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Evaluating COVID-19 health and safety measures for tourist satisfaction at Kruger National Park

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Orientation: The coronavirus disease 2019 (COVID-19) pandemic significantly reduced international tourism, leading to financial losses for national parks. As future pandemics remain a possibility, national parks must apply lessons from COVID-19 to enhance crisis preparedness, particularly in health and safety services, to meet visitor expectations.

Research purpose: This study investigates the health and safety factors (HSFs) that influence tourist satisfaction and overall experience at Kruger National Park (KNP). Understanding these factors can enhance visitor loyalty, ensuring stable revenue for conservation and park operations.

Motivation for the study: The research aimed to assess visitor satisfaction with KNP's health and safety measures during COVID-19, providing insights for improving future crisis response.

Research design, approach and method: A quantitative approach was used, employing convenience sampling. Surveys were conducted at KNP in December 2021, with 284 completed questionnaires collected from selected camps.

Main findings: Analysis identified nine key HSFs that impact visitor satisfaction. These findings provide actionable recommendations for KNP management to enhance health and safety service delivery, ultimately improving the tourist experience.

Practical/managerial implications: By implementing these HSFs, national parks can improve crisis resilience and maintain operations during future pandemics. Ensuring visitor well-being will support the long-term sustainability of conservation efforts and the tourism sector.

Contribution/value-add: This study offers practical strategies to strengthen the tourism industry's ability to recover from crises, reinforcing the essential role of national parks in promoting both environmental conservation and visitor well-being.

Keywords: factor analysis; nature-based tourism; national park management; sustainability; tourist satisfaction; health and safety factors, health and safety protocols; COVID-19.

Introduction

Understanding the tourist experience is essential as it shapes tourists' perceptions, expectations and level of satisfaction (Jeong & Kim 2020). This encompasses various aspects, such as physical performance, sensory stimulation and emotional responses, influencing tourists' satisfaction and loyalty. Notably, tourists' perception of the effectiveness and adherence to health and safety protocols during coronavirus disease 2019 (COVID-19) have significantly impacted their overall experience and satisfaction (Zhang, Sun & Lu 2023). Therefore, understanding the factors that influenced tourists' experiences in national parks during the COVID-19 pandemic, specifically regarding health and safety protocols, is crucial for ensuring tourists' satisfaction during their stay.

As COVID-19 infections started to decrease with the implementation of vaccinations and lower infection rates, some tourism destinations, such as national parks and recreation areas with wide open spaces, were the first to reopen. However, they had to adhere to worldwide COVID-19 prevention strategies or protocols, including social distancing, mask-wearing and temperature checks (Yue et al. 2021). Nevertheless, little is known about how these prevention strategies influenced visitors' satisfaction with their experience in parks and

recreation areas (Bae & Chang 2021). Visitors' satisfaction with safety protocols may be associated with different factors such as visitors' motivations, sociodemographic characteristics, characters of encounters and situational factors (Chuenyindee et al. 2022).

Understanding how visitors perceive risk, the management of national parks could expand their knowledge about responses towards the changing tourism environment, such as revisiting intention, particularly under the challenges of a situation similar to the COVID-19 pandemic (Ramkissoon & Mavondo 2017). Furthermore, investigating visitors' satisfaction with different health and safety protocols may help the management of national parks to develop appropriate strategies to minimise negative experiences of tourists during future pandemics and disaster events (Dube & Nhamo 2020b; Tonge, Moore & Taplin 2011). Accounting for the impacts of the COVID-19 pandemic on visitors' satisfaction with health and safety measures in the future may provide managers with valuable inputs for strategies to address perceived risks and inform effective visitor management strategies (Geng 2021; Zhang et al. 2023).

A limited number of studies documented visitor satisfaction with health and safety protocols in parks and recreation areas in the literature review. For example, Geng et al. (2021) found that overall visitor satisfaction with health and safety protocols in parks and recreation areas during the pandemic was relatively high. Furthermore, the study identified several factors influencing visitor satisfaction with the protocols. One of the critical factors was the perceived adequacy of the protocols in preventing the spread of COVID-19. Visitors who believed the protocols were comprehensive and well-implemented reported higher satisfaction levels. This highlights the importance of clear communication and transparency in conveying the effectiveness of the implemented measures. Additionally, the study found that visitor satisfaction was influenced by the perceived convenience and ease of complying with the protocols. Visitors who found the protocols convenient and easy to follow reported higher satisfaction. This suggests that the design and implementation of the protocols should prioritise user-friendliness and minimise any potential inconvenience for visitors. Another study by Soliman et al. (2024) found that emotional well-being, perceived safety and perceived green image positively impacted visitors' satisfaction, which, in turn, positively affected their willingness towards loyalty. This supports the statement that health and safety factors are paramount in ensuring visitor satisfaction and destination loyalty (Patwardhan et al. 2020).

This research aims to determine the factors influencing tourists' satisfaction with their experience during COVID-19 at the Kruger National Park (KNP), one of the oldest and most renowned national parks in South Africa and the world (Mathivha, Tshipala & Nkuna 2017). The KNP is also one of the top tourist destinations in South Africa, attracting more than 1 million tourists annually (Dube & Nhamo 2020a).

While limited direct research addresses the interplay between health, safety, risk perception, visitor satisfaction and revisit intentions in national parks, existing studies offer valuable insights into these factors within broader contexts, highlighting a significant research gap.

Maulida, Suhud and Wibowo (2020) and Allameh et al. (2015) found that perceived quality and satisfaction are pivotal in driving revisit intentions, indicating that health and safety measures could be integral to these perceptions. Lee (2023) highlights the importance of visitor characteristics in satisfaction, indicating the need for research exploring how health, safety and risk perceptions interact with demographic and behavioural factors. Geng et al. (2021) further explored the influence of park attributes on visitor satisfaction, including health and safety measures. However, the seasonal variations they discuss emphasise the dynamic nature of these relationships.

Findings from this study could have important practical implications for national parks and recreation researchers, practitioners and stakeholders to contend with similar pandemics or situations that might occur in future.

