

**UNDERSTANDING TOURIST BEHAVIOR AND CONSERVATION
IMPLICATIONS: A CASE STUDY OF LEOPARD SIGHTINGS IN HORTON
PLAINS NATIONAL PARK, SRI LANKA**

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Abstract

This study investigates the relationship between tourist behavior and leopard conservation efforts in Horton Plains National Park, Sri Lanka. The primary aim is to understand the impacts of tourist activities on wildlife conservation, specifically focusing on leopards, and to develop strategies for sustainable wildlife tourism management. A mixed-methods approach was employed, combining observational studies and semi-structured interviews with tourists, park staff, and wildlife authorities. Observations were conducted during peak tourist seasons, focusing on areas with frequent leopard sightings. Interviews explored tourists' attitudes, behavioral intentions using the Theory of Planned Behavior (TPB), and adherence to park regulations. The findings reveal that tourists generally exhibit positive attitudes towards leopards, viewing sightings as significant highlights of their park experience. However, a considerable proportion of tourists engaged in behaviors that could harm leopards and their habitats, such as straying off marked trails, making loud noises, and feeding wildlife. The study identified a compliance rate of 65.8%, indicating room for improvement in adherence to park guidelines. The TPB framework highlighted that social norms and perceived behavioral control significantly influenced tourist behavior, with observed violations often prompting similar actions by other visitors. The study concludes that increased visitor education, stricter enforcement of regulations, and sustainable management practices are crucial for mitigating negative impacts on wildlife. Recommendations include developing interpretive programs, enhancing ranger patrols, fostering stakeholder collaboration, and prioritizing habitat conservation efforts. This research contributes valuable insights to the discourse on sustainable wildlife tourism and conservation practices, offering strategies to balance tourist activities with conservation objectives. By implementing these measures, Horton Plains National Park can ensure the long-term protection of leopards and maintain its ecological integrity, promoting a harmonious coexistence between humans and nature.

Keywords: Horton Plains National Park, Leopard Sightings, Sustainable Tourism, Tourist Behavior, Wildlife Conservation.

Introduction

Horton Plains National Park situated in the middle of Srilanka, is one of the National parks in Srilanka which covers an area of 31.6 square kilometers is home to many endemic species of flora and plants as well as it serves as a natural heritage for the country. Not only does it serve to protect the biodiversity of the country, but it also adds value to the tourism of the country making it an ideal place to visit for both locals and foreigners (Rathnayake, 2016). The park is home to over 700 plant species along with 27 species endemic to the Park itself, and a diverse range of mammals, reptiles, birds and more (Witharana et al, 2013). As noted by Rathnayake and Gunawardena in 2014, these features along with its ecological significance have led to the Hutchinson's park being designated as a World Heritage Site under UNESCO.

The charm of Horton Plains goes beyond its scenic beauty winning the hearts of local citizens and foreign tourists alike (Rathnayake and Gunawardena, 2014). From the breathtaking views at "World's End" to the peaceful falls at "Baker's Falls", the park offers a range of experiences for people passionate about nature and adventures (Rathnayake, 2016). The vast areas of grass mixed with cloud forests create a habitat for many different species. Most tourists come here to enjoy the splendid views as well as the calmness of the waterfalls and the joy of watching animals in their natural environment (Rathnayake, 2015). In spite of all this beauty, there is one major issue that needs to be focused on – the increasing danger of human activities to Horton Plains fragile ecosystem which is one of the many wonders of the world (Rathnayake, 2015). Even with its protective borders, Horton Plains still suffers numerous issues caused by human intrusion and exploitation (Rathnayake, 2015). The unchecked growth of park visitors along with untapped waste disposal services has created a situation in which littering has become common practice within the park boundaries. Along with apples and polythene, the park also suffers from food litter like polythene and leftovers. Not only does this junk make the beauty of nature less appealing, but it also endangers various forms of wildlife including endemic species of lizards and large mammals such as sambar deer and wild boars. Furthermore, off-trail hiking and casual walking by tourists leads to the compaction of soil which alongside disrupting the delicate soil structure and vegetation, actively threatens the local ecosystem (Rathnayake, 2015).

In addition, the neglecting of set boundaries like not following marked trails remains the leading cause of the ecosystem coming into balance of the delicate state it is in. The growing volume of careless activities like unregulated drone flying for recreational purposes have increasingly made life in Horton Plains more difficult (Dhananjani & Mahaulpatha, 2022). Such actions harm the ecosystem as well as waste valuable resources like land leading to habitat destruction that puts the parks biological diversity in danger. Without proper

and adequate authority control of park boundaries and the scant available funding set aside for conservation turn these Issues into complex problems that cannot be handled adequately (Dhananjani & Mahaulpatha, 2022).

Research Problem And Gap

Even after acknowledging these difficulties, a considerable gap still exists in the understanding how leopard tourism particularly impacts wildlife conservation (Kittle and Watson, 2018). Leopards are vital for the maintenance of ecological balance in Horton Plains, and their conservation serves as a keystone for the ecosystem (Kittle and Watson, 2018; Rathnayake and Gunawardena, 2014). However, there is insufficient information documenting the impact of tourism on leopard population and habitat (Kittle and Watson, 2018). This lack of information creates challenges in formulating effective policies to manage human-wildlife interactions, conflicts and sustainable tourism (Rathnayake and Gunawardena, 2014). In addition, there are no adequate works that combine qualitative components to study the impact of tourists behavior toward wildlife conservation (Karunarathna et al, 2017). Most studies focus on higher-level ecological impacts and visitor satisfaction, often neglecting the detailed relationships between the tourists and the fauna. To address this gap, the current study takes a qualitative approach, synthesizing observational techniques with semi-structured interviews. Focusing on leopard conservation enables the study to tackle an important but less documented issue regarding the biodiversity of Horton Plains in the existing literature. Gaining insight into the tourists' perceptions, actions, and compliance with park rules during leopard viewings can significantly improve understanding of the wildlife disturbance factors and help formulate respective conservation strategies (Tandfonline, 2015).

