

Determination of visitors' intentions to revisit a natural history museum in a national park

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The Kruger National Park (KNP) is regarded as the flagship ecotourism destination in South Africa. It showcases unique fauna and flora and natural features and as an ecotourism attraction it also hosts a number of facilities that cater to visitors' needs. One such facility is the Letaba Elephant Hall: a natural history museum located in the Letaba rest camp. The facility promotes education related to elephant biology, human–elephant relations, and conservation. Museums, require visitors to remain financially sustainable and to promote education and in the case of the Letaba Elephant Hall, to promote conservation. However, museums often have a negative connotation of being boring, with poor visitor engagement, and overly theoretical displays. These potentially poor experiences may influence visitor satisfaction, which, in turn, could affect the visitor's post-visitation intentions. This study adopted the theory of planned behaviour and the expectancy-disconfirmation paradigm to conduct an exploratory quantitative survey to measure visitors' experiences and how those experiences might influence their intentions to revisit the Letaba Elephant Hall. A total sample of 163 was achieved and results were analysed descriptively, followed by the development of binary categorisations. Chi-square tests were used to test the identified hypotheses, followed by multiple logistic regression to determine whether any significant relationships between variables exist.

Implications for conservation: The results provide an overview of the visitor profile and descriptive experience results, as well as an indication of significant relationships that exist between expectations, experiences, perceived quality, satisfaction, pleasure, and revisit intentions. Understanding who museum visitors are and managing their experiences are pivotal in ensuring that the efficient functioning of these facilities are carried out such as effective education, which in the case of the Letaba Elephant Hall, may result in authentic learning and the promotion of elephant conservation. The study provides insight into possible ways of enhancing the visitor experience at the Letaba Elephant Hall as a natural history museum, which could also be transferred to other similar interpretation centres in the KNP and other protected areas.

Keywords: interpretation centre; museum; national park; revisit intentions; visitor service quality.

Introduction

South Africa is blessed with unique fauna, flora, and natural and cultural landscapes that serve as the core focus of conservation in protected areas such as those national parks managed by South African National Parks (SANParks). Tourists and park visitors are vital stakeholders in the sustainability of national parks as they serve as essential sources of revenue, ensuring the economic sustainability of these parks. Tourists as consumers are discretionary, having multiple options in terms of destinations and attractions to choose from and as such their subjective experiences are interceded by predetermined expectations leading to experiences that conclude in perceptions of quality. National parks such as the Kruger National Park (KNP) have supplemented their service offering to tourists and visitors through the provision of facilities such as the Letaba Elephant Hall, designed as a platform to promote learning and conservation of the world's largest terrestrial animal. However, neither much is known about the visitor market that these museums cater to, nor much is known about the dynamic experiences that the visitors have at these museums. By means of the theory of planned behaviour (TPB) and the expectancy-disconfirmation paradigm (EDP), this study sought to answer eight predetermined hypothesis related to visitor intentions to revisit a natural history museum in a national park.

Literature review

Tourism is often touted as the world's largest industry. Since the dawn of democracy in South Africa in 1994, the industry has presented a sustainable growth in terms of visitor numbers and a

positive socioeconomic contribution to the country's economy (Rasool, Maqbool & Tarique 2021), albeit with a decline in the period 2020–21 because of the impact of the coronavirus disease 2019 (COVID-19) travel restrictions. One of South Africa's best-selling features is its natural beauty and wildlife and numerous tourists visit the country annually to experience the natural environment with its dynamic ecosystems and landscapes. These aspects form the mainstay of the South African tourism industry and generate significant revenue (South African Tourism 2019a, 2019b).

South African National Parks is the custodian of unique and sensitive ecosystems in the country, including a significant portion of South Africa's nature-based products through a network of national parks. At present, SANParks manages over four million hectares of protected land consisting of 19 national parks that are responsible for protecting unique biodiversity, heritage attractions, and landscapes (SANParks 2011). Each of these national parks has been established to conserve unique features, and each park is required to have a specialised management plan, especially in relation to the tourist and visitor market, which it attracts (Hermann 2013). These management plans entail the management of three core functions, namely ecotourism, conservation, and constituency building (Department of Forestry, Fisheries and the Environment 2022; Hermann 2013).

Ecotourism is the 'responsible travel to natural areas that conserve the environment, sustain the well-being of the local people, and involve interpretation and education' (TIES 2022:1). For ecotourism to be practised effectively, tourists' activities need to occur in a natural or wildlife setting and therefore it involves nature-based activities. Tourists are drawn to visually appealing environments, which could incorporate elements such as fauna and flora (Kruger, Viljoen & Saayman 2014), geographical features (Grobelaar, Bouwer & Hermann 2019), and sites of historical importance (Deng, King & Bauer 2002; Fennell 2002). From this perspective, sites with heritage significance in a protected area such as a national park may be considered as ecotourism attractions.

Heritage is known as the presentation of the past in the present through relics, memories, and history. It is the full range of our inherited traditions, monuments, objects, and culture. Most important, it is the range of contemporary activities, meanings, and behaviours that we draw from them. Heritage is therefore not only directly related to the preservation of those relics, memories and history but also the use thereof to create a resource that may be exploited for other purposes such as education and recreation by potential users such as tourists. This use may in turn result in increased levels of preservation (Ashworth 2004) and in the case of a national park, conservation. For heritage to be used as a resource, it needs to be demand-driven. This creates a management challenge, namely to ensure that the heritage attractions are constantly augmented to cater for and to satisfy changing needs (Ashworth 2004).

The effective management of heritage resources for ecotourism consumption is becoming increasingly crucial (De Rojas & Camarero 2008). This could be especially relevant to national parks that derive a large portion of their income from the provision of ecotourism services that rely on the heritage assets conserved in these parks. The heritage assets in national parks in South Africa range from natural landscapes and wildlife to man-made facilities such as interpretation centres and museums. The latter two not only showcase exhibitions but may also accommodate other services such as seminars, bookshops, curio shops, restaurants and cafes, and other facilities (De Rojas & Camarero 2008). As with most consumer services, visitors have expectations, and it is the responsibility of the service provider, such as a museum or interpretation centre, to ensure that their expectations are met (Phaswana-Mafuya & Haydam 2005) to ensure visitor satisfaction and positive marketing. It is therefore vital to determine and understand those expectations and perceptions.