Conceptual framework
Visitor experiences in national parks

This study examines visitor experiences in national parks, focusing on the key constructs of risk perception, visitor satisfaction and revisit intention (Figure 1). The tourism literature has explored diverse approaches to understanding risk, including perceived risks, destination safety and tourists' concerns and risk-taking behaviours (Holm et al. 2017). Within the tourism context, risk perception pertains to the apprehension tourists feel when acquiring and consuming tourism services (Cui et al. 2016). Visitor satisfaction and motivation are pivotal in evaluating the tourist experience (Seebunruang, Burns & Arnberger 2022), with studies underscoring their role in enriching experiences and fostering visitor loyalty. Revisit intention, a post-consumption behaviour in which a tourist desires to re-experience a tourism product or destination, is a crucial outcome for park management (Tosun, Dedeoğlu & Fyall 2015).
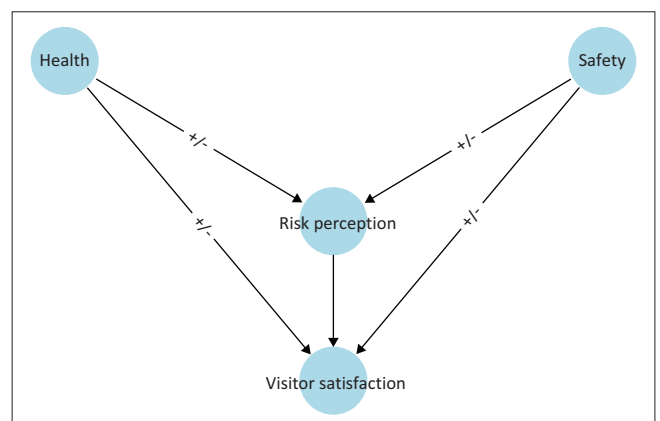
FIGURE 1: Compact framework for health, safety, risk perception and visitor satisfaction.

Risk perception in tourism

Studies have been conducted on perceived risks associated with nature-based destinations and travel, unearthing novel dimensions of such risks (Karamustafa, Fuchs & Reichel 2013; Lepp, Gibson & Lane 2011; Mandić, Mrnjavac & Kordić 2018). Infectious diseases, such as COVID-19, constitute a pivotal element in the risk perception discourse related to tourism (Bae & Chang 2021; Cho 2018). Risk perception plays a key role in comprehending how visitors gauge the risks of climate change and the pandemic (Dube & Nhamo 2020a; O'Connor & Assaker 2021). These studies underscore the significance of understanding visitors' perceptions regarding vulnerability, risk in nature-based tourism and potential behavioural implications.

People's perception of risk is naturally subjective and can differ widely from person to person (Reser & Bradley 2017). Personal beliefs, cultural backgrounds and past experiences could influence how visitors perceive and react to risks (Jahari, Chew & Kamaruddin 2023). Consequently, obtaining a comprehensive understanding of risk perception seems to imply the need for taking into account these individual characteristics and contextual factors.

Visitor satisfaction in national parks

Visitor satisfaction stems from assessing values and expectations (Moore, Rodger & Taplin 2015) and is a crucial aspect of the tourism experience (Cheng et al. 2022). Given the rise of nature-based tourism in national parks during COVID-19, evaluating attributes impacting visitor satisfaction is imperative (Suanmali 2014). The COVID-19 pandemic has highlighted the importance of resilience in the tourism industry, including protected areas such as national parks (Kiptenko & Mykhailenko 2021). Evaluating attributes impacting visitor satisfaction could help national parks assess their resilience to future crises and adapt their strategies accordingly.

Tourist satisfaction in national parks is influenced by many factors, which have been extensively studied in the literature. One significant aspect is the motives for visiting, which can vary widely among tourists. Research indicates that understanding these motivations is crucial for enhancing tourist satisfaction, as they directly influence the experiences and expectations of visitors (Mutanga et al. 2017). For instance, travel motivations such as adventure, relaxation and wildlife encounters can significantly shape the satisfaction levels of tourists visiting national parks (Mutanga et al. 2017). Moreover, lifestyle changes during economic recessions have been shown to affect tourism patterns and satisfaction. Economic downturns often lead to shifts in travel behaviour, with tourists seeking more affordable options or local destinations, which can impact their overall satisfaction with the experience (Huang & Hsu 2009). This is particularly relevant in national parks, where accessibility and cost-effectiveness influence visitor satisfaction (Du & Rong 2022). The length of stay in national parks is another essential determinant of tourist satisfaction. Studies suggest that more extended stays allow for a more immersive experience, which can enhance satisfaction levels (Biswas, Omar & Rashid 2020). However, limited time may restrict tourists from fully engaging with the Park's offerings, leading to lower satisfaction (Huang & Hsu 2009). Additionally, national parks' operational and managerial aspects, such as the quality of services and facilities provided, play a pivotal role in shaping tourist experiences and satisfaction (Flower et al. 2021). Effective management strategies that improve visitor services can increase satisfaction rates and encourage repeat visits (Agyeiwaah et al. 2016). Interpretation needs also significantly influence tourist satisfaction. The ability of Park staff to provide informative and engaging interpretations of the natural and cultural resources enhances the visitor experience (Long et al. 2022). When tourists feel they have gained knowledge and appreciation for the Park's features, their overall satisfaction increases (Prayag et al. 2017). Thus, addressing these interpretation needs is vital for Park management to foster a satisfying visitor experience.

Sivalioglu and Berköz (2012) explored the factors influencing visitor satisfaction in national parks, identifying dimensions such as environmental quality, service quality and recreational opportunities. Their validated constructs shaped the measurement instrument for this study, enabling the capture of visitor satisfaction's multifaceted nature. Longenecker et al. (2008) examined demographic variability in visitor perceptions of Park services, emphasising the importance of tailoring instruments to demographic trends. This inclusion allowed for analysing patterns across diverse visitor groups. Miller-Rushing et al. (2021) highlighted climate change's impact on visitor experiences, advocating for instruments to assess awareness of environmental changes, which informed the addition of sustainability-related items. Hazlehurst et al. (2022) delved into the psychological aspects of visitor experiences, offering insights into emotional and cognitive responses. Their frameworks influenced constructs on emotional engagement and cognitive appraisal in the instrument. Lastly, Seong and Hong (2021) investigated the influence of social media on visitor expectations, emphasising its role in shaping perceptions and satisfaction. These findings informed the inclusion of social media engagement items. Together, these studies provide a comprehensive basis for developing a robust measurement instrument, addressing traditional satisfaction factors and contemporary influences like environmental awareness and digital engagement, ensuring validity and reliability for effective Park management strategies.

Visitor demographics and socioeconomic backgrounds may influence satisfaction; studies reveal variations in satisfaction and loyalty based on age, education, occupation, travel purpose and length of stay (Pinkus et al. 2016; Rahman & Shil 2012; Scholtz, Kruger & Saayman 2013). Post-pandemic behaviour has shifted from constrained tourism desires to a preference for outdoor recreational spaces, driven by a focus on reducing perceived risks (Cho 2018).

The management of national parks should address safety apprehensions and educate visitors about risk mitigation measures to alleviate concerns and enhance trust. Communicating effective risk management initiatives could ease worries, influencing health risk perceptions and protective behaviours (Chien, Yen & Hoang 2017). The perception of safety and security at the destination, including measures taken to ensure the well-being and protection of tourists, such as emergency services, surveillance and risk management protocols, is crucial (Monaco 2021). Providing clear and comprehensive COVID-19 information through Park websites, visitor centres and reception areas can help address health-related concerns and encourage more people to visit (Iirmdu & Donaldson 2024).

Revisit intention in national parks

Revisit intention is a post-consumption behaviour in which a tourist desires to re-experience a tourism product or destination (Tosun et al. 2015). Tourists who have a revisit intention and, in turn, eventually become repeat visitors tend to stay longer, are more active in consumptive activities, are more satisfied with tourism activities, spread good word of mouth and require lower marketing costs compared to first-time visitors (Zhang, Wu & Buhalis 2018).