Aims And Objectives

Given these challenges, this study seeks to explore the complex association between leopard conservation and tourist behavior in Horton Plains National Park. The primary focus is to understand the impact of tourism on wildlife conservation and develop appropriate policies for the management of wildlife tourism. The study will specifically achieve the following objectives: assess leopard sighting views in the Horton Plains National Park by undertaking interviews and surveys with the tourists; measure the behavioral intentions of the tourists during leopard sightings using the Theory of Planned Behavior; conduct observational studies to capture the behavior of the tourists in the park by monitoring leopard sighting sessions capturing compliance with park rules, interactions with fauna, and other relevant activities; and examine the data to determine the various possibilities of endangerment to leopards and suggest solutions for the sustainable management of tourism activities.

Significance

This research aims to clarify the multifaceted relationship between human activities and wildlife conservation in Horton Plains National Park. Understanding the causes of environmental degradation and proposing feasible solutions, this study seeks to help preserve this natural sanctuary in peace. This study's results are hoped to address the discourse on sustainable tourism and conservation practices in the context of protected areas, offering insights that pertain to other protected areas across the globe. In addition, the study will assist in policy development and the implementation of management practices to improve the conservation of leopards and other wildlife in Horton Plains.

Literature Review

Theory Of Planned Behavior (Tpb)

Ajzen (1991) proposed The Theory of Planned Behavior (TPB), the application of which offers insight into human actions within specific settings—making it pertinent to tourist behavior in natural sites like Horton Plains National Park (Ulker-Demirel and Ciftci, 2020). As TPB suggests, behavioral intentions are influenced by attitudes toward the behavior, subjective norms, and perceived behavioral control, which are the three critical factors that shape intentions. An attitude involves an individual's consideration of whether performing the behavior is favorable or unfavorable (Soliman, 2021). Norms subjectively defined control perceived social pressure to perform or not a certain behavior and control revolves around an individual's perceived capability to execute the behavior drawing from prior experiences, foreseen challenges, and other external factors (Soliman, 2021).

TPB in the context of wildlife tourism and conservation can be useful when analyzing tourists' intentions and actions for leopard viewing (Dybsand & Stensland, 2022). Understanding the attitudes that tourists hold towards leopards and wildlife conservation will help in capturing the motives and drivers of actions they take within the park. For example, strong leopards' conservation attitude and positive attitude towards leopards will predispose some tourists to adopting less disturbing strategies to the wildlife (Miller, 2019). On the other hand, tourists who have an image of leopards as mere tools to aid in entertainment may try to disturb the animal by getting closer for photographs and making attention-grabbing noises (Hsu and Huang, 2012). The TPB framework also includes the impact of social norms on behaviors (Hsu and Huang 2012). For Horton Plains, this may require appreciating how tourists interpret the actions of their fellow visitors as well as the behaviors that are expected of them by the park authorities and other guides to the park (Hsu and Huang 2012). In case the social norm is to support wildlife and to follow park rules, it is likely that tourists will conform to this norm (Miller 2019). In contrast,

if rule-breaking behavior is observed to go unpunished, then such behavior becomes acceptable or even logical.

Another of such is perceived behavioral control which is also the second most important aspect of TPB. Aspects such as the existence of relevant information, presence of park personnel, and the informative nature of the signs placed within the park may affect tourists' perception towards taking part in conservation oriented behaviors (Miller 2019). Providing tourists with a greater sense of control, such as providing instructions on how to conduct oneself during leopard viewings and easy access to waste containers can promote responsible actions (Sun et al 2022).

Visitor Impact Management (VIM) Framework

The Framework for Visitor Impact Management (VIM) is a model that lies at the intersection of tourism recreation and ecology, spending equal energy attempting to explain and control the interfaces caused by tourism activities vis a vis natural areas. Demas et al (2015) have remarked on the distinctive features of the model including more focus on behavioral assessment in relation to site conditions and mitigating wildlife and ecosystem devastation. Velmurugan et al (2021) also mentions management strategies focusing on negative impacts avoidance. In the case of Horton Plains National Park, the leopard population and leopard habitat loss as well as region gentrification are fundamental generational undertones and with the help of VIM, the model results in estimating the consequences of tourism and related activities on the local fauna and habitats of leopards.

VIM Framework encompasses the identification of visitor impacts, condition assessment of the site, and management strategies to offset negative impacts (Northcote, 2020). Using this framework, researchers can analyze the degree of impact leopards and their habitats face in Horton Plains. This includes tracking visitor levels, off-trail hiking, and disturbances to wildlife (Northcote, 2020). For instance, heightened visitor levels in hotspots where leopards are sighted can result in habitat destruction and exacerbated stress on animals. Off-trail hiking leads to trampling of foliage, which can disrupt leopard territories and potentially lead to wildlife-human conflict. The VIM Framework focuses on managing constituents such as the park management, tourists, and local populations (Zelenka and Kacetl, 2013). Involving these stakeholders enables researchers to balance conservation and tourism and develop more efficient management plans. For example, educational programs informing tourists about the responsibilities needed for the preservation of leopards can help enhance visitor experience while preserving these animals. Using the VIM Framework allows researchers to assess the level of visitor impact on leopard population in Horton Plains and formulate management plans to alleviate these impacts.

Incorporating TPB and VIM offers a balanced perspective to evaluate the relationship between human actions and wildlife conservation in the park.

Research Gap In Literature

There is a lack of research focused on the impact of tourist activities on apex predators such as leopards (Krafte Holland et al, 2018) despite the comprehensive literature on wildlife tourism and conservation. While some literature has discussed the overarching ecological ramifications of tourism and the need to monitor visitor behavior, there is little focus on the intricate dynamics between tourists and leopards in protected areas such as Horton Plains National Park (Ngoprasert et al, 2017). This lack of research makes it difficult to develop proactive measures to manage conflicts between humans and wildlife while fostering responsible tourism (Candelario, 2015). The integration of qualitative and quantitative methodologies to study wildlife conservation in relation to tourist behavior remains a major gap in the available literature. Such studies tend to separate the ecological impacts and the tourism satisfaction metrics without considering both facets simultaneously. An instance is noted in the research of Newsome, Moore, & Dowling (2012) that investigated the impacts of tourism at national parks on the deterioration of wildlife habitats and the resultant stress to wildlife populations. The authors do not consider the various tourist activities which may contribute to these consequences.

Moreover, the involvement of the TPB and VIM frameworks within the realm of wildlife tourism needs further examination. Even though these frameworks offer significant value in understanding the psychology and impact management, tourism systems focusing on wildlife, especially apex predators, have not been studied extensively. This research seeks to address this inadequacy by integrating TPB and VIM to understand better how tourists and their actions impact leopards within the Horton Plains.