The KNP, which is the focus of this study, is the largest national park managed by SANParks and it is considered to be the flagship park of the country, attracting over 1.8 million visitors annually, prior to the COVID-19 lockdown in 2020 (SANParks 2020:113). Ecotourism services are a major pillar of economic activity for the KNP, but Engelbrecht, Kruger and Saayman (2014) found that there was a gap between what the visitors to the KNP expect and what they experience in terms of interpretation and education activities (part of interpretation); thus, the core element of ecotourism, namely education is seemingly overlooked. This is a dilemma, as interpretation is seen as less important in the strategic plan for commercialisation, which forms a significant part of ecotourism services. Planning for interpretation is therefore not considered to be a priority in SANParks and especially not in the KNP, although it is home to a number of museums, both cultural and natural. A thorough study is required of the services offered by these interpretation facilities in order to enhance the overall service experience of visitors. One of the largest of these museums is the Letaba Elephant Hall, located in the Letaba rest camp in the centre of the reserve. The Letaba Elephant Hall houses a number of exhibits associated with elephants, including information on elephant evolution, behaviour, human–elephant relations, a full skeleton, multiple skulls and tusks of some of the largest tuskers that have lived in the KNP, and other displays that promote elephant conservation. Figure 1 depicts one of the displays in this museum.

Ballard et al. (2017) observed that natural history museums, such as the Letaba Elephant Hall, are obvious settings for bridging conservation science and education through their unique combination of specimen collections, scientific and public education expertise, and wide audience reach and trust. To achieve this a museum requires visitors, and therefore effective marketing, which Lewis (2012) has noticed as being remarkably absent in museum research. Not attracting visitors may result in a loss in revenue (for the park) and the ultimate defeat of the purpose of the museum's role in education and



FIGURE 1: Elephant Hall display.

conservation awareness creation. Therefore, it is clear that there is a need for marketing research in this field pertaining to visitor services and visitor perceptions in order to provide effective experiences that promote learning, conservation and ultimately visitor satisfaction (Basset 2012).

According to the theory of planned behaviour (TPB), human behaviour is influenced by intentions, which are determined by three factors: attitudes, subjective norms, and perceived behavioural control. Therefore, the premise exists that individuals (museum visitors) make logical, reasoned decisions to engage in specific behaviours by evaluating the information available to them (Ryan & Carr 2010). Abbas et al. (2021) found that a direct relationship exists between perceived service quality, satisfaction and revisit intentions. Although the TPB has been criticised as being outdated in some fields (Sniehotta, Presseau & Araujo-Soares 2014), it still serves as a grounding for further theories and it is widely accepted that the gap between visitors' expectations and their experiences may produce a feeling of satisfaction or dissatisfaction, which has been further highlighted by the expectancy-disconfirmation paradigm, (EDP). As a result, two broad groups of customers can be distinguished: those who are satisfied and those who are dissatisfied (Oliveri, Polizzi & Parroco 2019).

Sustainable heritage tourism cannot be achieved without guaranteeing tourist satisfaction (Asmelash & Kumar 2019); therefore, it is imperative that the custodians of these sites understand and manage visitor satisfaction. However, museums often do not provide positive experiences, and visitors may experience feelings of boredom, poor interaction with exhibits, and be overwhelmed by the amount of reading to be performed (Brida, Meleddu & Pulina 2016). Such museums are sometimes associated with poor interpretive and learning environments and they often aim to rectify this by seeking alternative means of engaging with visitors, which could include 3D printing of artefacts for visitors to engage with (Wilson et al. 2018), edutainment activities, and virtual reality as well as appropriately designed exhibits for families

with children to aid learning experiences (Brida et al. 2016). The benefits of achieving visitor satisfaction through positive visitor experiences could cascade further into loyalty, which reduces a destination's marketing costs, increases income, and positively influences future profitability (Hasan et al. 2019).

Studies on visitor satisfaction at heritage sites, including national parks, have been conducted globally (Arabatzis & Grigoroudis 2010; Damanik & Yusuf 2022). Also included are world heritage sites (Phaswana-Mafuya & Haydam 2005; Su, Hsu & Swanson 2017), urban museums, historic houses and towns (Chen & Chen 2010; Huh, Uysal & McCleary 2006; Poria, Reichel & Biran 2006), and museums and memorials (Martin-Ruiz, Castellanos-Verdugo & De los Angeles Oviedo-García 2009). Each of these studies has contributed findings in terms of visitors' expectations, experiences and satisfaction. Although they provide valuable insight into the dynamics of visitor experience, they do not focus on visitors' experiences per se and the potential effect of those experiences on visitors' intentions to revisit a natural history museum such as the Letaba Elephant Hall.

Previous marketing research in the sphere of heritage attractions focussed predominantly on determining satisfaction by means of analysing the influence of the emotional domain as a determinant of visitor satisfaction (Ali, Amin & Cobanoglu 2016). This emotional domain gives rise to the affective domain or the emotional approach to understanding visitors' experiences (De Rojas & Camararo 2008). Rojas and Camarero (2008) emphasise the importance of a better understanding of both cognitive and affective opinions when assessing visitors' experiences. The cognitive domain refers to the assessment of satisfaction from a quality viewpoint, and it can also be seen as the assessment of conformation versus disconfirmation (De Rojas & Camararo 2008). In an endeavour to combine these two domains, De Rojas and Camararo (2008) have proposed a visitor experience, mood and satisfaction model in a heritage context. Based on the foundation provided by De Rojas and Camararo (2008) and Chen and Chen (2010) related to the EDP theory and the adoption of TBP the following hypotheses related to visitor satisfaction in a heritage context are proposed:

- **Hypothesis 1 (H1):** Expectations positively influence service experiences.

An understanding of visitors' experiences is a vital component of the process of evaluating consumers' satisfaction with experiences and services (Chen & Chen 2010). It is therefore important to understand these visitors' experiences better. The problem with heritage attractions, and particularly museums and interpretation centres, is that the purpose of these attractions is often misunderstood. De Rojas and Camararo (2008) propose that these sites may serve more than one purpose in terms of visitors' experience, and that these sites are primarily associated with the purpose of exhibiting the past, but that, an increasing number of visitors now also seek experiences associated with elements such as leisure, culture, education and social interactions (De Rojas & Camararo 2008).

