise data for management decisions, PAs lose their attractiveness as research destinations.

Another inhibiting determinant is the timeframe required to collect, analyse and report research, seen as constraining decision-making. Results are often only conveyed to practitioners months or years after the fieldwork was done, and the connection between researchers and practitioners lost. Researchers often neglect to outline the implications of their research for policy. Expert 18 felt that many researchers do a poor job of articulating their findings in a way that managers can easily understand them.

When research scopes do not incorporate the area's broader recreational use challenges, it limits the number of applications of a specific piece of evidence.

... results of the research appear quite limited and is often restricted to very particular issues. Most of the time, it refers to very technical operations such as the size of the parking lots, the installation of showers or toilets, vans parking... A complete and integrated view of the recreational uses is often lacking. (Expert 2)

Experts also mentioned internal politics and research commissioned for the wrong reasons as factors leading to reduced uptake. Expert 13 believed it is rare to find research commissioned because of a genuine desire to improve services in protected areas. A few experts reported overuse of certain types of visitor research, such as visitor use statistics and visitor satisfaction data, at the expense of research delivering more in-depth findings. This was also seen in the response by Expert 3, who found a reluctance among older practitioners towards using new methods of obtaining data.



Determinants enabling utilisation include increased recognition of the role of research in decision-making; and practitioners' willingness to incorporate research recommendations into their work. A few experts mentioned observing an improvement in attitudes towards visitor data. Rising visitor numbers have led to a greater focus on visitor management, spurring demand for visitor research, and more sophisticated types thereof, benefiting planning activities, as noted by Expert 16:

But the role of visitor research has increased due to growing visitor numbers and changing budgeting systems. E.g. in some contexts managers can justify bigger budget needs due to increasing visitor numbers. At the same time they need to pay an increasing focus on visitor management, which needs information based on visitor research.

Close collaboration between practitioners and researchers, with PA agencies clearly articulating their research needs, and researchers fully comprehending the PA and practitioner context, increases the likelihood of uptake by management.

When researchers embed themselves in the context that they are studying and involve practitioners in the problem formulation, research design and data collection, then there should be a stronger likelihood of co-ownership of the research findings by practitioners. (Expert 20)

Researchers informed about the reality of PA management can contribute more effectively, often seeing issues that were not initially the object of the research during its execution. (Expert 9)

Support for the research in terms of funding; endorsement at executive, and institutional level; and a policy environment that encourages innovation, and change in visitor services, also positively influences research uptake.

Direct dissemination of research to managers, and the timing of research results becoming available - relevant at the time of a certain topical or political management issue - is further likely to either inhibit or enabling uptake into policy.

The full list of inhibitors and enablers identified is provided in Table 3.

**Table 3. Inhibitors and enablers identified through thematic analysis.**

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**Inhibitors of visitor research utilisation**

Competing (management) priorities.  
Lack of appreciation for / credibility of social science.  
Lack of budget to acquire research and implement recommendations.  
Lack of capacity and ability of managers to value, source, interpret and apply research effectively.  
Lack of practitioner skills in visitor management.  
Misalignment between researcher and PA management priorities.  
Negative attitudes towards tourism.  
Not adapting outputs to illustrate relevance to practitioner context.  
Focus on environmental management.  
Politics.  
Reluctance to try new methods of data collection.  
Research commissioned for the wrong reasons.  
Results cannot be reapplied elsewhere.  
Time required to collect, analyse and report research.  
Too much emphasis on certain types of visitor research.

**Enablers of visitor research utilisation**

A policy environment encouraging innovation and change in visitor services.  
Dissemination efforts.  
Improved collaboration and trust between researchers and practitioners.  
Increasing visitor numbers and improved budgets.  
Institutional support.  
PA agencies clearly articulating their research needs.  
Recognition of the importance of research.  
Relevance to local / regional policymakers.  
Researchers accommodating the reality of the PA.  
Support by a champion higher up.  
The maturity of the research collected.  
Timing of the research.  
Willingness (of practitioners) to collaborate.

***Results of round two – consensus about the most important determinants***

Each of the 37 items was viewed as having some kind of influence on visitor research uptake. However, 16 items were rated either very or extremely influential by the majority of experts. Five overarching categories of determinants emerged. Interestingly, experts believed that researchers' previous involvement in the management decision-making process was only somewhat influential. Compared to other items, it was rated one of the least important determinant overall. Opinions were also a bit more divided on the level of influence of previous research conducted in PAs that host large or increasing numbers of visitors, even though 55% of experts rated it as very or extremely influential. A similar pattern was noted when experts were asked whether a researcher's experience in working with PAs with large numbers of visitors made any difference, with the percentage of experts believing it to be very or extremely influential dropping to 45%.