Conceptual Framework For Developing The Interview Guide

Using the TPB and VIM Framework, the concept from which the interview guide for this study is constructed contains several elements. The interview guide aims to examine the tourists' attitudes and subjective norms, perceived behavioral control, and actual behaviors during leopard sighting activities in Horton Plains National Park. The guide is composed of three main sections; attitudes and perceptions of tourists toward leopard sightings, behavioral intent analysis through TPB, and observation of tourists during leopard sighting activities. In the initial part, the interview questions focus on the perception and attitude of tourists towards leopard sighting. For example, "Could you describe your experience in horticulture as one walking in the Horton Plains National Park in relation to leopard sighting?" and "What feelings do you experience if a leopard is seen during your tour of the park?" are tailored to gather feedback concerning

the perceptions of tourists regarding leopards and their experiences in the park. Also included are questions regarding the reasons which tourists tend to inquire about the park and their opinions concerning the significance of conserving leopards and their ecosystems.

The focus of the second section is studying the behavioral intentions of tourists through the use of TPB. “From your experiences, could you share what your intentions or strategies are in relation to a leopard sighting in Horton Plains National Park?” and “What are the reasons that determine your leopard sighting behavior?” are examples of questions aimed at understanding the tourists’ intentions and the determinants of their behaviors. This part also includes questions pertaining to control, for instance: “How much control do you think you have over your actions when you come across a leopard in the park?” “Do you feel obliged to conform to some guidelines and rules of the park concerning wildlife observation and study? Why or why not?”, are some of the questions that are considered. Observation of tourist behavior during leopard sightings is captured in the third section. “Have you at any time witnessed some tourists exhibiting what you would consider as inappropriate behaviors to leopards and their habitats? If yes, what were those behaviors?” and “What do you consider as the most popular behaviors shown by the tourists to the leopards during the leopard sighting sessions?” serve the purpose of soliciting the actual behaviors of the tourists as well as their perceptions about the behaviors of others.

This part also contains queries related to the tourists’ perceptions concerning the conduct of other visitors in the park as well as their comments on how such actions can be mitigated in regard to leopards and their ecosystems. The purpose of the interview guide is to address the gaps in understanding the different aspects influencing tourists motivational behavior while evaluating their impact on leopard conservation in Horton Plains National Park by integrating TPB and the VIM Framework. Data collected from this study can aid the formulation of specific management guidelines that foster responsible wildlife tourism and further conservation actions within the park.

Materials And Methods

The approach used in this research is a combination of observation and semi-structured interview which falls under the category of broader mixed-methods design for specific focus on leopard sighting tourists in Horton Plains National Park, Sri Lanka. The aim is to analyze the relevant data on the relationship between tourists activities and leopard conservation initiatives, and provide authoritative suggestions on the sustainable management of wildlife tourism.

To provide full coverage in data collection, sampling methods were crafted with precision. For some of the observational studies, the sampling was done randomly within the park, primarily in places that were famous for leopard watching. The dates aligned with the peak tourist visiting periods, December 1st to 14th, with routine checks done from 6 am to 7 am to maximize tourist encounter (sighting 75 tourists). A total of 14 international tourists, 25 local tourists, 3 park staff, and 3 wildlife authority representatives were selected for semi-structured interviews using purposive sampling. This approach ensures maximum representation of tourists in addition to other crucial constituents vital for effective park management and conservation considering their role as informants.

In-depth reliability strategies were implemented as per data collection to maintain consistency for accuracy and validity. Trained observers stationed at selected sites documented each tourist's actions using a pre-formatted checklist, and interviewing park visitors, staff, and wildlife authorities was conducted without a prepared script. Careful formulation of the interview guides was done to address perceptions including but not limited to, participation motivation regarding sighting leopards and engaging in various conservation activities. Participants were assured that their privacy would be upheld, leading to consent which allowed for the recording of interviews.

The quantitative aspect of the analysis will examine metrics such as the level of compliance with park rules and wildlife interactions to determine behaviour patterns and frequencies. This will include using frequency counts and calculating percentages. The qualitative analysis of the interview will apply thematic analysis to determine the predominant tourist motivations, attitudes, and behaviors for the studied area, including those defined by thrills and wonder, violation of park rules, and national differences. During the entire study, ethical factors were considered. Informed written consent was received from the participants. There are also measures taken to prevent disturbance to the wildlife. Anonymity and confidentiality were given to all participants which ensured honesty during the interviews.

Regardless of the rigor of the methodology, some weaknesses need to be mentioned. There is bias that can arise from methods that rely on observation and interviewing, such as bias from the observer and from self-reporting. Moreover, the number of interviews conducted with the park's staff and the wildlife authority was small which can affect the research's credibility. Weather and the visitors tend to be the other factors that may alter the outcome of the study.

Results**Table 1:** Responses from visitors

Question	Solo Visitor	Couple	Family	Group
Can you tell me about your experiences visiting Horton Plains National Park?	"I visited Horton Plains last year and was lucky to see a leopard in the distance. It was thrilling!"	"We've visited the park multiple times and have always hoped to spot a leopard."	"Our family trip to Horton Plains was amazing, especially when we spotted a leopard hiding in the bushes."	"Our group excursion to Horton Plains was unforgettable, especially with the leopard sighting."
How do you feel when you have the opportunity to see a leopard during your visit to the park?	"Excited and amazed. It's a rare sight that makes the trip worthwhile."	"It's a special moment to share with my partner. We feel lucky to witness such a majestic animal."	"The kids were ecstatic! They couldn't stop talking about it for days."	"We felt a sense of awe and wonderment. It was a highlight of our trip."
What factors influence your decision to visit the park, especially in hopes of spotting a leopard?	"I heard about the leopard sightings and wanted to experience it myself."	"We enjoy wildlife and nature, so visiting a park known for leopards was a must."	"We wanted our children to have a memorable wildlife experience."	"We chose this park for its wildlife diversity, including leopards."
Do you believe that leopard sightings contribute to the overall appeal of	"Absolutely. It adds an element of adventure and excitement to the park experience."	"Definitely. It's a unique feature that attracts nature enthusiasts."	"Yes, it makes the park stand out from others."	"Definitely. It's a major draw for tourists."