Since the COVID-19 pandemic and beyond, health and safety protocols will be essential to tourism recovery (Sianipar et al. 2021). Furthermore, COVID-19-induced travel restrictions have bolstered domestic tourism (Hambira, Stone & Pagiwa 2022), accentuating the need to understand domestic tourists' distinct expectations and preferences (Maeda et al. 2018; Yuksel 2023). Domestic visitors possess unique values, making their satisfaction more challenging than international tourists (Kwenye & Freimund 2016). The pandemic has impacted travel intention and motivation (Moya Calderón et al. 2022). Hence, exploring pandemic-induced factors influencing tourist satisfaction in national parks is crucial for adapting strategies to ensure satisfactory experiences and return visits.

The constructs shaping visitor experiences in national parks – health, safety, risk perception and satisfaction – are extensively documented in the literature, highlighting their interrelationships. Health, encompassing physical and mental well-being, is influenced by environmental conditions and facilities (Geng et al. 2021; Karanikola et al. 2017). Safety measures, such as emergency services and signage, foster trust and comfort, enhancing satisfaction and effective Park management (Latip et al. 2021; Seebunruang et al. 2022). Risk perception, shaped by information, past experiences and environmental cues, affects visitor engagement, impacting satisfaction and loyalty (Geng et al. 2023; Moyle & Weiler 2016). Satisfaction integrates health, safety and risk perceptions, with modifiers like demographics, activity types and environmental conditions mediating these relationships (Chen & Tsai 2010; Gorner & Cihar 2011). This evidence-based framework offers a robust understanding of how these constructs interact to shape visitor experiences in national parks.

National parks and coronavirus disease 2019

National parks are essential for their services, such as conserving nature with high biodiversity and landscape value, but also because of the health benefits such as well-being (Jones, Graziano & Dimitrakopoulos 2020). Even more, emphasis was placed on the importance of natural recreational areas such as national parks with the outbreak of the COVID-19 pandemic, which highlighted the importance of national parks as valuable resources for individuals for open and safe recreational spaces amid and after the crisis. Parks and green spaces have become essential sources of resilience during lockdowns and restrictions, positively affecting psychological, physical and social cohesion and spiritual wellness (Geng et al. 2021). Studies have shown that the pandemic has led to a re-evaluation of the value of parks and green spaces, with increased demand for access to these areas (Geng et al. 2021; Kupfer et al. 2021; Templeton, Goonan & Fyall 2021). By providing access to natural spaces, fresh air and opportunities for outdoor recreation, national parks have been recognised as valuable resources for improving health, reducing stress, fostering relaxation and encouraging physical activity (Smith et al. 2021). Additionally, their scenic beauty and biodiversity can have restorative effects on mental health and contribute to overall life satisfaction and the COVID-19 pandemic reaffirmed that visitor experiences in parks and protected areas provide these essential services (Smith et al. 2021). The quality of national Park facilities and services and the measures and actions taken by parks in response to COVID-19 have received positive feedback from visitors (Geng et al. 2023).

Despite knowing the advantages of access to national parks during times of crisis, restrictions on mobility caused by COVID-19 pandemic regulations caused a decrease in the number of tourists visiting national parks globally, resulting in several challenges for Park managers (Souza et al. 2021). One of the most noticeable challenges was a drop in revenue generated from tourism impacting Park staffing, conservation and research capacity (Smith et al. 2021; Xie, Zhang & Morrison 2021). During the reporting year of 2019–2020, total guests to South African parks decreased by 5.1% (6 665 667–6 326 448), and a 69.4% of accommodation occupancy was achieved (Dlamini 2020; SANParks Annual Report 2021, 2022). Along with restrictions on mobility, another barrier to visitation was uncertainties about the health safety issues of visiting natural areas such as national parks. However, as lockdown levels were eased, there seemed to be a resurgence in visitor numbers to natural areas such as national parks likely to be pre-empted by 'pandemic fatigue' and an increase in the public interest because of the need for safe open recreational spaces (Kupfer et al. 2021; Souza et al. 2021). Furthermore, increased visitation could result from feelings of frustration caused by restrictions on mobility that drove individuals to pursue active lifestyles (Mars, Arroyo & Ruiz 2022). To counteract the negative influences of crisis events such as COVID-19 that influenced visitation patterns, it has been proven vital to have health and safety measures in place for times when visitors are hesitant to visit parks because of

uncertainty of health and safety factors along with measures to ensure health and safety when visitation surges (Bhat 2024; Ma et al. 2021). Adapting to different scenarios could enable Park management to ensure a steady influx of income regardless of the 'lockdown' level during a crisis.

Health and safety factors

The COVID-19 pandemic has heightened health-related concerns in travel (Gössling et al. 2021; Tremblay-Huet 2021), particularly in areas with high tourist activity, which are more susceptible to COVID-19 risks (Goh 2021). These concerns encompass cognitive aspects such as perceived susceptibility, severity and emotional dimensions, including anxiety among visitors (Neuburger & Egger 2021), collectively impacting travel intentions (Bae & Chang 2020; Rather 2021).

Governments' enforcement of social distancing and travel restrictions is crucial in reassuring prospective tourists that it is safe to travel (Teeroovengadum et al. 2021). Effective standard operating procedures (SOPs), adaptable operations and online engagement implemented by authorities could mitigate the spread of COVID-19 and tourist anxiety in national parks (Miller-Rushing et al. 2021). Furthermore, communication campaigns from relevant authorities could effectively promote safety compliance with COVID-19 protocols (Beca-Martínez et al. 2022). Adopting these preventive measures, such as social distancing and mask-wearing, could positively influence travel intentions, as Bae and Chang (2021) found among South Korean tourists. As stated earlier in the study, the pandemic has led to a preference for rural parks, possibly because of their association with larger open spaces and fewer visitors, making them more suitable for social distancing measures (Zhu & Deng 2020). However, limited research explores on-site behaviours, preventive effects on crowding perception and emotions (Lu et al. 2021; Sujood, Sheeba & Bano 2021).