Figure 3 summarises the categories, determinants and level of influence, as rated by the experts in round two.

Category	Determinants	Level of influence
Skills, capacity & awareness of practitioners	Capacity & ability to source, interpret and apply research effectively.	Very and extremely influential
	Practitioners' awareness of the importance of empirical research for better decision-making.	Very and extremely influential
	Practitioners' expertise in and knowledge of visitor management.	Very and extremely influential
Engagement between PA practitioners and researchers	Practitioners' willingness to collaborate with / listen to researchers.	Very and extremely influential
	The researcher's focus on practitioners' needs.	Very and extremely influential
	PA agencies clearly articulating their research needs to researchers.	Very and extremely influential
	Alignment between researcher's goals and PA management objectives.	Very and extremely influential
	Trust between researchers and practitioners.	Very and extremely influential
	The extent of the interactions between researchers and practitioners (personal informal contacts, participation in committees, workshops and meetings etc.)	Very and extremely influential
	Involvement of the practitioner in the problem formulation and research process.	Very and extremely influential
	Researchers taking the reality of the PA (in terms of budget, politics, resources, challenges) into consideration.	Very and extremely influential
	The availability of an internal (embedded) researcher in the PA for external researchers to collaborate with.	Very and extremely influential
	A researcher's level of experience in PA visitor management.	Very and extremely influential
Context of the PA	A researcher's level of experience in working with PAs that receive high numbers of visitors.	Very and extremely influential
	Involvement of the researcher in management decision-making.	Very and extremely influential
	Having a champion higher up in the organisation or government that supports the research.	Very and extremely influential
	A policy environment in the PA agency that encourages innovation, change and improvement in visitor services.	Very and extremely influential
	Availability of funding for implementing recommendations.	Very and extremely influential
	Internal politics within the PA agency.	Very and extremely influential
	The relevance of the research to local / regional policy decision-makers.	Very and extremely influential
	Institutional support of the research at all levels.	Very and extremely influential
	Precedence given to natural resource management with little focus on visitor management.	Very and extremely influential
	Competing management priorities.	Very and extremely influential
	Efforts by practitioners to acquire research.	Very and extremely influential
	Social acceptance of visitor research within the PA.	Very and extremely influential
	Organisational memory.	Very and extremely influential
Dissemination efforts of researchers	Large or increasing numbers of visitors experienced by the PA or agency (the more visitors, the more focus on using visitor research).	Very and extremely influential
	Practitioners' focus on sourcing or applying research for single use purposes - not approaching the acquisition of visitor research in a way that will result in multiple applications.	Very and extremely influential
	Adapting research outputs to practitioners' needs.	Very and extremely influential
Characteristics of the research	Researchers reporting results directly to managers through personal contact.	Very and extremely influential
	The dissemination efforts by the researcher (such as sending reports, having meetings with practitioners, using media outlets etc.).	Very and extremely influential
	The timing of the research – relevance at a specific point in time.	Very and extremely influential
	The type of visitor research collected.	Very and extremely influential
	The time associated with collecting, analysing and reporting research.	Very and extremely influential
	Research commissioned for the wrong reasons.	Very and extremely influential
If the research can be reapplied to other contexts.	Very and extremely influential	
Practitioners' willingness to try new methods of obtaining data.	Very and extremely influential	

Somewhat influential     
  Influential     
  Very and extremely influential

Figure 3. Utilisation categories, determinants and level of influence.

## **Discussion**

### ***Revised conceptual framework, categories of determinants and theoretical explanations***

All five categories of determinants appear to impact utilisation differently, and at different stages in the process. In Figure 4, a revised conceptual framework incorporating an enhanced understanding of the involved determinants and the impacted components is provided in the shaded blocks. Each category is discussed in detail next.