- **Hypothesis 2 (H2):** Service experiences positively influence perceived quality.

The manner in which customers perceive quality is considered the ultimate judgement by a consumer. As a result, satisfaction, dissatisfaction and perceived quality are highly interrelated (De Rojas & Camararo 2008). The service experience occurs from customer participation in tourism activities (Chen & Chen 2010). Confirmation and disconfirmation occur when a service either surpasses or fails to meet the expectations of a customer, thus influencing the perceived quality (George 2011; Oliveri et al. 2019).

- **Hypothesis 3 (H3):** Perceived quality positively influences visitor satisfaction.

When confirmation occurs, a positive relationship ensues (De Rojas & Camararo 2008). When customers' pre-travel expectations or pre-visit expectations are compared with their post-travel experience and these experiences exceed the expectations, satisfaction occurs (Akama & Kieti 2003). The perceived quality has significant, positive and direct effects on tourist satisfaction (Wang, Tran & Tran 2017).

- **Hypothesis 4 (H4):** Perceived quality negatively influences disconfirmation.

When disconfirmation occurs, a customer relationship is considered negative (De Rojas & Camararo 2008). When quality is perceived to be lower than expected, it may be considered that that experience disconfirms the expectations of the customer.

- **Hypothesis 5 (H5):** Perceived quality positively influences pleasure.

In a cognitive context, pleasure appears to be predominantly an external feeling closely related to cognitive experience (quality). Smith and Diekmann (2017) view pleasure as the short-term hedonic experience sought by tourists with the feeling of happiness as the totality of their hedonic moments (Ryan & Deci 2001). When visitors experience higher levels of quality, they also experience greater levels of pleasure (De Rojas & Camararo 2008).

- **Hypothesis 6 (H6):** Pleasure positively influences satisfaction.

Ali et al. (2016) found that a relationship exists between service experience and emotions. These emotions could include elements such as joy, love and positive surprise (Prayag et al. 2017). The higher the levels of experience and emotions the visitor feels, the greater the levels of satisfaction (De Rojas & Camararo 2008).

- **Hypothesis 7 (H7):** Satisfaction positively influences visitor intentions.

As proposed by the TPB and EDP, the higher the levels of visitor satisfaction, the greater the possibility of intentions to revisit in future (Abbasi et al. 2021; De Rojas & Camararo

2008). When a tourist experiences a service as being satisfactory, there is a strong possibility that the tourist will revisit frequently in future, and also promote the service provider through word-of-mouth-marketing (Wang et al. 2017). Thapa and Lee (2017) found that the quality of staff and information created visitor values and influenced their revisit intentions at a national park. Revisit intention, and thus frequency of visitation, has also been attributed to enhanced place attachment (to camps in the KNP) (Douglas et al. 2019). In terms of other studies in national park contexts, most have focussed on the relationship between motivations (Adam, Adongo & Amuquandoh 2019; Kruger, Saayman & Hermann 2014), environmental concerns, and ecotourism experiences mediated by motivations (Huang & Liu 2017), place attachment (Isa, Ariyanto & Kiumarsi 2020) and visitor intentions, with not much attention given to satisfaction influencers and revisit intentions. In a further analysis of visitor intentions and visitor experiences in national parks, Adam et al. (2019) found no relationship between the demographic variables of sex, age, marital status and formal educational and revisit intention.

- **Hypothesis 8 (H8):** Disconfirmation negatively influences visitors' revisit intentions.

Favourable intentions may be associated with customers' loyalty and willingness to return to a destination (Chen & Chen 2010), and thus higher levels of tourist turnover (Akama & Kieti 2003). However, Alegre and Garau (2010) caution that it is often the elements that influence dissatisfaction that are overlooked in tourism research. Dissatisfied customers would probably not return to a destination or attraction and might also spread negative word-of-mouth messages to other potential visitors (Reisinger & Turner 2003).

It is of vital importance to understand visitors' experiences at tourism attractions in order to produce satisfactory tourism products and services. Prior research into the field of visitors' experiences has been conducted, but earlier studies primarily analysed visitors' experiences from an emotional domain and did not analyse experiences from either the cognitive or the affective spheres.

Research methods and design

This research followed a quantitative approach by means of a survey research design. Data were collected by means of a structured questionnaire. The questionnaire developed for this study consisted of two sections, namely Section A, which captured information relating to the demographic profile of respondents and Section B, which measured constructs relating to visitor experiences. The latter section was based on 24 experience variables. The study was based on an adapted survey developed from previous validated instruments by De Rojas and Camararo (2008) and Chen and Chen (2010).

All visitors to the Letaba Elephant Hall during the survey period between 01 October 2019 and 30 June 2020 were

included in the study. In order to obtain a representative sample, the survey period consisted of both midweek and weekend days. At each museum, physical questionnaires were made available to visitors who placed them in a sealed box after having completed them. In addition to the given passive fieldwork, the primary researcher, museum officers, honorary rangers and work-integrated learning students actively engaged with visitors. This convenience sampling technique progressed well until the lockdown and closure of SANParks facilities to the visitors in March 2020. Once the national lockdown restrictions had been lifted and travel opportunities had reopened, fieldwork continued. It was completed in June 2020 and 169 questionnaires were returned to the researcher for analysis. After data cleaning and elimination of incomplete questionnaires, the final sample stood at 163.

Data were captured utilising Microsoft Excel™, while Stata 17.0 was used for data analysis. The analysis consisted of two stages. The first stage involved generating a general profile of respondents by using demographic and behavioural information. In the second stage, experience constructs were analysed using frequency tables, means, and standard deviations (SD). The results of the statistical analysis are discussed in the subsequent section.

Ethical considerations

The study was approved by the Tshwane University of Technology Faculty of Management Research Ethics Committee with ethics number FCRE2018/FR/07/011-MS and at SANParks with reference number VEC2018/09.