Health and safety factors in the Kruger National Park

In the case of South Africa, a large percentage of its tourism products depends on sustainable tourism (Newsome, Moore & Dowling 2012). National Parks encompass all the mentioned aspects and, therefore, play an important role in natural area tourism in South Africa, with 4 million hectares of land under conservation. The KNP, the most well-known iconic Park, is also the focus area of this research (Dlamini 2020; SANParks 2021, 2022). During the reporting year of 2019–2020, total guests to South African parks decreased by 5.1% (6 665 667–6 326 448), and a 69.4% of accommodation occupancy was achieved. The COVID-19 pandemic had already begun to make its presence felt before the national lockdown, with cancellations from international markets starting as early as January 2020. The pandemic resulted from subdued domestic economic and market conditions, which affected visiting patterns and national Park stayovers (SANParks 2020). Still, owing to the unpredictable nature of COVID-19 and other possible looming health crises in

future, the KNP management needs to address the safety concerns of travellers to ensure attracting new visitors and securing return visits by fostering trust in management's ability to provide a safe experience. To assist in the just mentioned, it is essential to learn from the past and determine visitors' satisfaction with the measures SANParks implemented since COVID-19. Therefore, strategies to ensure a sustainable visitor influx and subsequent financial influx from entrance fees are vital to ensure visitor satisfaction with health and safety measures in the Park. By determining how satisfied visitors are, this research could assist Park management in addressing possible concerns regarding COVID-19 and future possible pandemics and disasters that could act as barriers to Park visitation (Karl, Muskat & Ritchie 2020).

While there is limited direct research on the relationship between health, safety, risk perception and visitor satisfaction in national parks, these studies highlight the broader context and factors that could influence visitor experiences and satisfaction (Samdin et al. 2022). Further research is needed to explore the relationship between health, safety, risk perception and visitor satisfaction in national parks.

Research methods and design
Research approach and epistemology

The research adopts a quantitative approach, utilising structured questionnaires to collect measurable data from respondents. The approach is primarily descriptive and correlational, aiming to explore the relationships between variables such as health and safety perceptions and visitor satisfaction and revisit intentions during the COVID-19 pandemic. The study aligns with a positivist epistemology, which emphasises objective measurement and statistical validation to understand visitor experiences systematically.

Population

Based on non-probability sampling, specifically convenience sampling, skilled fieldworkers distributed and collected printed questionnaires from overnight visitors during a 10-day field trip to KNP, South Africa, from 03 December to 11 December 2021. The research was conducted at the following rest camps: Satara (70 questionnaires), Berg-en-Dal (55 questionnaires) and Skukuza (159 questionnaires). The camps mentioned were chosen because of their high occupancy rates. Visitors were approached by their accommodation or camping units, and only tourists willing to participate in the survey and available during this period were selected. During the data collection, South Africa was still in lockdown level 5, which had implications for the number of visitors to the Park. In the end, 284 usable questionnaires were collected. Karanikola et al. (2017) note that visitor satisfaction could vary widely based on demographic and experiential factors, and a larger sample size helps capture this variability, which is particularly relevant in national parks, where visitor demographics could

be diverse, encompassing various age groups, backgrounds and motivations for visiting. The sample of 284 is likely to reflect this diversity, thus enhancing the generalisability of the findings to the broader visitor population (Krejcie & Morgan 1970).

Questionnaire development

The questionnaire development included collaboration with SANParks officials and was adapted from several studies relevant to visitor satisfaction in national parks before and during COVID-19. Research studies by Sivalioglu and Berköz (2012), Longenecker et al. (2008:352), Miller-Rushing et al. (2021), Hazlehurst et al. (2022) and Seong and Hong (2021) were drawn from to develop the measuring instrument for this study. To address the aim of this study, the questionnaire consisted of four sections. Section A captured the sociodemographic information to provide a profile of the visitors. These questions were open-ended. Sociodemographic questions are necessary as behavioural research has found consistent differences in risk tolerance in several domains, including tourism, within and between sociodemographic groups (Kovacic et al. 2020). Moreover, Reisinger and Mavondo (2006) and Simpson and Siguaw (2008) contend that there is a relationship between the sociodemographic characteristics of tourists and perceptions of health and safety during travel. Section B focused on visitor agreement with expectations met for COVID-19 risk measures as well as information availability before Park visitation, and section C focused on the level of agreement on the Park's general health and safety competency as experienced by the visitor during their stay as measured on a 5-point Likert scale of agreement (1 = totally disagree; 5 = totally agree). Section D included visitors' satisfaction during their visit with the specific protocols: hand sanitation, wearing masks and social distancing in the Park, which were measured on a 5-point Likert scale of satisfaction (1 = completely dissatisfied; 5 = completely satisfied). Literature supports the use of a 5-point Likert scale as a standard for measuring attitudes and perceptions. For example, while the study by Haines focuses on a different context, it utilises a 5-point scale for evaluating image quality, indicating its effectiveness in various applications (Haines 2023).

Data analysis

The data obtained from the survey were captured in Microsoft Excel and subsequently analysed statistically using SPSS 29 (Field 2024). The data analysis consisted of four phases. In the first phase, data analysis of the descriptive results (see Table 2) revealed the profile (demographics) of the respondents (means, standard deviations, percentages, correlations and Cronbach's alpha). Cronbach's alpha is to verify the reliability of the factors or constructs identified by the study. Furthermore, indicators for composite reliability (CR) (values ≥ 0.70 acceptable), convergent validity (average variance extracted, AVE ≥ 0.50) and discriminant validity (maximum shared squared variance; MSV should be lower than AVE values of each factor) were calculated.

In the second phase, descriptive statistics were conducted to access satisfaction with health and safety measures at specific locations such as restaurants, bars and shops, focusing on mask-wearing, adequate signage and availability of hand sanitisers.

In the third phase, factor analyses (exploratory factor analysis with an oblimin rotation with Kaiser normalisation) were performed to evaluate visitors' satisfaction with information regarding COVID-19 risk management before Park visitation and satisfaction with the Park's health and safety measures during the COVID-19 pandemic. Bivariate analyses of the data collected were conducted at this stage to examine relationships between health and safety factors (before and during visitation) and responses to key questionnaire items:

- The management of protocols matches my expectations.
- My expectations were met in terms of quality amidst the COVID-19 pandemic.
- I will revisit this Park in the future.
- I will comment on the Park's adherence to COVID-19 measures positively.
- I will recommend this Park to family, friends and others in the future.

Finally, in the fourth phase, Spearman's correlation test (two-tailed) was used to check for relationships between visitors' satisfaction with COVID-19 health and safety information availability before visiting the Park, their experience with protocols and infrastructure during their visit and revisit intention. Cessford (2003) and Veal (2011) supported using the Chi-square test to check for relationships between nominal and/or categorical variables and the correlation test to check for relationships between ordinal or ranked variables. In this study, after correlation tests, ordinal variables were subsequently recoded into nominal variables for the Chi-square tests. All statistical tests were conducted at a 95% confidence interval.

Ethical considerations

An application for full ethical approval was made to the Economic and Management Sciences Research Ethics Committee (EMS-REC), North-West University, and ethics consent was received on 23 November 2021. The ethics approval number was NWU-01313-21-A4. The ethics approval was subject to the COVID-19 protocols and all protocols were strictly followed. Respondents provided informed consent, ensuring voluntary participation, withdrawal rights, confidentiality and data protection. They were informed about data access, storage and reporting. Measures included voluntary information sharing without duress and rights to access, rectify or object to data processing.

Results and discussion

This section presents the results obtained from the data captured, which is sectioned in the profile of tourists to the KNP, and the results of the factor analysis regarding health and safety factors important to respondents before and during their visit for a satisfactory tourist experience at the KNP.