### ***Skills, capacity and awareness of practitioners***

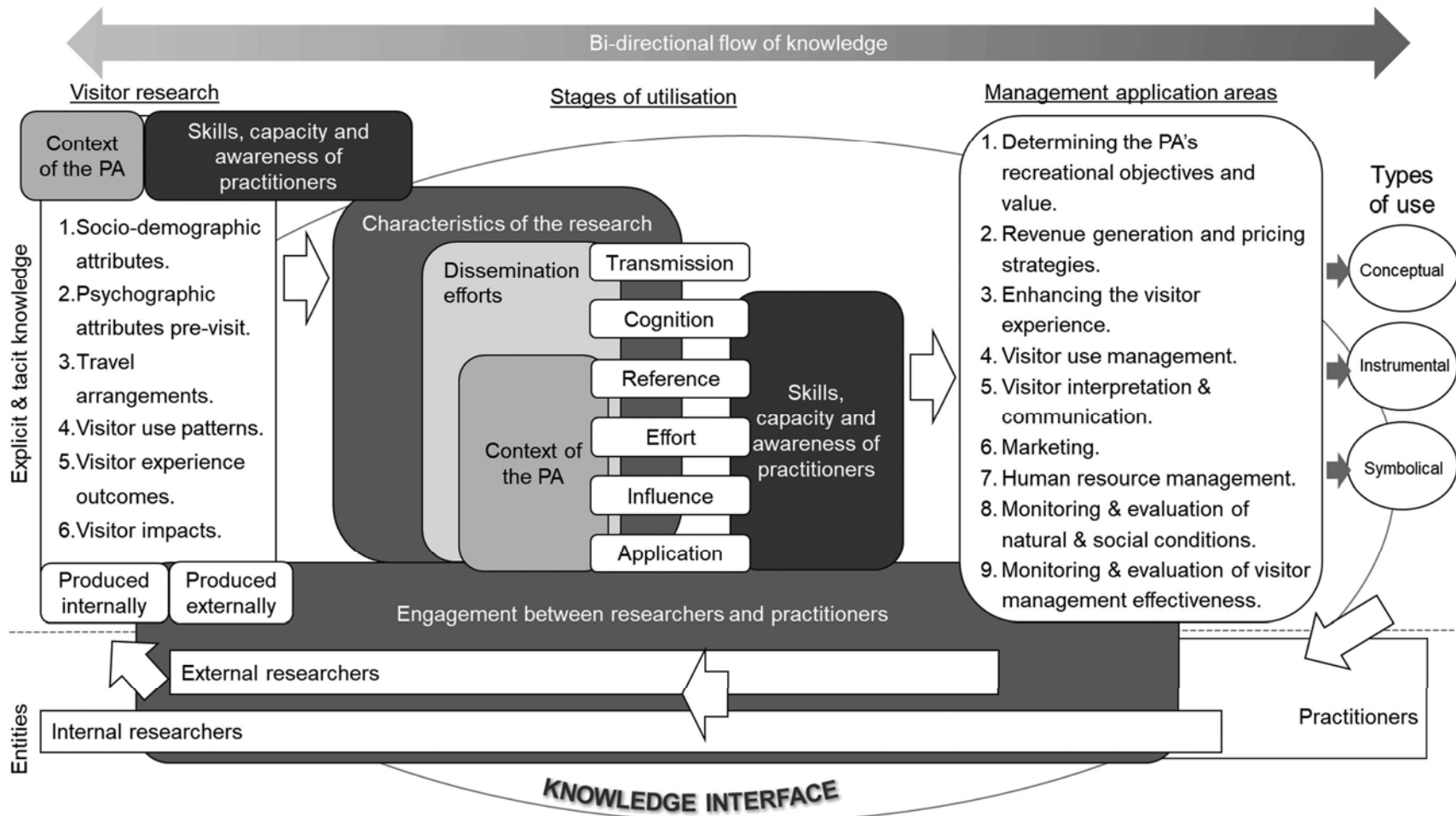
Our results confirmed that practitioners' capacity and ability, in terms of skills and resources to source, interpret, and apply visitor research effectively, have a considerable influence on research utilisation (Camisón & Forés, 2010). Experts mentioned several components impacted by this category – including the acquisition, transmission, cognition, interpretation and application of results.

It has long been recognised that a lack of skills and resources inhibits visitor management's successful implementation (Farrell & Marion, 2002). Similarly, the lack of understanding of the interactions between visitors and nature (Newsome et al., 2013) and a shortage of time and resources to effectively analyse and interpret visitor research (Darcy et al., 2007) contribute to a decreased capacity for visitor management in PAs. Scholars have noted uncoordinated efforts, and insufficient levels of visitor research being collected in natural areas (Booth, 2006; Buckley et al., 2008; Moore & Hockings, 2013), along with inadequate formal frameworks to assist with the management, dissemination and utilisation of knowledge across various departments within PA agencies (Darcy et al., 2007). The importance placed on the user and organisational context in this study, in terms of having capacity in their immediate working environment to absorb new knowledge, supports theory linking utilisation with the absorptive capacity of an organisation (Tanriverdi & Venkatraman, 2005). It is also strongly aligned to the 'organisational interest' knowledge utilisation theory (Landry et al., 2003).