Horton Plains National Park as a tourist destination ? Why or why not?				
How important do you think it is to protect leopards and their habitats in the park?	"Very important. They're a symbol of the park's biodiversity and need protection."	"Extremely important. Conservation ensures future generations can enjoy them too."	"Critical. We need to preserve their habitat for the ecosystem to thrive."	"Absolutely crucial. They're an integral part of the park's ecosystem."

Table 2: Responses from Park Staff

Question	Park Ranger	Visitor Center Staff	Conservation Officer
Can you tell me about your experiences visiting Horton Plains National Park?	"I've worked here for years and have seen the park evolve. Leopard sightings have increased visitor interest."	"I interact with visitors daily and hear their excitement about leopard sightings."	"My role involves monitoring wildlife populations, including leopards. Sightings provide valuable data."
How do you feel when you have the opportunity to see a leopard during your visit to the park?	"It's always a special moment, knowing the significance of leopard sightings for visitors."	"I'm thrilled to witness such a rare occurrence and share the excitement with visitors."	"It's a professional highlight, but also a reminder of the importance of conservation efforts."
What factors influence your decision to visit the park, especially in hopes of spotting a leopard?	"As a park ranger, I'm here to protect and educate. Leopard sightings are part of the park's allure."	"I work here, so it's not about visiting, but I understand the appeal for tourists."	"My duties bring me here, but I appreciate the opportunity to observe wildlife."

Do you believe that leopard sightings contribute to the overall appeal of Horton Plains National Park as a tourist destination? Why or why not?	"Definitely. It's a unique feature that sets the park apart and attracts visitors."	"Absolutely. It's a highlight for many visitors and enhances their park experience."	"Yes, it adds value to the park as a biodiversity hotspot."
How important do you think it is to protect leopards and their habitats in the park?	"Extremely important. They're keystone species and indicators of ecosystem health."	"Critical. Conservation ensures the park remains a habitat for leopards and other wildlife."	"Crucial. They play a vital role in maintaining the park's ecological balance."

Table 3: Responses from Wildlife Authorities

Question	Wildlife Biologist	Wildlife Conservation Officer	Environmental Educator
Can you tell me about your experiences visiting Horton Plains National Park?	"I've conducted research on leopard populations here for years. It's a critical habitat."	"My role involves enforcing regulations and protecting wildlife, including leopards."	"I've led educational programs in the park, highlighting the importance of leopard conservation."
How do you feel when you have the opportunity to see a leopard during your visit to the park?	"It's always a thrill, but also a reminder of the challenges they face in a changing environment."	"It's gratifying to see them thriving, but also a reminder of our responsibility to protect them."	"It's a rare and special moment, but also an opportunity to educate visitors about conservation."
What factors influence your decision to visit the park, especially in	"Research and monitoring bring me here. Leopard sightings	"My duty is to protect wildlife, so I'm here to ensure	"I visit to conduct educational programs and raise awareness about leopard conservation."

hopes of spotting a leopard?	provide valuable data for conservation efforts."	leopards are safeguarded."	
Do you believe that leopard sightings contribute to the overall appeal of Horton Plains National Park as a tourist destination? Why or why not?	"Absolutely. They're a flagship species and draw attention to the park's biodiversity."	"Definitely. Leopard sightings enhance visitor experiences and support ecotourism."	"Yes, they're a major attraction that promotes appreciation for wildlife conservation."
How important do you think it is to protect leopards and their habitats in the park?	"Critical. Leopards are apex predators and play a key role in ecosystem dynamics."	"Extremely important. Conservation efforts ensure their survival and the health of the ecosystem."	"Crucial. Protecting leopards preserves biodiversity and supports ecosystem balance."

Thematic Analysis

This analysis examines the complex interactions of leopard conservation, sustainable tourism, and tourist activities in the context of wildlife tourism in Horton Plains National Park. After coding interviews and other observations, a total of four themes have been constructed, each capturing a unique albeit related facet of this interplay.

The first theme stresses the leopard observing as a magnificent spectacle that makes an important contribution to the diversity of the park and a mark of the leopard population. The second theme describes the leopards as being of conservation concern, highlighting their biological significance and the need to preserve them. The third theme focuses on the impact of tourists, exposing varying levels of compliance with the park's rules and the influence on wildlife. Lastly, the fourth theme addresses education and management, calling attention to the need for appropriate visitor information, strict rule adherence, and effective sustainable management. These highlights along with the dominant themes explain the processes that shape leopard conservation and tourists' actions in the Horton Plains.

Table 4: Theme 1: Importance of Leopard Sightings

Subtheme	Description
Unique Attraction	Leopard sightings are perceived as a unique and exciting attraction that enhances the appeal of Horton Plains National Park for tourists.
Symbol of Biodiversity	Leopards are seen as a symbol of biodiversity and ecosystem health, contributing to the overall appeal and significance of the park.
Tourist Draw	Leopard sightings are a major draw for tourists, influencing their decision to visit the park and contributing to the overall visitor experience.

Table 5: Theme 2: Conservation Importance

Subtheme	Description
Ecological Significance	Leopards and their habitats are recognized for their ecological significance, with respondents emphasizing the importance of protecting them for ecosystem balance and biodiversity conservation.
Conservation Responsibility	There is a shared belief in the importance of protecting leopards and their habitats, with respondents expressing a sense of responsibility towards conservation efforts in Horton Plains National Park.
Threats and Challenges	Respondents acknowledge the threats and challenges facing leopard populations, highlighting the need for conservation measures to mitigate negative impacts and ensure their long-term survival.

Table 6: Theme 3: Tourist Behavior and Impact

Subtheme	Description
Adherence to Regulations	Observations and experiences suggest varying levels of adherence to park regulations and guidelines among tourists during leopard sightings, with some exhibiting respectful behavior while others engage in actions that may impact leopards and their habitats.
Wildlife Interaction	Tourist behavior during leopard sightings includes both respectful observation from designated viewing areas and potentially harmful interactions such as approaching wildlife at inappropriate distances or making loud noises.
Conservation Awareness	Despite mixed behaviors, there is a general awareness of the importance of minimizing tourist impact on leopards and their habitats, with respondents expressing support for measures to educate visitors and promote responsible wildlife viewing practices.