Results

Demographic and behavioural results

The results indicated that, in terms of gender, there were more female respondents (64.0%) than males (34.0%). Respondents were generally evenly distributed in terms of age, with the largest age bracket being 18 years–29 years (22.2%) and the smallest age bracket being those older than 70 years (7.4%). The mean (average) age was 44 years. The language most spoken by respondents was English, followed by Afrikaans and Tsonga. The majority of respondents at the Letaba Elephant Hall were married (53.0%) and had a post-school qualification (82.5%), mostly a diploma or first degree (39.9). Gauteng (28.0%) was the home province of most respondents, followed by Limpopo (18.1%). In terms of income there was an uneven distribution, as the facility appeared to appeal slightly more to lower-income visitors (37.4%) than to higher-income ones (31.9%). Although this distribution is uneven, it does indicate that the Letaba Elephant Hall appeals to diverse income groups.

The profile of the respondents in this study was generally in line with previous research performed at the KNP (Botha, Saayman & Kruger 2016; Kruger & Saayman 2014; Kruger et al. 2014, 2019). Certain differences should however be observed. The aforementioned researchers found that more male visitors visited the KNP compared with female visitors,

TABLE 1: Respondents' behavioural profile.

Variable	Frequency	Percentage
Average number of times visiting other museums per year		
Once	47	27.8
Twice	45	26.8
Three times	28	16.6
Four times	20	11.8
Five times	11	6.5
Six times	6	3.6
Seven and more times	12	7.2
First time visiting KNP?		
Yes	46	25.1
No	137	74.9
Where did you hear about the museum?		
SANParks website	26	13.8
Family and friends	64	34.0
Previous visit	63	33.5
Facebook and Twitter	4	2.1
Magazine	1	0.5
Other	30	16.0

KNP, Kruger National Park; SANParks, South African National Parks.

and that Afrikaans was the home language of most visitors, followed by English (in some cases, the languages were closely distributed). However, previous research on museums found that visitors were mostly females (Brida et al. 2016; Sheng & Chen 2012).

From Table 1 it can be seen that visitors generally visited museums once or twice a year. The majority of the respondents had previously visited the KNP and had heard about the Letaba Elephant Hall through family and friends, as well as through previous visits. These results were partly confirmed by the existing literature, for example, Kruger et al. (2014) found that the majority of visitors to the KNP had visited it previously. Gruen and Lund (2019) indicated that visitors to a museum usually heard about it through word of mouth from family and friends.

Descriptive results

This section provides details of 23 constructs associated with visitors' expectations, perceived quality, satisfaction and visit intentions, as well as 8 reflective variables related to service experience. Respondents were requested to state the importance of these 31 items on a five-point Likert scale where 1 represented *strongly disagree* and 5 represented *strongly agree*. The factor of pleasure with its associated items was measured using a semantic-differential scale where contradicting feelings were measured on a scale of 1–10, for example, 1 = *Content* and 10 = *Angry*. Table 2 provides an overview of these results.

In Table 2, the percentages for item measures are presented. The subscale visitors' expectations had a total of eight items, where all the items had a mean above 3.5 with a minimum mean of 3.63 and a maximum of 4.45. This shows that the responses regarding the expectations skewed positively. This is also confirmed by the frequencies percentage where higher proportions were towards agree and strongly agree.

TABLE 2A: Table of means, standard deviations and percentage of responses.

Research Measures	Number of obs.	Mean	Standard deviation	Percentage of responses per item				
				SD	D	N	A	SA
Expectations								
I expect that the centre will have professionals available and willing to offer me information.	178	3.972	0.941	2.2	3.9	20.2	41.6	32.0
I expect that the centre will have professionals available and willing to respond to my needs.	176	3.903	0.880	1.7	5.1	18.2	51.1	23.9
I expect to receive good treatment from the employees.	173	4.364	0.665	0.0	1.2	6.9	46.2	45.7
I expect this centre to have modern, technologically advanced installations.	175	3.634	1.052	3.4	10.9	26.9	36.6	22.3
I expect that the centre will have informative displays with adequate lighting and use of space.	177	4.390	0.691	0.0	0.6	10.2	39.0	50.3
I expect that the content of the exhibition will be different from that of other centres.	175	4.286	0.702	0.0	0.6	12.6	44.6	42.3
I expect that the centre will offer me an interesting educational experience.	177	4.446	0.611	0.0	0.6	4.5	44.6	50.3
I expect that the displays will be of high cultural and historical interest.	171	4.333	0.790	1.2	0.6	11.1	38.0	49.1
Perceived quality								
The treatment received from the centre employees has been excellent.	173	4.214	0.880	1.7	0.6	17.9	34.1	45.7
The centre's employees demonstrated their willingness at all times to look after me correctly.	175	4.109	0.913	1.1	2.9	21.1	33.7	41.1
The displays in the centre are better than those at other centres of museums I have visited.	173	3.948	0.816	0.6	1.7	27.2	43.4	27.2
I evaluate the informative displays positively.	176	4.420	0.580	0.0	0.0	4.5	48.9	46.6
I evaluate the atmosphere created in the centre positively.	168	4.173	0.558	0.0	0.0	8.3	66.1	25.6
I consider the visit to the centre to have been a good educational experience.	174	4.477	0.566	0.0	0.0	3.4	45.4	51.1
I consider the exhibition of the objects and materials in the centre to be excellent.	170	4.465	0.607	0.0	0.6	4.1	43.5	51.8
Satisfaction								
This is one of the best interpretation centres I could have visited.	173	4.035	0.799	0.0	3.5	19.7	46.8	30.1
I am pleased with my decision to visit this interpretation centre.	175	4.457	0.584	0.0	0.0	4.6	45.1	50.3
I have really had a good time at this centre.	174	4.391	0.643	0.0	0.6	6.9	45.4	47.1
I have really had fun at this centre.	173	4.058	0.819	0.0	2.3	23.7	39.9	34.1
Visitors' intentions								
I will recommend this centre to potential visitors in future.	173	4.566	0.552	0.0	0.0	2.9	37.6	59.5
I will say positive things about this interpretation centre to others.	173	4.578	0.551	0.0	0.0	2.9	36.4	60.7
I will possibly revisit this centre in the near future.	176	4.313	0.855	1.1	2.8	10.2	35.2	50.6
I will share my positive experience of the centre on social media.	171	3.854	1.226	6.4	8.2	19.9	24.6	40.9
Service experience								
I experienced professionals available and willing to offer me information.	168	3.744	1.005	4.2	6.5	26.2	36.9	26.2
I experienced professionals available willing to respond to my needs.	168	3.821	1.005	3.0	6.0	25.0	38.1	28.0
I experienced good treatment from the employees.	164	4.061	0.905	2.4	0.6	21.3	39.6	36.0
I experienced modern, technologically advanced installations.	165	3.558	1.112	4.8	12.1	27.9	32.7	22.4
I experienced informative displays with adequate lighting and use of space.	165	4.023	0.786	0.6	3.0	9.1	47.3	40.0
I experienced that the content of the exhibition was different from that of other centres.	164	4.022	0.791	0.6	1.2	15.2	41.5	41.5
I experienced that the centre offered me an interesting educational experience.	165	4.436	0.656	0.6	0.6	3.6	44.8	50.3
I experienced that the displays were of high cultural and historical interest.	166	4.386	0.799	1.8	0.0	9.0	36.1	53.0

SD, strongly disagree; D, disagree; N, neutral; A, agree; SA, strongly agree; obs., observations.