Apart from having the capability to do so, there should be an awareness among PA practitioners of the importance of collecting new data for policy decisions in the first place, thereby encouraging new knowledge acquisition, along with the political will to try new data collection methods. This category further aligns with the 'demand pull' (Rosenberg & Nathan, 1982; Yin & Moore, 1988) theory where end-users recognise a need for, and actively source new knowledge. Open-minded practitioners effectively pull knowledge resources by identifying a real-life problem to be addressed with research.

### ***Engagement between PA practitioners and researchers***

Engagement between practitioners and research communities affects most of the components involved in utilisation, from the identification of research needs to the final stages of utilisation. The high levels of influence seen in the items representing engagement between practitioners and researchers in this study attest to the contemporary importance of the 'interaction explanation' knowledge utilisation theory (Heinsch et al., 2016).



**Figure 4.** Revised conceptual framework explaining the utilisation of visitor research in PAs.

Advocating for stronger linkages between the producers and end-users of knowledge increases the likelihood of knowledge production that correspond with end-users' needs (McCool, 2012), encouraging practitioner support and uptake in policies and practices (Roux et al., 2006). In our study, five extremely influential items talk directly to such collaborative actions: Researchers' focus on practitioners' needs; PA agencies clearly articulating their needs to researchers; alignment between researchers' goals and the PA agency objectives; trust between practitioners and researchers; and the level of interactions between practitioners and researchers. Managers need to drive applied research by making their needs known to researchers (Manning, 2011), while researchers' involvement in problem definition ensures the problem identified is suitable for scientific study (Manning, 2011). Purposeful relationships between academia, practitioners and decision-makers encourage more management-relevant research and can lead to the development of wisdom that more effectively addresses the complexities practitioners have to deal with (McCool, 2012). Constant interaction helps build both parties' capacity to collaborate more effectively (van der Arend, 2014), creating trust between researchers and practitioners. Misalignment between the PA agency objectives and researchers' goals (McCool, 2012) can be overcome by employing appropriate mechanisms (Xiao & Smith, 2007). In this regard, the interaction explanations overlap with that of the organisational interest as the alignment with organisational needs and types of policy domains describe an organisational context (Landry et al., 2003). Another very influential item, involving underlying beliefs or intentions (a practitioner's willingness to collaborate), arguably describes an organisational interest rather than an interaction between the two parties.

Four other engagement items, all leaning towards being very influential, are mentionable. Firstly, the involvement of practitioners in the research problem formulation and research process; secondly involving researchers' awareness and consideration of the constraints and challenges of a PA, such as financial barriers and resource limitations; thirdly recognising the important mechanism linking external researchers to management-relevant research, namely, the presence of embedded researchers (Roux et al., 2019); and fourthly, a researcher's level of experience in visitor management again speaks to an intimate knowledge of the PA's managerial realities. The level of influence of all four items suggests increased knowledge of the context of the PA and more active involvement in management activities among researchers, along with greater involvement of practitioners in the research process (sometimes facilitated through embedded researchers), effectively draw the two communities closer together, and result in more effective, actionable research, being more likely to be adopted.

### ***The context of the PA***

The organisational and social contexts in which governmental organisations such as PAs operate and inherent beliefs held by end-users all collectively form part of the group of explanations called organisational interest (Landry et al., 2003). In this study, a number of interesting and important organisational features emerged as enablers of utilisation. Of the 13 items grouped under this category, six were regarded very or extremely important. Evidently, experts felt the support of an individual higher up in the PA's ranks contributes tremendously towards the research being applied into policies and practices. This finding is similar to what Hemsley-Brown (2004) concluded about leadership support of the research

at a sufficiently high level. In our study, experts believed institutional support at all levels and relevance to local or regional policy decision-makers increased the chances of research being taken up in policy decisions. Furthermore, policy environments that encourage adaptive management principles in visitor management generally regard research as an important component in decision-making (Marion, 2016; Newsome et al., 2013). Internal politics is known to have an effect on the use of research (Ottoson, 2009), along with the availability of funding (Cherney et al., 2012a; Landry et al., 2001).