Park visitors' profile

Table 1 displays that the research respondents ages were homogeneous (with the average age 46 years old). The respondents are well educated with all of them either holding a degree or a diploma. Primary occupations of respondents were: teachers, engineers, farmers, students and retirees or pensioners. Most respondents were South African residents, which is not surprising, seeing that the research was conducted during a time frame when COVID-19 was still considered to be a pandemic and that many countries were still subject to travel restrictions. Most respondents paid for an average of three people during their stay at the KNP. The respondents had visited national parks an average of three times per year before the outbreak of COVID-19 and three times on average per year after the declaration of the COVID-19 pandemic. They indicated that the pandemic did not significantly impact locals' decision to visit the Park. Therefore, it could be safely assumed that COVID-19 did not have a considerable influence on the profile of the visitors at the time of the survey because the profile obtained in the present research is very similar to that found in research done over the past decade at KNP during the summer months (Botha, Saayman & Kruger 2016; Scholtz et al. 2013). The fact that the profile resulting from this study coincides with previous research adds to the validity of the data obtained in this study (Table 1).

Various factors influencing tourist satisfaction in national parks have been identified in the past; for example, motives for visiting, lifestyle changes during economic recessions, factors determining the length of stay, managerial and operational aspects and interpretation needs have all been identified as essential factors (Du & Rong 2022; Mutanga et al. 2017). These findings emphasise the need for a diversified management strategy that considers these factors and health and safety issues to enhance tourist satisfaction during times of crisis, such as the COVID-19 pandemic.

Descriptive statistics for satisfaction with health and safety measures

As indicated in Table 2, respondents were most satisfied with these health and safety protocols (wearing masks, adequate signage and availability of hand sanitiser) at reception and felt they were applied correctly. They were least satisfied with these protocols at ablution facilities and photographic hides. The fact that ablution facilities came out as a concern area could have been predicted as this area has a high concentration of people, especially during evenings and mornings when people used ablution facilities in campsites. It also makes sense to use photographic hides as they are an area where numerous people enter and exit during the day to view wildlife.

Results from the factor analysis

Using an oblimin rotation with Kaiser normalisation, the pattern matrix of the principal component factor analyses identified three factors for visitor satisfaction before visiting the Park and five factors for visitor satisfaction during their visit (Table 3). An exploratory factor analysis (EFA) is a statistical technique widely used in research to identify the underlying structure of variables and to reduce data into meaningful and interpretable factors. This method is particularly advantageous in contexts where the relationships among variables are not yet well-established, as it allows researchers to uncover latent constructs that explain observed patterns in the data (Bandalos & Finney 2018). The factors were labelled according to similar

TABLE 1: The overnight tourist and/or park visitors' profile for Summer 2021.

Category	Average age (years)	%	Average times per year	Average number of people	Average nights
Age					
All participants	46	-	-	-	-
When first exposed to a protected area (National Park)	13	-	-	-	-
Gender					
Male	-	56	-	-	-
Female	-	44	-	-	-
Visitation					
Before the outbreak of COVID-19	-	-	3	-	-
After the outbreak of COVID-19	-	-	3	-	-
Size of travelling group	-	-	-	3	-
Length of stay	-	-	-	-	14

TABLE 2: Descriptive statistics for satisfaction with health and safety measures.

Satisfaction with health and safety measures (wearing masks, signage and handsanitisor) at various locations in the park.	N	Minimum	Maximum	Mean	Std. deviation
Restaurants and bars	263	1.67	5.00	4.1261	0.78041
Shops	278	1.00	5.00	4.1253	0.80685
Ablution facilities	269	1.00	5.00	3.7652	1.03819
Interpretation centres	149	2.00	5.00	4.1980	0.74419
Photographic hides	180	1.00	5.00	3.7250	1.06747
Picnic sites without restaurants	213	1.00	5.00	3.9092	0.95611
Picnic sites with restaurants	214	1.00	5.00	4.1301	0.84156
Kiosks	205	1.33	5.00	4.1659	0.77728
Reception	279	1.00	5.00	4.5030	0.62640
Motorised game drives (provided by the Park)	101	1.67	5.00	4.0792	0.93944
Motorised game drives (provided by private operators)	73	2.00	5.00	4.0822	0.84580
Correct application of COVID-19 protocols	273	1.00	5.00	4.2576	0.81095

COVID-19, coronavirus disease 2019; Std., standard.

TABLE 3: Respondent satisfaction with COVID-19 health and safety protocols in the Kruger National Park.

Factor	Average inter-item correlation	Factor loading	Reliability coefficient (Cronbach's alpha)	Mean value
Important factors before visiting the Park				
Factor 1.1: Information provided during the booking process.	0.50	-	0.74	3.79
The SANParks website displays satisfactory information about the Park adhering to COVID-19 protocols.	-	0.84	-	-
During the booking process, the sales consultant provided information about what the Park expects from me regarding adherence to COVID-19 protocols during my visit.	-	0.78	-	-
During the booking process, the SANParks website provided information about what is expected of me regarding adherence to COVID-19 protocols during my visit to the Park.	-	0.50	-	-
Factor 1.2: Familiarity with policies and protocols.	0.26	-	0.66	3.25
I want to receive information about COVID-19 health and safety protocols.	-	0.87	-	-
The information on the COVID-19 protocols of the Park played a vital role in my decision to visit the Park.	-	0.48	-	-
I consulted SANParks' cancellation policy before deciding to book.	-	0.42	-	-
Factor 1.3: Parks as a safe destination during COVID-19.	0.34	-	0.50	4.12
The Park's health and safety protocols have no bearing on my decision to visit the Park.	-	0.69	-	-
Visiting a national Park is a safe option for my family, regardless of the Park's health and safety.	-	0.46	-	-
Important factors during Park visitation				
Factor 2.1: Satisfaction with health and safety in accommodation units.	0.51	-	0.86	3.57
The bedrooms are cleaned and disinfected regularly.	-	0.64	-	-
The privacy of the accommodation units is good.	-	0.64	-	-
The kitchen, dining room and communal washing bay are cleaned and disinfected regularly.	-	0.63	-	-
Rooms are naturally ventilated.	-	0.35	-	-
The accommodation type allows for limited human interaction with people outside my group.	-	0.55	-	-
I am satisfied with the application of Covid-19 measures in accommodation units.	-	0.42	-	-
Factor 2.2: Visitor density.	0.80	-	0.88	1.85
The Park felt overcrowded during my visit over the weekends.	-	0.93	-	-
The Park felt overcrowded during my visit on weekdays.	-	0.90	-	-
Factor 2.3: Satisfaction with general health and safety measures.	0.53	-	0.85	4.12
General maintenance of facilities facilitates/enables adherence to COVID-19 protocols.	-	0.66	-	-
Accessibility of the Park allows for safe entry.	-	0.64	-	-
Signage related to COVID-19 protocols is sufficient.	-	0.67	-	-
Masks are required in indoor settings such as visitor centres, museums and restrooms.	-	0.67	-	-
Hand sanitising stations are conveniently located.	-	0.76	-	-
Factor 2.4: Expectations of health and safety measures in the Park and revisit intentions	0.53	-	0.87	4.40
The atmosphere in the Park is relaxed amidst the COVID-19 pandemic (e.g. Leisurely, welcoming).	-	0.50	-	-
The management of protocols matches my expectations.	-	0.60	-	-
My expectations were met in terms of quality amidst the COVID-19 pandemic.	-	0.54	-	-
I will revisit this Park in the future.	-	0.72	-	-
I will comment on the Park's adherence to COVID-19 measures positively.	-	0.66	-	-
I will recommend this Park to family, friends and others.	-	0.80	-	-
Factor 2.5: Satisfaction with health, safety and hygiene communal facilities.	0.44	-	0.72	3.05
The leisure area is cleaned and disinfected regularly.	-	0.36	-	-
Places or items for cleaning and disinfection are provided to tourists.	-	0.37	-	-
The emergency facilities are satisfactory (such as a first aid kit and escape equipment).	-	0.70	-	-
The health and safety measures hindered my experience during my visit to the Park.	-	0.45	-	-