TABLE 2B: Table of means, standard deviations and percentage of responses.

Items	Content versus angry	Entertained versus bored	Happy versus unhappy	Impressed versus unimpressed	Joyful versus unpleasant	Delighted versus disappointed
Pleasure						
Number of observations	151.000	148.000	150.000	150.000	150.000	149.000
Mean	7.848	8.007	8.020	8.247	7.833	7.839
SD	2.702	2.456	2.426	2.479	2.212	2.230
1	5.300	3.400	4.000	4.000	2.700	2.700
2	4.000	3.400	1.300	2.700	2.700	2.000
3	2.000	2.000	2.700	2.000	1.300	3.400
4	3.300	2.000	2.700	2.000	1.300	1.300
5	2.600	3.400	4.000	1.300	4.700	2.700
6	6.600	6.800	8.000	7.300	6.700	6.700
7	4.600	7.400	4.000	4.700	16.000	14.800
8	13.200	12.800	12.000	9.300	16.000	17.400
9	21.900	23.600	28.700	23.300	24.000	24.800
10	36.400	35.100	32.700	43.300	24.700	24.200

SD, strongly disagree; D, disagree; N, neutral; A, agree; SA, strongly agree.

Perceived quality was evaluated on the subscale of seven items. The mean for the perceived quality was 4.26 with a SD of 0.187. The same picture for positively perceived quality about the Letaba Elephant Hall is seen by the percentages, which lean closely to agree and strongly agree. Similarly, the

calculated means on the satisfaction subscale were above 4 with notable percentages of above 70% (agree and strongly agree) obtained in all four items. Visitors' intentions and the service experience show the same picture as the other subscales. Their observed means were notably high, above 3.7.

TABLE 3: Reliability analysis results.

Constructs	Item total correlation	α if item deleted	Cronbach's α
Expectations			0.750
I expect that the centre will have professionals available and willing to offer me information.	0.448	0.723	-
I expect that the centre will have professionals available willing to respond to my needs.	0.586	0.694	-
I expect to receive good treatment from the employees.	0.471	0.720	-
I expect this centre to have modern, technologically advanced installations.	0.285	0.767	-
I expect that the centre will have informative displays with adequate lighting and use of space.	0.505	0.714	-
I expect that the content of the exhibition will be different from that of other centres.	0.386	0.734	-
I expect that the centre will offer me an interesting educational experience.	0.588	0.705	-
I expect that the displays will be of high cultural and historical interest.	0.407	0.730	-
Perceived quality			0.806
The treatment received from the centre's employees has been excellent.	0.543	0.780	-
The centre's employees demonstrated their willingness at all times to look after me correctly.	0.562	0.779	-
The displays in the centre are better than those in other centres of museums I have visited.	0.526	0.784	-
I evaluate the informative displays positively.	0.623	0.768	-
I evaluate the atmosphere created in the centre positively.	0.501	0.789	-
I consider the visit to the centre to have been a good educational experience.	0.565	0.778	-
I consider the exhibition of the objects and materials in the centre to be excellent.	0.494	0.787	-
Satisfaction			0.808
This is one of the best interpretations centres I could have visited.	0.628	0.753	-
I am pleased with my decision to visit to this interpretation centre.	0.586	0.784	-
I have really had a good time at this centre.	0.748	0.717	-
I have really had fun at this centre.	0.593	0.783	-
Visitors' intentions			0.675
I will recommend this centre to potential visitors in future.	0.493	0.619	-
I will say positive things about this interpretation centre to others.	0.607	0.572	-
I will possibly revisit this centre in the near future.	0.561	0.524	-
I will share my positive experience of the centre on social media.	0.386	0.749	-
Service experience			0.857
I experienced professionals to be available and willing to offer me information.	0.627	0.836	-
I experienced professionals to be available and willing to respond to my needs.	0.691	0.828	-
I experienced good treatment from the employees.	0.702	0.827	-
I experienced modern, technologically advanced installations.	0.513	0.854	-
I experienced informative displays with adequate lighting and use of space.	0.648	0.836	-
I experienced that the content of the exhibition was different from that of other centres.	0.601	0.841	-
I experienced that the centre offered me an interesting educational experience.	0.547	0.847	-
I experienced that the displays were of high cultural and historical interest.	0.523	0.848	-

Table 3 continues →

TABLE 3 (Continues...): Reliability analysis results.

Constructs	Item total correlation	α if item deleted	Cronbach's α
Pleasure			0.971
Content	0.820	0.976	-
Entertained	0.940	0.961	-
Happy	0.953	0.961	-
Impressed	0.921	0.964	-
Joyful	0.921	0.964	-
Delighted	0.917	0.964	-

It was also noticed that most of the respondents experienced high levels of pleasure during the visit to the Letaba Elephant Hall. The mean pleasure items related to being content, entertained, happy, impressed, joyful and delighted, which scored 7.85, 8.01, 8.02, 8.25, 7.83 and 7.84, respectively. Items for stimulated, excited and animated were also measured, but eliminated because of low α scores. Most of the visitors rated the items for pleasure above the average of 5. The rating scores of above 6 had percentages of above 60 all summed together per item. As can be seen in Table 2, the results revealed a generally even distribution of data as well as the groupings of variables. The next step was to determine the reliability of the results, which was performed by means of a Cronbach's alpha analysis, as depicted in Table 3.