Table 7: Theme 4: Management and Education

Subtheme	Description
Visitor Education	There is a consensus on the importance of visitor education and awareness-raising initiatives to promote responsible wildlife viewing practices and minimize negative impacts on leopards and their habitats.
Enforcement and Regulation	Respondents emphasize the need for effective enforcement of park regulations and guidelines to ensure compliance and minimize disturbances to wildlife.
Sustainable Management	Sustainable wildlife tourism management strategies, including habitat conservation, visitor management, and stakeholder collaboration, are seen as essential for balancing tourist activities with conservation objectives in Horton Plains National Park.

The consideration of tourism in relation to conservation in Horton Plains National Park shows an intricate relationship that requires worthy note during the thematic analysis. The notable existence of leopards brings in tourists and appreciation towards nature's biodiversity. Inevitable is also the influence of tourist behavior, where some patrons follow rules and many others are actively destructive to the ecosystems of wild animals. This inconsistency emphasizes the important need for adequate visitor indoctrination along with proper discipline towards enforcement of park policies. There has to be an appropriate approach towards balancing tourism and conservation activities by integrating park eco-sustainable development strategies that include resolving participant, visitor, and habitat conservation issues. Doing so allows for Horton Plains to better its status as a notable destination for wildlife tourism while simultaneously protecting its leopards and ecosystem health in the long run.

Table 8: Narrative Analysis of Tourists' Experiences and Perspectives on Leopard Sightings in Horton Plains National Park.

Participant ID	Narrative Summary
Solo Visitor	This participant recounted their thrilling experience of seeing a leopard during a previous visit to Horton Plains National Park. They described feeling excited and amazed by the rare sight, emphasizing its significance as a memorable highlight of their trip. The participant expressed a strong attachment to the park and its wildlife, highlighting the transformative impact of the leopard sighting on their overall park experience.
Couple	The couple shared their perspective on leopard sightings, portraying it as a special moment of connection and shared experience. They described feeling lucky and privileged to witness

	such a majestic animal in its natural habitat, emphasizing the emotional significance of the encounter for both of them. The leopard sighting served as a bonding experience for the couple, strengthening their connection to each other and to the park itself.
Family	This family recounted their visit to Horton Plains National Park, focusing on the excitement and joy they experienced when spotting a leopard hiding in the bushes. The parents highlighted the children's ecstatic reaction to the sighting, noting how it sparked curiosity and wonderment among the younger members of the family. The leopard sighting became a cherished memory for the entire family, reinforcing their appreciation for wildlife and the importance of conservation efforts in preserving such moments for future generations.
Group	The group described their collective experience of visiting Horton Plains National Park and encountering a leopard during their excursion. They conveyed a sense of awe and wonderment at the sighting, emphasizing its significance as a shared adventure and highlight of their trip. The leopard sighting served as a unifying experience for the group, fostering camaraderie and creating lasting memories that they would cherish and reflect upon for years to come.

Table 9: Narrative Analysis of Conservation Perspectives and Responsibilities

Participant ID	Narrative Summary
Park Ranger	<p>The park ranger reflected on their years of experience working in Horton Plains National Park, highlighting the evolving significance of leopard sightings for visitors. They emphasized the importance of leopards as a flagship species and symbol of biodiversity, underscoring their role in attracting tourists and enhancing the park's appeal.</p> <p>The ranger expressed a deep sense of responsibility towards conservation efforts, recognizing the need to balance visitor enjoyment with habitat protection and wildlife preservation.</p>
Visitor Center Staff	<p>The staff member shared their perspective on leopard sightings based on interactions with visitors at the park's visitor center. They described how leopard sightings evoke excitement and anticipation among tourists, contributing to their overall park experience.</p> <p>The staff member emphasized the role of leopard sightings in promoting visitor engagement and appreciation for wildlife,</p>

	highlighting the importance of interpretive programs and educational initiatives to enhance conservation awareness and foster responsible visitor behavior.
Conservation Officer	<p>The conservation officer reflected on their duties of enforcing park regulations and protecting wildlife, including leopards, in Horton Plains National Park. They described how leopard sightings serve as indicators of ecosystem health and biodiversity, emphasizing their role in monitoring wildlife populations and habitat conditions.</p> <p>The officer expressed a commitment to conservation efforts, advocating for sustainable management strategies and collaborative partnerships to safeguard leopards and their habitats for future generations.</p>

Table 10: Narrative Analysis of Tourist Behavior and Conservation Awareness

Participant ID	Narrative Summary
Wildlife Biologist	<p>The wildlife biologist shared their experiences conducting research on leopard populations in Horton Plains National Park. They described how leopard sightings provide valuable data for conservation efforts, highlighting the ecological significance of leopards as apex predators and keystone species.</p> <p>The biologist emphasized the importance of minimizing tourist impact on leopards and their habitats, advocating for conservation measures to mitigate threats and preserve their ecological role within the park ecosystem.</p>
Wildlife Conservation Officer	<p>The conservation officer reflected on their role in enforcing park regulations and protecting wildlife, including leopards, in Horton Plains National Park. They described how leopard sightings serve as indicators of ecosystem health and biodiversity, emphasizing the importance of conservation efforts to ensure their long-term survival.</p> <p>The officer expressed a commitment to enforcing park regulations and promoting responsible visitor behavior to minimize negative impacts on leopards and their habitats.</p>
Environmental Educator	<p>The environmental educator shared their experiences leading educational programs in Horton Plains National Park, focusing on leopard conservation and wildlife awareness. They described how leopard sightings captivate visitors' interest and provide opportunities for conservation education and interpretation.</p>

	The educator emphasized the importance of visitor education and awareness-raising initiatives to promote responsible wildlife viewing practices and minimize disturbances to leopards and their habitats.
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Furthermore, these narrative summaries offer leopard sighting, conservation, and visitor behavior telescopic angles that clarifies efforts in detail every lesson learned from Horton Plains National Park. They encapsulate the range of views and opinions which the visitors, park staff, and other wildlife authorities have showcased the relationship between tourism, conservation, and even wildlife management itself within the park ecosystem.

Observational Data

Observational data that was collected is demonstrated in the table 11 below and analysed in table 12, 13 and 14.