Other critical contextual elements highlighted in this study include the competing priorities of practitioners, neglecting implementation of research findings, coupled with a PA's lack of focus on visitor management when compared to natural resource management priorities. Social acceptance of visitor research within the PA can also hamper application. Information used for decisions taken in the past (organisational memory) was considered another important agent in the utilisation of visitor research, albeit not one of the top determinants. All of the determinants described above relate to the 'organisational interest explanations'. In addition, practitioners' acquisition has also been shown to be a noteworthy determinant, supporting the demand pull theory (Rosenberg & Nathan, 1982; Yin & Moore, 1988).

This category impacts the acquisition of research through support at various levels and demand pull by practitioners. It also impacts the more advanced stages of utilisation through an environment welcoming change, availability of funding, politics, etc.

### ***Dissemination efforts of researchers***

The 'dissemination theory' of knowledge utilisation focusses on researchers' efforts in transferring knowledge to practitioners by first identifying noteworthy results to be shared and then transmitting the actual information to end-users (Belkhdja et al., 2007; Landry et al., 2001). This study's results indicated that dissemination is an important determinant in visitor research utilisation in PAs. It should be mentioned that, of the three items included in this category, only one exhibited a mean score of above four. The adaptation of research outputs to suit end-users, such as making reports more easily digestible to practitioners or delivering reports in line with practitioner's timelines, was seen as the most influential dissemination action affecting knowledge utilisation. This finding corresponds with numerous other studies which found that adaptation of research outputs into products understandable by managers and aligned to the organisation's challenges is a critical determinant (see Amara et al., 2004; Cherney et al., 2013; Landry et al., 2001). In fact, such efforts act as important bridges to help overcome the research-management gap encompassed in the 'two communities' metaphor (Amara et al., 2004). Traditional dissemination efforts of sending reports and having meetings with practitioners and direct transmission to managers were also regarded as important, but less so than the adaptation of outputs. Dissemination efforts could arguably influence all stages of utilisation, from transmission to influence (Figure 4).

### ***Characteristics of the research***

Certain attributes of the research may influence its potential for utilisation. This concept aligns to the 'engineering explanations' (Amara et al., 2004). In our study, both the category

of research collected (visitor use statistics, visitor demographics, etc.) and the length of time it took to collect, analyse and report the research were viewed important determinants. However, one attribute stood out as very important: the timing of research results becoming available affected its likelihood for uptake in policies and practices. Research results are timed right in two ways – one being accidental where the research just happened to be produced at a time when managers needed it. The other involves collaboration where practitioners communicate their needs to researchers, who then actively pursue and prioritise intelligence useful to management. The latter linkage mechanism corresponds with the interaction explanations. Numerous utilisation components are impacted by research characteristics, including the acquisition, transmission, cognition and application of research.

It would appear the six major groups of knowledge utilisation explanations all have some level of relevance in the context of visitor research in PAs. The organisational interest and interaction explanations underpin many of the determinants regarded as very and extremely influential in our study. In this regard, we make recommendations to overcome such barriers.

### **Conclusion and recommendations**

Protected area managers are increasingly expected to base decisions on scientific evidence taking into consideration the variety of societal changes; growing and varied demand for providing recreational opportunities; uncertainty and complexity about the outcomes of their decisions; as well as limited organisational capacity (McCool et al., 2007). The practitioner and research communities have struggled to cope with these societal shifts (Cervený et al., 2020). Yet, this study confirms other authors' beliefs that protected areas are not optimally applying available visitor research (Buckley et al., 2008; McCool, 2012); that the process of utilisation is complex (McCool, 2012), and involves many determinants that inhibit or enable it (Hemsley-Brown, 2004).

This article combines theory and empirical data obtained through expert interviews to improve the current fragmented understanding of the phenomenon of research use in tourism, and protected areas. It makes an original contribution by conceptualising the dynamics and components involved in protected area research uptake. The outcomes contribute to the body of literature investigating the extent to which sources of evidence are utilised in management decisions, known as knowledge utilisation (Xiao & Smith, 2007). The five categories of determinants identified confirm the contemporary relevance of the six prominent streams of theories identified by other scholars: push and pull models; dissemination models; engineering explanations; organisational interest explanations; the two communities metaphor; and the interaction explanations (from Amara et al., 2004; Belkhdja et al., 2007; Landry et al., 2001). Although this study's determinants align with several theoretical explanations, it would appear as if the organisational interest and interaction explanations (Landry et al., 2003) are most influential in the context of protected areas. Contextual differences between this and previous studies are observed through findings that reveal PA's lack of focus on visitor management, compared to natural resource management priorities; lack of practitioner skills in visitor management; and challenges in the social acceptance of visitor research within the PA context.