Item-total correlation and the coefficient alpha (Cronbach's alpha) were calculated to perform the reliability analysis process for the survey measures and the dimension of the constructs. A commonly accepted rule of thumb is that an alpha of 0.6–0.7 indicates acceptable reliability, while 0.8 or higher indicates good reliability. Depending on the calculations, item-total correlation values ranged from 0.28 to 0.94 and the Cronbach's alpha coefficient ranged from 0.67 to 0.97, which is considerably higher than the acceptable reliability level of 0.60. However, one of the items in the expectation subscale had an item-total correlation value lower than the acceptable limit of 0.3 (Streiner, Normam & Cairney 2008). Overall, based on the results of item-total correlation and the coefficient alpha, the research measures were found satisfactory for further data analysis through inferential statistics to test the research hypotheses proposed in this study. Moreover, these results further confirm that the research instrument and scales used in this research have a high level of reliability and are acceptable and satisfactory.

The proportions together with the 95% confidence interval (CI) for the different attributes of the service experience model were reported. The majority of respondents indicated that the service they received during their visit was of a high quality (70%, 95% CI: 63% – 77%). Furthermore, about 60% (95% CI: 52% – 66%) of the respondents had the intention to visit the museum in the future or recommend the museum to someone else, as well as share positive aspects of the centre with others. The expectations of most of the visitors about the Letaba Elephant Hall were high (60%). A positive trend or positive experience was also noticed, where over 60% (95% CI: 53% – 67%) of respondents had a great service experience at the museum. Overall, a high proportion of the respondents

TABLE 4: Binary categorisation of factors.

Variables	Number of observations	Proportions	95% confidence interval	
			LB	UB
Perceived quality				
Low quality	52	0.295	0.232	0.367
High quality	124	0.705	0.633	0.768
Expectations				
Low expectations	90	0.409	0.338	0.484
High expectations	104	0.591	0.516	0.662
Visitors' intentions				
Not good	96	0.449	0.377	0.523
Good	98	0.551	0.477	0.623
Service experience				
Negative experience	86	0.398	0.328	0.472
Positive experience	108	0.602	0.528	0.672
Pleasure				
Displeasure	64	0.278	0.217	0.350
Pleasure	103	0.722	0.650	0.783
Mood				
Not great	74	0.335	0.269	0.409
Great	120	0.665	0.591	0.731
Satisfaction				
Not satisfied	49	0.182	0.131	0.246
Satisfied	145	0.818	0.754	0.869
Confirmation				
Same or worse	37	0.219	0.163	0.288
Better	132	0.781	0.711	0.837

LB, lower bound of the confidence interval; UB, upper bound of the confidence interval.

were entirely satisfied with their visit (81.8%; 95% CI: 75% – 87%). A total of 78% of the respondents indicated that their experience at the interpretation centre had in general been better or much better than they had expected; thus, their visit confirmed their expectations (see Table 4).

The proposed hypotheses for this study were tested using the Chi-square test of association, and all statistical tests were measured at a 5% level. Table 5 contains a two-way table summary of the results. From the collected data, we tested the hypothesis that expectations do not influence a service experience, where the null hypothesis was rejected, and results suggested that visitors' expectations strongly influence a service experience ($p \leq 0.001$). Furthermore, it is also observed that quality that the visitors perceived has significantly influenced visitors' service experience ($p < 0.001$). The perceived quality statistically significantly affects visitors' satisfaction ($p = 0.005$). We observed that the higher the perceived quality, the more likely an individual is to be satisfied with the centre's visited.

To apply structural equation modeling (SEM), an adequate sample size is required. The sample size, as a rule of thumb, is recommended to be more than 25 times the number of parameters to be estimated, the minimum being a subject parameter-ratio of 10:1. The lower bound of total sample size should be at least 200 (Kline 1998). This study had a total sample of 178, furthermore, distributional assumptions has to be met with multivariate normally distributed continuous variables. This enables the researcher to use the most common type of estimating parameters and computing model fit, which is the maximum likelihood method (ML). However,

TABLE 5A: Table of hypothesis testing using a chi-squared test of association.

Factors	Satisfaction				Total	Total %	P
	Not satisfied	%	Satisfied	%			
Perceived quality							
Low quality	16	30.8	36	69.2	52	100.0	-
High quality	16	12.9	108	87.1	124	100.0	-
Pleasure							
Displeasure	28	43.8	36	56.3	64	100.0	-
Pleasure	21	16.2	109	83.8	130	100.0	-
Visitors' intentions							
Negative intentions	40	41.7	56	58.3	96	100.0	-
Positive intentions	9	9.2	89	90.8	98	100.0	-

Note: Asterix indicates: a statistical significance at 0.05.

TABLE 5B: Table of hypothesis testing using a chi-squared test of association.

Perceived quality	Low quality	%	High quality	%	Total	Total %	P
Negative experience	38	54.3	32	45.7	70	100.0	-
Positive experience	14	13.2	92	86.8	106	100.0	-
Pleasure							
No pleasure	18	36.7	31	63.3	49	100.0	-
Great pleasure	34	26.8	93	73.2	127	100.0	-
Confirmation							
Worse or same	15	41.7	21	58.3	36	100.0	-
Better	33	25.6	96	74.4	129	100.0	-

Note: Asterix indicates: a statistical significance at 0.05.

TABLE 5C: Table of hypothesis testing using a chi-squared test of association.

Visitors' expectations	Low expectations	%	High expectations	%	Total	Total %	P
Negative experience	57	66.3	29	33.7	86	100.0	-
Positive experience	33	30.6	75	69.4	108	100.0	-

Note: Asterix indicates: a statistical significance at 0.05.

TABLE 5D: Table of hypothesis testing using a chi-squared test of association.

Disconfirmation	Worse or same	% Better	% Better	Total	Total %	P
Negative intentions	20	26.7	55	75	100.0	-
Positive intentions	17	18.1	77	94	100.0	-

when evaluating the normality, the distributions were positively skewed. For this reason a chi-squared test of association was deemed preferred for this analysis.