COVID-19, coronavirus disease 2019.

characteristics, accounting for 60% and 67% of the total variance. All had relatively high-reliability coefficients (above 0.6), with one exception, discussed further in the text, while the average inter-item correlation coefficients also implied internal consistency for all factors except for *Factor 2*. This narrow construct range could be attributed to the low number of items for that factor. Moreover, all items loaded on a factor with a loading > 0.3, except the item *I will adhere to social distancing recommendations policies* under Factor 2, have subsequently been removed. These relatively high factor loadings indicated a reasonably high correlation between the factors and their component items. The Kaiser–Meyer–Olkin measures of sampling adequacy of 0.72 and 0.87, respectively, indicated that correlation patterns were relatively compact and yielded distinct and reliable factors (Field 2024). Bartlett's sphericity test also reached a statistical significance ($p < 0.001$), supporting the factorability of the correlation matrix (Hadi, Abdullah & Sentosa 2016). Factor scores were calculated as the average of all items contributing to a specific factor so that they could be interpreted on the original 5-point Likert measurement scale. In Table 2, visitors considered the following health and safety factors essential before and during the Park.

Important health and safety factors considered before Park visitation

Factor 1: Information provided during the booking process: Visitor satisfaction and safety in national parks are influenced by various pre-visit and during-visit factors (Table 3), each contributing to shaping perceptions of safety, satisfaction and revisit intentions. These factors have become particularly salient in the context of the COVID-19 pandemic, highlighting the importance of strategic Park management to address visitor concerns and enhance experiences.

One of the critical pre-visit factors is the provision of accurate and reliable information during the booking process. This includes constructs such as the quality of information available on the SANParks website regarding adherence to COVID-19 protocols. With a mean value of 3.8 and a Cronbach's alpha of 0.74, this factor underscores the pivotal role of information in complex decision-making processes during crises. Research by Geng et al. (2021) and Kupfer et al. (2021) highlights that high-quality information significantly influences visitors' risk perceptions and travel decisions. By providing comprehensive and up-to-date details about health and safety measures, Park management can foster trust and reduce the uncertainties associated with travel planning.

Factor 2: Familiarity with policies and protocols: Closely linked to this is visitors' familiarity with health and safety protocols, which has a mean value of 3.25 and a Cronbach's alpha of 0.61. Constructs within this factor, such as the role of COVID-19 protocols in decision-making and the consultation of cancellation policies, reflect the importance of transparent communication. Studies by Templeton et al. (2021) and Chien et al. (2017) emphasise that awareness of protocols enhances visitor confidence and influences travel choices. Effective communication regarding these measures is essential for

addressing visitor concerns and fostering a sense of preparedness.

Factor 3: Parks as a safe destination: The perception of parks as safe destinations during COVID-19 emerged as another crucial pre-visit factor. This factor, with a mean value of 4.1 and a Cronbach's alpha of 0.50, encompasses constructs related to safety perceptions, irrespective of specific protocols. This value indicates low internal consistency, suggesting heterogeneity in the responses or a small number of items measuring the construct. However, given this study's exploratory nature and the construct's importance, it was retained for analysis. National Parks and green spaces have been recognised as essential sources of resilience during health crises, offering psychological and physical benefits amid restrictions (Geng et al. 2021; Monaco 2021). Emphasising the inherent safety and well-being benefits of parks can encourage visitation even in challenging times.

Important health and safety factors during Park visitation

Factor 1: Satisfaction with health and safety in accommodation units: During the visit, satisfaction with accommodation safety is a prominent factor, with a mean value of 3.6 and a Cronbach's alpha of 0.86. This includes constructs such as the cleanliness and privacy of accommodation units. Research by Sivalioglu and Berköz (2012) and Longenecker et al. (2008) underscores the fact that cleanliness and safety measures in accommodation significantly influence visitor satisfaction. Investments in maintaining high standards of hygiene and privacy in accommodation units are therefore crucial for ensuring positive visitor experiences.

Factor 2: Visitor density: Visitor density, another during-visit factor, measures perceptions of Park overcrowding and has a mean value of 3.2 (reverse coded) with a Cronbach's alpha of 0.88. Overcrowding can negatively affect visitor satisfaction and amplify safety concerns, particularly during pandemics (Park et al. 2021). Geng et al. (2023) highlight the importance of social distancing measures in alleviating these concerns. Park management can mitigate the impact of overcrowding through strategies such as capacity limits and timed entry systems, which enhance both safety and satisfaction.

Factor 3: Satisfaction with health and safety measures in communal facilities: The management of communal facilities plays a significant role in shaping visitor perceptions, with satisfaction regarding health and safety measures in these spaces achieving a mean value of 4.1 and a Cronbach's alpha of 0.85. Constructs within this factor include the accessibility of safe entry points and the visibility of COVID-19 protocol signage. Research by Sigala (2020) and Nhamo, Dube and Chikodzi (2020) underscores the importance of visible and accessible safety measures in communal areas for building visitor confidence and ensuring compliance. Addressing these aspects is vital for maintaining high levels of satisfaction.

Factor 4: Expectations of health and safety measures implemented in the Park and revisit intention: Expectations and revisit intention constitute another key factor, achieving the highest mean value of 4.4 and a Cronbach's alpha of 0.87. This factor combines perceptions of the Park atmosphere, protocol management and intentions to return. Studies by Michaelidou and Hassan (2008) and Sianipar et al. (2021) demonstrate that meeting or exceeding visitor expectations regarding safety measures fosters loyalty and encourages repeat visits. Effective management of health and safety protocols is therefore integral to enhancing visitor satisfaction and securing long-term engagement with the Park.