An enhanced understanding of the determinants is important for researchers and practitioners with an earnest desire to help PAs navigate the intricate challenges of visitor management. By identifying and prioritising determinants, a number of practical recommendations can be made to close the research-practice gap. The expert feedback demonstrated that the demand for knowledge, understanding and wisdom in practice could only be met by advocating for strong linkages between the researcher and practitioner communities. Meaningful, location-based partnerships support management-relevant research and generate wisdom by applying lessons learnt (Cervený et al., 2020). Building PA staff's capacity is equally important to ensure the research transmitted to PAs does not go to waste. Additional recommendations are provided in Table 4.

**Table 4. Key propositions put forward and associated recommendations.**

Key proposition	Recommendations
Practitioners' capacity and ability to source, interpret, and apply visitor research can influence research uptake.	Build capacity through: <ol style="list-style-type: none"> <li>Formal training and professional development in tourism management (Hudson, 2013).</li> <li>Social interactions between researchers and end-users that facilitate access to existing research; improve interpretation and application of research outputs; and sensitise academics to practitioners' needs. This encourages bi-directional learning that indirectly raises utilisation levels (van der Arend, 2014).</li> </ol>
Stronger linkages are required between the researcher and practitioner communities.	<ol style="list-style-type: none"> <li>Pursue long-term strategic partnerships between PAs and research institutions.</li> <li>Encourage engagement that surpass transactional activities (e.g. meetings and reports), moving towards relationship-focused approaches where shared goals are jointly pursued.</li> <li>Collaboratively evaluate the availability and efficacy of current knowledge interface mechanisms.</li> <li>Invest time and resources to deliberate and communicate research agendas to researchers in clear and uncertain terms, in order to encourage management-relevant research.</li> </ol>
The organisational and social contexts in which PAs operate, along with inherent beliefs of end-users, can influence research uptake.	<ol style="list-style-type: none"> <li>Use knowledge brokers, such as internal researchers (Roux et al., 2019), to sensitise researchers to the user's context, research problems, as well as challenges experienced at destination level.</li> <li>Increase awareness among practitioners of the importance of visitor research for decision-making.</li> <li>Practitioners should pursue high-level support for priority projects (Hemsley-Brown, 2004).</li> </ol>
Dissemination of research outputs is an important determinant in visitor research utilisation.	<ol style="list-style-type: none"> <li>Research outputs should be modified to suit the end user's context (Landry et al., 2001).</li> <li>Researchers should illustrate where and how the results can be applied to enhance decision-making.</li> <li>Complex research outputs have to be screened, categorised and adapted before being absorbed (Hjalager, 2002).</li> </ol>
Multi-functional research are more likely to be absorbed.	Studies should be designed in ways that allow for multiple applications of the data collected. This will require practitioner awareness of other research gaps in the organisation or linkages with intermediaries who possess a broader view of the PA's organisational goals and recreational landscape.
The timing of research results affects its uptake in policy.	Practitioners should communicate their needs to researchers ahead of time, who then actively pursue and prioritise intelligence useful to management.

This study has several limitations. Its focus was limited to studying the movement of knowledge from researchers to practitioners. The small number of experts consulted cannot be assumed to represent the larger population's views as their opinions are subject to personal bias which could have influenced the study results. The inclusion of a large proportion of external researchers and consultants may also have biased the results. Further

research to empirically test the effects of the five categories of determinants on overall levels of utilisation is necessary to appraise its impact and confirm its relevance in the context of PA visitor management. More in-depth studies could be considered, such as the difficulties and challenges encountered on both sides of the two communities. Future studies could also examine contextual differences between countries, regions and PA agencies.

We trust this article's results will stimulate further discussion around the mechanisms for improving visitor research utilisation in PAs.

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This article forms part of a series of articles from an unpublished article-based PhD thesis (available from the University of Pretoria). It should be noted that the lead author is employed by a protected area agency. For more details on the authors' measures to reduce any bias introduced as a result of this employment, please refer to section 3.5.

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