From the results depicted in Table 5, the hypothesis that pleasure (*content, entertained, happy, joyful, impressed and delighted*) experienced by respondents during their visit does not statistically and significantly influence satisfaction was rejected. It was clear that pleasure strongly, positively and significantly impacts one's satisfaction ($p \leq 0.001$). However, there was no statistically significant relationship between perceived quality and pleasure ($p = 0.194$). Similarly, there was no evidence to conclude that there exists a statistically significant association between confirmation and perceived quality; and confirmation and visitors' intentions to visit in

TABLE 6: Multiple logistic regression results.

Characteristics	Odds ratio	P	95% confidence interval	Significance
Intercept	0.001	0.000	0.00001	0.0352
Disconfirmation				
Worse or same	1.00	-	-	-
Better	5.615	0.013	1.43300	21.996**
Perceived quality				
Low quality	1.00	-	-	-
High quality	12.521	0.000	3.50900	44.676***
Visitors' expectations				
Low expectations	1.00	-	-	-
High expectations	7.211	0.001	2.24000	23.207***
Visitors' intentions				
Negative intentions	1.00	-	-	-
Positive intentions	3.889	0.027	1.16900	12.936**
Satisfaction				
Not satisfied	1.00	-	-	-
Satisfied	4.144	0.088	0.80700	21.267
Pleasure				
Displeasure	1.00	-	-	-
Pleasure	0.993	0.994	0.15900	6.186
Mood				
Negative	1.00	-	-	-
Positive	1.914	0.443	0.36400	10.077

sig* < 0.05, *sig* ≤ 0.001.

the near future, recommend the centre to the next person or share good things about the centre.

The results also confirmed that the level of visitors' satisfaction increases the intention to visit the centre again or share positive things about the centre on media platforms. Therefore, in this case, the null hypothesis was rejected ($p \leq 0.001$). With regard to the perceived quality and satisfaction, the findings suggested sufficient evidence to conclude that perceived quality positively and statistically significantly affects visitors' satisfaction ($p \leq 0.001$).

Multiple logistic regression was used to establish the factors that statistically influenced the service experience of the Letaba Elephant Hall tourists. The model fitted controlled for biographical factors, where all the fitted factors could explain 41.3% of the variance in the service experience that can be explained by the independent variables. Table 6 contains the odds ratios (OR), *p*-value and 95% CI estimated from the fitted multiple logistic regression.

The findings revealed that gender, first-time visit, age, marital status, satisfaction, pleasure and mood do not statistically significantly influence the service experience of the visitors. On the other hand, disconfirmation, perceived quality, and visitors' intentions significantly affect service experience positively. It was noticed that a unit increase in disconfirmation, quality, expectations and intentions increased the customer's service experience. The odds of a good experience were 4.6 times higher among those who experienced higher or much better than expected levels of confirmation. This is in contrast to those whose experiences were equal or worse than expected. Similarly, the odds of a better service experience were 12.5 times higher for those whose perception of quality was high,

compared with those whose perception of quality was low. The odds of a great service experience increased with high expectations of the centre visited (high expectation odds: 7.2). It is important to observe that, although satisfaction does not significantly affect service, while all other factors remain constant, satisfied visitors had 4.1 times higher odds of a positive service experience than those who were not satisfied, females had 1.6 times higher odds of better experience compared with males, and the birth-cohort 1960–1969 had 5.2 times higher chances of a great experience compared with the birth cohort before 1950. However, we noticed that candidates who were married, living with their partners, divorced, widows or widowers had lower odds of a positive experience at the centre than those whose state was single. The odds were 0.984 and 0.867, respectively.

Discussion and implications

Museums around the world provide opportunities for visitors to learn about heritage resources and their conservation. However, those experiences are not always positive, with the result that some museums develop a bad reputation, fail to attract sufficient visitors, and are eventually not financially sustainable. Therefore, through the adoption of the TBP and EDP theories this study sought to determine whether a significant relationship exists between various experience factors that could lead to a visitor's post-visit intentions. A total of 31 constructs related to expectations, service experiences and pleasure were measured. The results confirmed the validity of the research instrument and the reliability of the data. In terms of results, respondents generally indicated high expectations, high perceptions of service experiences and positive experiences related to pleasure. Further investigation of these constructs was carried out to determine the relationship between expectations, service experience, perceived quality, service satisfaction, and visitor intentions, as well as the mediating effect of confirmation or disconfirmation and pleasure.

It can be concluded that visitors to the Letaba Elephant Hall generally had a positive experience. The visitors mostly expected an excellent display of information and an informative educational experience. Furthermore, the visitors were satisfied with their decision to visit the museum (specifically the educational, cultural and historical aspects), and expressed an intention to revisit in future, to spread positive word-of-mouth reviews, and to post-positive stories by means of social media posts. While the TPB may have been criticised in other fields, it together with the EDP theory, have been practically proven to be relevant in this study. Natural history museum practitioners and academics could use these results to expand and retain different market segments by effectively managing these expectations and experiences and as Lewis (2012) and Basset (2012) have cautioned, by continuously updating and maintaining the quality of exhibits for visitor consumption. Figure 2 provides a graphic representation of the results.

The findings also revealed that visitor expectations strongly influenced the service experience, which confirmed the

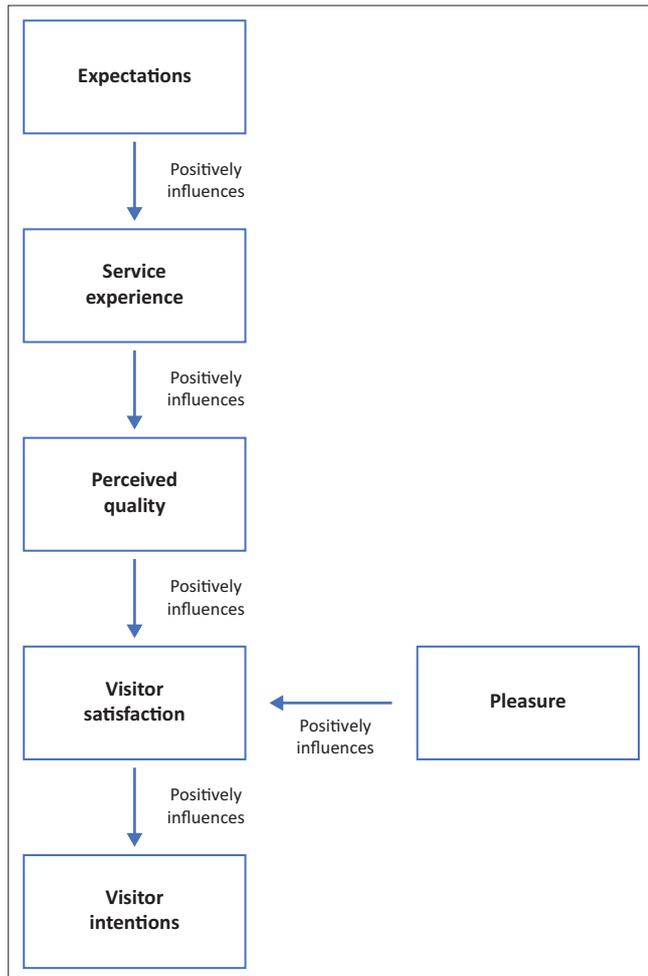


FIGURE 2: Graphic representation of results.