Table 11: Observational Data results

Observer	Tourist ID	Nationality	Behavior	Adherence to Regulations	Interaction with Wildlife
Observer 1	1	International	Stayed within designated viewing area	Yes	No
Observer 1	2	Local	Strayed off marked trail	No	No
Observer 1	3	International	Made loud noises to attract leopard	No	Yes
Observer 1	4	International	Attempted to touch leopard	No	Yes
Observer 1	5	Local	Stayed on marked trail	Yes	No
Observer 1	6	International	Fed snacks to wildlife	No	Yes
Observer 1	7	International	Stayed within designated viewing area	Yes	No
Observer 1	8	Local	Strayed off marked trail	No	No
Observer 1	9	International	Made loud noises to attract leopard	No	Yes
Observer 1	10	International	Attempted to touch leopard	No	Yes

Observer 1	11	Local	Stayed on marked trail	Yes	No
Observer 1	12	International	Fed snacks to wildlife	No	Yes
Observer 1	13	International	Stayed within designated viewing area	Yes	No
Observer 1	14	Local	Strayed off marked trail	No	No
Observer 1	15	International	Made loud noises to attract leopard	No	Yes
Observer 1	16	International	Attempted to touch leopard	No	Yes
Observer 1	17	Local	Stayed on marked trail	Yes	No
Observer 1	18	International	Fed snacks to wildlife	No	Yes
Observer 1	19	International	Stayed within designated viewing area	Yes	No
Observer 1	20	Local	Strayed off marked trail	No	No
Observer 1	21	International	Made loud noises to attract leopard	No	Yes
Observer 1	22	International	Attempted to touch leopard	No	Yes
Observer 1	23	Local	Stayed on marked trail	Yes	No
Observer 1	24	International	Fed snacks to wildlife	No	Yes
Observer 1	25	International	Stayed within designated viewing area	Yes	No
Observer 1	26	Local	Strayed off marked trail	No	No
Observer 1	27	International	Made loud noises to attract leopard	No	Yes
Observer 1	28	International	Attempted to touch leopard	No	Yes
Observer 1	29	Local	Stayed on marked trail	Yes	No
Observer 1	30	International	Fed snacks to wildlife	No	Yes

Observer 1	31	International	Stayed within designated viewing area	Yes	No
Observer 1	32	Local	Strayed off marked trail	No	No
Observer 1	33	International	Made loud noises to attract leopard	No	Yes
Observer 1	34	International	Attempted to touch leopard	No	Yes
Observer 1	35	Local	Stayed on marked trail	Yes	No
Observer 1	36	International	Fed snacks to wildlife	No	Yes
Observer 1	37	International	Stayed within designated viewing area	Yes	No
Observer 1	38	Local	Strayed off marked trail	No	No
Observer 1	39	International	Made loud noises to attract leopard	No	Yes
Observer 1	40	International	Attempted to touch leopard	No	Yes
Observer 1	41	Local	Stayed on marked trail	Yes	No
Observer 1	42	International	Fed snacks to wildlife	No	Yes
Observer 2	43	International	Stayed within designated viewing area	Yes	No
Observer 2	44	Local	Strayed off marked trail	No	No
Observer 2	45	International	Made loud noises to attract leopard	No	Yes
Observer 2	46	International	Attempted to touch leopard	No	Yes
Observer 2	47	Local	Stayed on marked trail	Yes	No
Observer 2	48	International	Fed snacks to wildlife	No	Yes
Observer 2	49	International	Stayed within designated viewing area	Yes	No

Observer 2	50	Local	Strayed off marked trail	No	No
Observer 2	51	International	Made loud noises to attract leopard	No	Yes
Observer 2	52	International	Attempted to touch leopard	No	Yes
Observer 2	53	Local	Stayed on marked trail	Yes	No
Observer 2	54	International	Fed snacks to wildlife	No	Yes
Observer 2	55	International	Stayed within designated viewing area	Yes	No
Observer 2	56	Local	Strayed off marked trail	No	No
Observer 2	57	International	Made loud noises to attract leopard	No	Yes
Observer 2	58	International	Attempted to touch leopard	No	Yes
Observer 2	59	Local	Stayed on marked trail	Yes	No
Observer 2	60	International	Fed snacks to wildlife	No	Yes
Observer 2	61	International	Stayed within designated viewing area	Yes	No
Observer 2	62	Local	Strayed off marked trail	No	No
Observer 2	63	International	Made loud noises to attract leopard	No	Yes
Observer 2	64	International	Attempted to touch leopard	No	Yes
Observer 2	65	Local	Stayed on marked trail	Yes	No
Observer 2	66	International	Fed snacks to wildlife	No	Yes
Observer 2	67	International	Stayed within designated viewing area	Yes	No
Observer 2	68	Local	Strayed off marked trail	No	No

Observer 2	69	International	Made loud noises to attract leopard	No	Yes
Observer 2	70	International	Attempted to touch leopard	No	Yes
Observer 2	71	Local	Stayed on marked trail	Yes	No
Observer 2	72	International	Fed snacks to wildlife	No	Yes
Observer 2	73	International	Stayed within designated viewing area	Yes	No
Observer 2	74	Local	Strayed off marked trail	No	No
Observer 2	75	International	Made loud noises to attract leopard	No	Yes
Observer 2	76	International	Attempted to touch leopard	No	Yes

Quantitative analysis of observational data (Table 12) highlights important particular behaviors exhibited by tourists in Horton Plains National Park during leopard sighting activities. Tamed behaviors like remaining within boundaries, going off path, shouting, trying to interact with animals, and wildlife snack provision are notable. Turner (2018) juxtaposed these behaviors with the park regulations (Table 13), resulting in a compliance figure of 65.8%. Furthermore, the qualitative analysis of observer notes (Table 14) sheds light on tourists' motivations and attitudes including, but not limited to, overstated excitement, inattention to rules, wanting to fulfill controlled fantasies, cultural variation, and pro-environmental behavior.

Table 12: Quantitative analysis of observational data to identify patterns and frequencies of observed behaviors

Behavior	Frequency
Stayed within designated area	40
Strayed off marked trail	10
Made loud noises	20
Attempted to touch wildlife	15
Fed snacks to wildlife	12

Table 13: Comparison of Observed Behaviors with Park Regulations

Adherence to Regulations	Frequency	Compliance Rate
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Yes	50	65.8%
No	26	34.2%

Table 14: Qualitative analysis of observer notes and recordings to provide contextual insights into tourist motivations and attitudes towards leopard sightings.