Factor 5: Satisfaction with health, safety and hygiene in communal facilities: Finally, hygiene standards in communal facilities, encompassing constructs such as regular cleaning and the provision of sanitisation items, represent a critical factor with a mean value of 3.1 and a Cronbach's alpha of 0.72. Research by Yu, Seo & Hyun (2021) and Kusumawati et al. (2023) highlights the role of hygiene in influencing visitor satisfaction and overall experience. Targeted improvements in the maintenance of these facilities can address existing gaps and further enhance visitor perceptions of safety.

In conclusion, this analysis highlights the multifaceted nature of visitor satisfaction in national parks. Pre-visit factors, such as information provision and protocol familiarity, shape initial perceptions of safety and influence travel decisions. During-visit factors, including accommodation safety, communal facility management and mitigation of overcrowding, significantly impact overall satisfaction and revisit intentions. By addressing these critical areas, Park management can enhance visitor experiences, promote repeat visitation and reinforce the resilience of national parks during crises.

Correlation between health and safety factors before and during visitation and revisit intention

The following factors showed strong positive correlations (Table 4), seeing that all items from 9 to 13 are included in factor D4. The correlations between these items and D4 were not included further in the text. There is a strong positive correlation between satisfaction with health and safety in accommodation units (D1) and expectations of health and safety measures in the Park, as well as revisit intentions (D4), $r(278) = 0.74$, $p = 0.000$. Respondents who are satisfied with the health and safety measures in their accommodations are more likely to have positive expectations regarding Park safety measures and express intentions to revisit the Park.

There is a strong positive correlation between satisfaction with health and safety in accommodation units (D1) and satisfaction with general health and safety measures (D3), $r(274) = 0.57$, $p = 0.000$. This suggests that guests who are satisfied with health and safety in their accommodations are likely to have a broader satisfaction with general health and

TABLE 4: Spearman's rho correlation between health and safety factors before and during visitation and revisit intention.

Health and safety factors and revisit intention	Before visitation			During visitation						Expectations and revisit intention			
	B1	B2	B3	D1	D2	D3	D4	D5	9	10	11	12	13
Factor B1: Information provided during the booking process	-	-	-	-	-	-	-	-	-	-	-	-	-
Factor B2: Familiarity with policies and protocols	0.33**	-	-	-	-	-	-	-	-	-	-	-	-
Factor B3: Parks as a safe destination during COVID-19	0.27**	-0.14*	-	-	-	-	-	-	-	-	-	-	-
Factor D1: Satisfaction with health and safety in accommodation units	0.43**	0.28**	0.28**	-	-	-	-	-	-	-	-	-	-
Factor D2: Crowdedness	0.00	0.23**	-0.25**	-0.14*	-	-	-	-	-	-	-	-	-
Factor D3: Satisfaction with general health and safety measures	0.40**	0.14*	0.23**	0.57**	-0.24**	-	-	-	-	-	-	-	-
Factor D4: Expectations of health and safety measures in the Park and revisit intentions	0.35**	0.09	0.41**	0.57**	-0.33**	0.62**	-	-	-	-	-	-	-
Factor D5: Satisfaction with health, safety, and hygiene communal facilities	0.32**	0.30**	0.13*	0.74**	0.05	0.41**	0.34**	-	-	-	-	-	-
The management of protocols matches my expectations	0.32**	0.06	0.43**	0.53**	-0.30**	0.58**	0.87**	0.38**	-	-	-	-	-
My expectations were met in terms of quality amidst the COVID-19 pandemic	0.29**	0.06	0.38**	0.51**	-0.29**	0.58**	0.87**	0.27**	0.75**	-	-	-	-
I will revisit this Park in the future	0.18**	0.08	0.27**	0.35**	-0.25**	0.34**	0.56**	0.15*	0.46**	0.44**	-	-	-
I will comment on the Park's adherence to COVID-19 measures positively	0.37**	0.14*	0.35**	0.51**	-0.26**	0.54**	0.85**	0.36**	0.72**	0.79**	0.45**	-	-
I will recommend this Park to family, friends and others in the future	0.25**	0.01	0.38**	0.45**	-0.25**	0.40**	0.71**	0.22**	0.56**	0.55**	0.71**	0.58**	-

COVID-19, coronavirus disease 2019.

**, Correlation is significant at the 0.01 level (two-tailed); *, Correlation is significant at the 0.05 level (two-tailed).

safety measures in the Park. The correlation between expectations of health and safety measures in the Park and revisit intentions (D4) and satisfaction with general health and safety measures (D3) is strong, $r(276) = 0.62$, $p = 0.000$. This indicates a significant positive relationship between visitors' expectations of health and safety measures within the Park and their overall satisfaction with the implemented measures. Additionally, this correlation extends to revisit intentions, suggesting that guests with higher expectations of health and safety measures are more likely to express intentions to revisit the Park.

A strong positive relationship was found between guests' satisfaction with health and safety in their accommodation units (D1) and their satisfaction with the health, safety and hygiene standards of communal facilities within the Park (D5), $r(277) = 0.74$, $p = 0.000$. The visitors who are satisfied with the health and safety measures in their accommodation units are highly likely also to express satisfaction with the health, safety and hygiene standards of communal facilities. This suggests a consistent perception of high-quality health and safety standards across different Park areas, contributing to a positive guest experience.

The correlation between satisfaction with health and safety in accommodation units (D4) and the item *The management of protocols matches my expectations* $r(276) = 0.62$, $p = 0.000$ signifies a strong positive relationship between guests' satisfaction with health and safety in their accommodation units and their perception that the management of protocols aligns with their expectations. Interpretation: Visitors who are satisfied with their accommodations' health and safety measures are likelier to believe that the Park's management is effectively implementing protocols that meet their expectations. This suggests that guests perceive a consistency between their expectations for health and safety measures and the Park's actual management practices.

The correlation between satisfaction with general health and safety measures (D3) and the item *The management of protocols matches my expectations* $r(275) = 0.58$, $p = 0.000$ indicates a strong positive relationship between guests' overall satisfaction with health and safety measures and their perception that the management of protocols meets their expectations. Interpretation: Guests who express satisfaction with general health and safety measures within the Park are likelier to believe that its management is effectively implementing protocols that align with their expectations. This suggests that guests' overall satisfaction with health and safety measures is closely linked to their perceptions of how well the Park's management meets their expectations regarding these protocols.

The items: (1) The management of protocols matches my expectations; and (2) My expectations were met in terms of quality amidst the COVID-19 pandemic, have found to have a very strong positive relationship $r(277) = 0.75$, $p = 0.000$ between guests' perception that the management of protocols matches their expectations and their perception that their expectations for quality amidst the COVID-19 pandemic were met. Guests who believe that the Park's management effectively meets their expectations for protocols are highly likely also to perceive that their expectations for quality amid the COVID-19 pandemic were met. This suggests that guests view the effective implementation of protocols as a key factor in maintaining quality standards during the pandemic, contributing to their overall satisfaction with the Park experience.