findings of De Rojas and Camararo (2008), Chen and Chen (2010) and Abbasi et al. (2021), and supported Hypothesis 1. Therefore, understanding the expectations of visitors has become a vital first step in determining the success of an attraction such as the Letaba Elephant Hall. The expectations that a visitor cognitively develops prior to visitation will be measured against the visitor's actual perceived experience. Should the perception exceed the expectation, it may be said that service quality is achieved (De Rojas & Camararo 2008). In the case of this study, it was found that there exists a significant relationship between service experience and perceived quality, thus confirming Hypothesis 2. The challenge for a facility such as the Letaba Elephant Hall is the requirement to continuously deliver service that exceeds customer expectations. Engelbrecht et al. (2014) indicate that there is generally a gap between the expectations and experiences of visitors in terms of ecotourism interpretation at the KNP. This case provides an opposing viewpoint, as it seems as though the Letaba Elephant Hall actually exceeds visitors' expectations in terms of elements such as interpretation through informative information displays, educational experiences, exhibitions, and customer service. Therefore, the facility is achieving SANPark's managerial pillar with regard to ecotourism, more specifically related to conservation education.

Hypothesis 3 was also confirmed, as perceived quality was found to significantly influence a visitor's satisfaction – the higher the quality, the greater the level of satisfaction (Wang et al. 2017). Although the higher quality influences satisfaction, it was found that confirmation or disconfirmation does not significantly influence perceived quality, thus Hypothesis 4 is not accepted. Therefore, although visitors experienced an overall positive relationship with the service received, this positive relationship did not significantly influence quality. The determination of quality was based purely on the expectation–experience (EDP) relationship. In addition, it was not found that perceived quality significantly influenced pleasure, resulting in Hypothesis 5 also being rejected. This study therefore does not confirm the results of De Rojas and Camararo (2008) and Chen and Chen (2010) relating to the relationship between pleasure, confirmation and quality. The factor of pleasure was however not totally excluded. Regarding Hypothesis 6, there was a significantly positive relationship between pleasure and satisfaction. The more the levels of contentment, entertainment, happiness, feeling impressed, joy and delight featured in a visitor's experience, the greater the level of satisfaction. It is for this reasons that museums should strive not to be static in their design and displays. These facilities should be dynamic and evolving so as to promote positive pleasurable experiences by visitors. For example in the Letaba Elephant Hall there is currently a tangible engagement with visitors, being able to touch certain artefacts and colourful displays are supplemented by audio-visual presentations. Additional possibilities may include the use of virtual reality displays, QR codes to transfer information to handheld devices and positively reinforced storytelling of conservation success stories.

In terms of visitor intentions, only one significant relationship was found. Hypothesis 7 was supported, as it was found that, as the level of satisfaction increases, so too does the associated influence on visitor intentions such as revisit intention. The potential benefits of positive word-of-mouth also increased. However, there was no significant relationship between confirmation and intention to revisit, once again mirroring the findings with Hypothesis 4.

Although this study found no significant direct relationship between confirmation or disconfirmation (Hypothesis 8) and service experience, quality and pleasure, it was found that an increase in confirmation, quality, expectations and intentions (TBP & EDP) had an influence on the overall service experience. This study also supports the findings of Adam et al. (2019) in terms of the insignificant influence of demographic variables and revisit intentions. However, in terms of satisfaction, we were able to determine that satisfied visitors had higher odds of a positive service experience, females had higher odds of experiencing satisfactory services when compared with males, males in the age bracket of 55–65 generally had higher service experiences, as had the visitors who were single. This forms a specific visitor profile

of which a museum such as the Letaba Elephant Hall will need to take heed in order to increase levels of satisfaction among other groups, especially males, younger visitors and married visitors. As proposed by Brida et al. (2016), married visitors who fall in a younger age bracket might potentially be visiting the facility with children. This, coupled with the greater desire for pleasurable experiences by visitors, might serve as an opportunity for service enhancement through improved edutainment facilities, interactive and child friendly displays, and interpretation facilities catering for enhanced joy and delight. Additionally, as proposed by Brida et al. (2016), the Letaba Elephant Hall and SANParks would benefit from exploring social media opportunities as a means to disseminate the positive experiences of visitors.

Conclusion

The conservation landscape in protected areas does not rest solely on the conservation of fauna and flora in the current space and time. Conservation should be sustainable as well as regenerative and it is only through expansion of conservation education to a larger number of people and to future generations that this is possible. Quality education is vital for the proactive promotion of conservation ideologies and it will only be authentically realised if those facilities designed to cater for conservation education, such as the Letaba Elephant Hall, provide quality services to visitors. Conservation in protected areas is therefore dependant on the buy-in of all stakeholders, which requires a clear understanding of who their visitors are and the factors that result in satisfied visitors who may potentially virally promote the message of conservation to others by means of word of mouth. This study is one of the first to explore the realm of visitors' experiences at museums in national parks in South Africa, and as such furthers the discourse on the topic. We therefore promote further research into this field among other national parks in South Africa and globally as well as further exploration into the role of visitor satisfaction in national parks and the promotion of conservation initiatives. Although the authors understand the complexities of using probability sampling techniques in tourism research, this sampling strategy may provide a more representative sample in further research in this field.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

U.P.H. was the lead author of this article. T.M.N. conducted the statistical analysis and compiled the results section.

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Data availability

Data are available upon request from the corresponding author U.P.H.

Disclaimer

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