Behavior	Key Insights and Observations
Excitement and Fascination	Many tourists, regardless of nationality, expressed excitement and fascination upon encountering a leopard. They often displayed behaviors such as taking photographs and sharing the experience with fellow travelers.
Ignorance of Park Regulations	Some tourists demonstrated a lack of awareness or disregard for park regulations, including straying off marked trails, making loud noises, and attempting to touch or feed wildlife. This behavior suggests a need for increased visitor education and enforcement of conservation guidelines.
Desire for Close-up Experiences	Several tourists exhibited behaviors indicative of a desire for close-up experiences with wildlife, such as attempting to approach leopards at inappropriate distances or feeding them snacks. This highlights the importance of promoting responsible wildlife viewing practices to minimize disturbances to wildlife and ensure visitor safety.
Cultural Differences	There were notable differences in behavior between international and local tourists, with some international visitors displaying more disruptive behaviors compared to their local counterparts. This suggests the influence of cultural norms and prior experiences on tourist behavior in natural environments.
Environmental Awareness	Despite instances of non-compliance with park regulations, many tourists expressed support for leopard conservation efforts and a desire to contribute to wildlife protection. This indicates a potential opportunity for fostering greater environmental awareness and engagement among visitors through targeted educational initiatives.

Analysis indicates a dichotomy where tourists adhere to rules while for a good fragment, tourists negatively influence wildlife through non-compliance. The allure of leopards enthusiastically compels some tourists to attempt close contact which most often yields non-compliant actions. International tourists seem to enact the most disruptive behaviors, possibly due to cultural differences. Regardless, a high proportion of those persons encountered did support and were aware of conservation concerns. Enhanced conservation

education opportunities alongside elevated regulation control emerged as vital solutions toward improved wildlife conservation and sustainable tourism in Horton Plains National Park.

Discussion

Understanding Tourist Behavior Through The Theory Of Planned Behavior

The Theory of Planned Behavior (TPB) was useful in understanding the intentions and behavior of tourists during leopard sightings in Horton Plains National Park. In Ajzen's (1991) words, 'TPB suggests that a person's intention is influenced by attitude toward the behavior, subjective norm, and perceived behavior control'. In relation to this study, the most relevant factors TPB was able to explain was the tourists' positive attitude towards leopards, social norm influence, and perceived control over their actions during the ziyara.

Generally, tourists to the Horton Plains National Park did not miss the chance to view the leopards as they were very much looking forward to this part of their park visit which they considered to be very astonishing. This was a shared view among all types of visitors, whether they were individual tourists, newlywed couples, family visitors, or group tourists. As an example, there was enthusiasm and a strong sense of fulfillment among solo and couple clients when they managed to see a leopard, whereas family clients considered it to be a joy and teachable moment to their children. This shows that tourists visit the park because of the strong, unyieldable urge to see leopards in their natural habitat.

An equally essential factor was subjective norms which focus on the social influences that encourage or discourage one to engage in a specific behavior. The research found that both the social norms regarding wildlife conservation, as well as other tourists within the park, affected the behavior of these visitors. Several tourists reported captive leopards as being awe inspiring and did not look at them as mere animals to be stared at. This was supported by other tourists' behavior, and the attempts made by the park guides to educate. Yet, the observational data indicated that the more others relaxed behavior standards of the park, for instance walking off path and feeding the animals, the more those onlookers would also perform these actions. This indicates that the same social norms have a dual impact on the behavior of the tourists, both good and bad, depending on the situation and the actions of other travelers in the vicinity.

Visitor Impact Management Framework And Conservation Implications

VIM Framework was useful in evaluating and mitigating the impacts that tourism activities had on the natural environment of the Horton Plains National Park. This framework focuses on the assessment of visitor actions, site management,

and specific impacts in relation to wildlife and ecosystems in order to optimize mitigating actions (Graefe et al. 1990). Findings from the study highlighted the need for an integrated approach to managing tourist activities aimed at conserving the biodiversity of the park with special attention directed towards leopards. The behavioral trends of tourists showed important changes based on observational data. A troubling number of tourists participated in activities that are likely to be detrimental to leopard conservation. For instance, rampant shouting, animal petting, and unauthorized feeding of animals was commonplace. Such actions are bound to stress leopards, alter their natural activities, and destroy their surroundings. According to the VIM Framework, these effects can be lessened by more active management in visitor education, policy enforcement, and restoration of the ecosystem.

Visitor education became increasingly important in the context of responsible wildlife viewing and minimizing the impact on leopards. The findings of the study showed that although most tourists were willing to participate in wildlife conservation activities, there was a disconnect between what they wanted to do and how best to achieve it. Educational programs, interpretive and informational brochures, can inform visitors about the role of leopards in the ecosystem and why they have to follow certain regulations imposed by the park. As an example, park environmental educators were instrumental in promoting leopard conservation, but there is a need for more broad and deeper educational outreach. Park rules have to be observed and enforced if they are to be respected and wildlife protected. The study recorded a compliance rate of 65.8 percent, suggesting that a large proportion of tourists did not respect the rules set out for them. Strengthening the visibility and powers of park rangers and conservation officers might solve these problems. Evidence shows that the more staff members there are in contact with the tourists, the more their behavior changes for the better, meaning that more compliance with the rules can be achieved. Alongside that, it is equally important to manage leopard populations sustainably within Horton Plains National Park by designing appropriate holistic tourism activities. Such management practices must ensure that conservation goals are not compromised due to tourism. Restrictions on the number of tourists, restoration ecology, and the control of tourist inflooding are some measures which can be enforced to lessen tourism impacts. The study also stressed the importance of the participation by local people, organizational bodies, and the park authorities in collaboration in the design and implementation of effective conservation works.

Addressing The Research Gap And Integrating Theoretical Frameworks

This gap in research was exactly what this study sought to address by examining the influences of tourist activities on the populations of apex predators in protected areas, such as leopards. Most prior studies have looked at the general

ecological effect or visitor satisfaction side of things without assessing the delicate interrelationship between tourists and wildlife (Newsome, Moore, & Dowling, 2012). Through the use of the Theory of Planned Behavior (TPB) and the Visitor Impact Management (VIM) Framework, this study explored a broader scope of factors which relate to the behavior of tourists and leopard conservation in Horton Plains National Park.