The relationship between health and safety factors, expectations and revisit intentions

The relationship between various health and safety factors, visitor satisfaction and revisit intention yields practical implications. Firstly, the positive correlation between satisfaction with health and safety in accommodation units and expectations of health and safety measures in the Park and revisit intentions suggests that maintaining high standards in accommodations enhanced satisfaction and encouraged repeat visitation, as previously mentioned by Michaelidou and Hassan (2008). Furthermore, the correlation between satisfaction with health and safety in accommodation units and general health and safety measures implies that guest satisfaction in accommodations extends to broader satisfaction with Park health and safety measures. This interconnectedness underscores the importance of consistent, high-quality standards across different Park areas to enhance the overall guest experience (Aktymbayeva et al. 2023). Additionally, the relationship between expectations of health and safety measures in the Park, revisit intentions (D4) and satisfaction with general health and safety measures (D3) emphasises the influence of guest expectations on satisfaction and revisit intentions. Meeting guest expectations is crucial for enhancing overall satisfaction and encouraging repeat visitation (Kusumawati et al. 2023). Moreover, the positive correlation between guests' satisfaction with health and safety in accommodation units and satisfaction with the health, safety and hygiene standards of communal facilities within the Park highlights consistent, high-quality standards across different Park areas. This contributes to a positive guest experience and underscores the importance of maintaining consistent standards throughout the Park (Smith et al. 2021). Furthermore, the correlation between satisfaction with health and safety in accommodation units and the management of protocols matching expectations indicates a strong positive relationship. Visitors satisfied with accommodation safety will likely perceive effective protocol implementation by Park management, enhancing guest satisfaction and safety perceptions (Dwiatmojo et al. 2022).

These correlations provide valuable insights into national Park stakeholders, including Park managers and government authorities. By maintaining high-quality health and safety standards, meeting guest expectations and effective protocol management, national parks could create positive guest

experiences and encourage repeat visitation during COVID-19 (Lebrun, Su, & Bouchet 2021).

Implications

The research has the following findings and implications. This study identified eight (three before visiting the Park and five during visitation) health and safety factors in managing visitor satisfaction at a national Park in South Africa during COVID-19, and the relationship of these factors with satisfaction and revisit intention is discussed further in the text. The study on the relationship between health and safety factors and revisiting intentions in national parks during COVID-19 offers both literature and practical implications. Developing a preliminary measurement scale based on visitors' satisfaction with health and safety factors fills a gap in the literature. Previous studies have rarely explored visitor satisfaction with health and safety measures in national parks (Truong, Lenglet & Mothe 2018; Xie et al. 2021). This measurement scale could be a valuable research tool for future scholars to conduct confirmatory factor analyses assessing visitors' satisfaction with health and safety measures in protected areas.

Integrating visitor satisfaction, risk perception and revisit intentions in the study contributes to understanding the complex factors influencing travel intentions during challenging times (Abdullah et al. 2020; Wachyuni & Kusumaningrum 2020). Risk perception, a crucial factor in tourists' decision-making, was explored in the context of the COVID-19 pandemic, with health and safety information availability emerging as a significant predictor of risk perception (Chiu & Lin 2011; Garg & Kumar 2017). Inadequate health information could contribute to travel risks, emphasising the importance of comprehensive health and safety information to make tourists more aware of potential risks during travel (Williams & Baláž 2015). Perceived health risk significantly influences tourists' decision-making processes and travel intentions, with negative risk perceptions impacting travel intentions (Chew & Jahari 2014).

Practically, the study provides valuable insights for national Park stakeholders, including Park managers and government authorities. Understanding visitors' satisfaction with health and safety measures could improve visitor experiences and successful Park management (Slabbert 2021). Promotional campaigns could educate prospective visitors about health and safety measures, emphasising the importance of familiarising themselves with protocols before visiting the Park. Modifications to parking design, such as enhancing privacy and providing more private facilities during health crises like COVID-19, could accommodate more visitors while ensuring safety (Samdin et al. 2022). Keeping protected areas like national parks open during crises is crucial, as they provide safe spaces for physical and mental recuperation, contributing to visitor satisfaction and well-being (Slabbert 2021).

The study's findings align with the framework by demonstrating how health and safety measures influence visitor satisfaction and revisit intentions, key constructs within the proposed model. Satisfaction with health and safety measures in various Park areas, such as restaurants, shops and ablution facilities, supports the link between health, environmental management and visitor well-being, as noted by Karanikola et al. (2017) and Geng et al. (2021). Moreover, the Park's application of COVID-19 protocols reflects its ability to foster trust and comfort, consistent with the findings of Seebunruang et al. (2022) and Latip et al. (2021). Factor analysis further suggests that addressing health and safety measures mitigates risk perception, supporting the work of Moyle and Weiler (2016) and Geng et al. (2023). The positive correlation between satisfaction and revisit intentions aligns with the framework's emphasis on satisfaction as integrating health, safety and risk perceptions, echoing Ramkissoon et al. (2014) and Tonge et al. (2011) on satisfaction's role in place attachment and management success. While modifiers like demographics and activity types were not explicitly examined, the focus on overnight tourists offers insights into how these factors might mediate relationships, as suggested by Chen et al. (2011) and Gorner and Cihar (2011). In sum, the findings provide empirical support for the framework, highlighting the critical role of effective health and safety measures in enhancing satisfaction, reducing risk perceptions and fostering loyalty in national Park visitors.

Conclusion

The research findings provide critical insights into health and safety factors impacting visitor satisfaction at a South African National Park during the COVID-19 pandemic. Eight factors were identified, three being relevant before Park visits and five during visits. These findings hold significant implications for tourism providers and destination management organisations, particularly in managing visitor satisfaction and safety during crises. Some factors highlighted are the information provided on policies and protocols before visiting the destination, for instance, during the booking process. The accuracy and reliability of information are pivotal in travellers' decision-making processes. Tourism providers should prioritise offering up-to-date and consistent information, potentially supplemented by previous travellers' testimonials. Effective communication of destination policies and protocols plays a central role in addressing tourists' concerns and ensuring their safety. Clear, consistent communication from authorities is essential in keeping tourists informed about the destination's policies. This approach empowers tourists to make informed choices, ensuring satisfaction and safety. The research findings stress the significance of continual evaluation and improvement of targeted policies in crisis response. This underscores the need to ensure that tourists are well-informed about destination policies and protocols to enhance satisfaction and safety. In practical terms, ongoing policy evaluation and enhancement are critical to address tourist concerns and enhance visitor satisfaction and safety. These insights serve as valuable guidance for tourism providers and destination management organisations seeking donor satisfaction and

safety during crises and pandemic scenarios. Implementing these findings could contribute to the resilience and recovery of the tourism industry during challenging times.

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Authors' contributions

M.M.H. contributed to data collection, project management and drafting the article. P.v.d.M. served as a mentor and contributed to project management, as well as the writing, review and editing of the article.

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Data availability

The data that support the findings of this study are available on request from the corresponding author, P.v.d.M.

Disclaimer

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