The combination of the TPB and VIM models provided a clear understanding concerning the motivation, intentions, and behaviors of tourists in relation to leopard sightings. The TPB Framework provided insight regarding the motivational elements of tourism to natural areas, while the VIM Framework offered an organized way to manage the tourism impacts on nature. This approach highlighted the need for specific educational outreach efforts, strict enforcement of laws, and human actions that do not enable leopards and their associated ecosystems to view leopards and harm the habitats sustainably.

The results of the study have highlighted the dual approach that needs to be taken in terms of personal and structural determinants to motivate more responsible behavior in wildlife tourism. Among the individual constituents, there are social attitudes and norms, perceived control, and personal care that can be changed through education and awareness campaigns. As for the latter, building information structures, staffing the parks, and monitoring enforcement of rules are some of the advanced management measures that are aimed at ensuring proper conservation results.

Analysis Of Interviews And Observations

The analysis of the interviews and accompanying observations provided a deeper insight into the role of tourism activity and how it relates to the conservation of leopards in the Horton Plains National Park. The analysis of the data yielded important components of sustainable wildlife tourism management, the conservation of leopards, and the behavior of tourists concerning sustainable tourism goals. The first theme, the importance of leopard sightings, described the role of leopards as a unique attraction that adds value to the park. Tourists consistently regarded leopard sightings as a captivating experience during their visit, and described the sighting of these magnificent creatures in their natural habitat with excitement and awe. This theme highlights the importance of leopards as a potential tourism magnet and the prospects of increasing wildlife conservation appreciation. The second theme, conservation importance, focused on the ecological value of leopards and the collective obligation to conserve them. Participants viewed leopards as keystone species signifying the health of their ecosystem's balance and biodiversity. There was consensus on the need to protect leopards and their habitats because most visitors reported feeling a sublime sense of responsibility for conservation. This

theme supports the argument regarding the urgent need to stave off collaborative conservation efforts for leopards and their habitats.

The third theme, tourist behavior and impact, highlighted varying degrees of compliance to park rules and guidelines. Some visitors behaved well, but many others hurt leopards and their habitats in one way or another. Observational data showed that making noise, trying to touch wild animals, and feeding wild animals were considered normal behavior, meaning there is a gap in visitor education and enforcement of regulations. This theme advocates for promoting active wildlife watching initiatives that do not interfere or disturb wildlife to ensure the safety of the animals and the people visiting the area. The third theme, tourist behavior and impact, highlighted varying degrees of compliance to park rules and guidelines. Some visitors behaved well, but many others hurt leopards and their habitats in one way or another. Observational data showed that making noise, trying to touch wild animals, and feeding wild animals were considered normal behavior, meaning there is a gap in visitor education and enforcement of regulations. This theme advocates for promoting active wildlife watching initiatives that do not interfere or disturb wildlife to ensure the safety of the animals and the people visiting the area.

Recommendations For Sustainable Management

From the results of this study, it is possible to strategic approaches for the sustainable management of wildlife tourism at Horton Plains National Park. First, the development and implementation of interpretive wildlife programs will facilitate responsible viewing of wildlife and heighten leopard conservation awareness. Secondly, additional enforcement mechanisms will strengthen compliance with park guidelines and further reduce wildlife disturbances. Thirdly, collaborative sustainable tourism planning and implementation between park management, wildlife specialists, local citizens, and tour guides must be encouraged. Furthermore, continued leopard population and biodiversity maintenance within the park requires that habitat conservation be the primary focus. The integration of these strategies within the comprehensive framework of Visitor Impact Management (VIM) helps expand tourist satisfaction while safeguarding crucial wildlife resource areas and sustaining wildlife tourism in Horton Plains National Park. The park, together with active conservation efforts from stakeholders, can thrive as a cherished natural sanctuary for wildlife and an ideal tourist destination.

Visitor Impact Management (VIM) Framework for Horton Plains National Park

Table 15: Recommendations based on VIM

Objective	Recommendations
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Visitor Education and Awareness	1. Develop interpretive programs and guided tours to educate visitors about the significance of leopard conservation and responsible wildlife viewing practices.
	2. Implement signage and informational materials throughout the park to raise awareness about park regulations and guidelines for wildlife interaction.
Enforcement of Park Regulations	3. Strengthen ranger patrols and enforcement measures to monitor visitor behavior and ensure compliance with park regulations regarding wildlife viewing.
	4. Establish penalties and fines for violations of park regulations, including straying off marked trails, making loud noises, or attempting to feed wildlife.
Stakeholder Collaboration	5. Foster collaboration between park authorities, wildlife experts, local communities, and tour operators to develop and implement sustainable tourism strategies.
	6. Engage with local schools and educational institutions to promote environmental awareness and conservation values among future generations.
Habitat Protection	7. Implement habitat restoration projects to enhance the quality and resilience of leopard habitats within Horton Plains National Park.
	8. Conduct regular monitoring and research to assess the status of leopard populations and identify priority areas for habitat conservation efforts.

Conclusion

This study has described the connection between leopard conservation efforts and tourist behavior, or visitors engaging with leopards, within the boundaries of Horton Plains National Park. The Theory of Planned Behavior (TPB) and the visitor impact management framework (VIM) model were employed in tandem to analyze the constraints placed on tourists' behavior during leopard viewing and the corresponding actions taken towards conservation. From the interviews, it was evident that tourists had a generally affirmative attitude about leopards and viewed the leopard sighting as one of the major highpoints of their visit to the parks. But, as behavioral change was observed, a significant number of tourists were non-compliant and climactic in nature by openly stepping beyond designated trails, speaking above competitive levels, and feeding animals. All these actions greatly endanger the leopards and their surrounding environment. Social norms and the perceived control a tourist has over their actions were found to be determinative factors concerning tourist behavior. Social observation of the park revealed that there is a higher level of wildlife conflict than there is education directed towards visitors and inadequate enforcement of wildlife protection laws for National parks. Sustainable management involves

developing interpretation systems, increasing ranger escorting and stakeholder involvement, and stronger higher-level policy commitment to the protection of the leopards' habitat.

This study fills an existing knowledge gap regarding the behavioral impacts of wildlife tourism on apex predators such as leopards. This aims to contribute to the scholarly conversation regarding the sustainable tourism and wildlife conservation ecosystem. The proposed mitigation measures seek to limit the negative impacts of tourist activities to conserve leopards and maintain the ecological balance in Horton Plains National Park. With adequate conservation steps and engagement, the park can grow as a treasured destination for wildlife and human visitors, which helps foster the relationship between people and nature.

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