

STUDY ON INTERNATIONAL TOURISTS' AWARENESS OF SRI LANKA'S ASTRO-TOURISM POTENTIAL

G. R. Nimanshika¹

J. N. D. Jayathunga²

Y. L. Ramawickrama³

ABSTRACT: Astro-tourism, an emerging subset of the wider tourism sector, is dedicated to enticing individuals who are interested in astronomy and participation in Astronomical events. The primary objective of this study is to examine the level of awareness among international tourists regarding Sri Lanka's Astro-tourism sector and identify any latent opportunities that the industry may have. Using methods such as questionnaires and in-person interviews, this study determines how well-informed international tourists are about Sri Lanka's Astro-tourism attractions. In order to acquire insights into the expertise and interest of visitors, travel agencies, and important stakeholders in astronomical experiences, data was collected through contacts with these groups. For data analysis, SPSS and Microsoft Excel statistical software were utilized. The study also looks into the existing facilities and services in Sri Lanka that have a focus on Astro-tourism. The preliminary results show that international visitors visiting Sri Lanka have a moderate level of knowledge of the potential of Astro-tourism. The majority of people (80%) who took the survey were keen on having memorable adventures, but only a few (20%) knew about the country's astronomical attractions. This reveals a huge gap in promotional activities and communication methods to promote Sri Lanka as an emergent Astro-tourism destination. Sri Lanka has different environments that offer a diversity of astronomical experiences, which is an important component of its Astro-tourism potential. A wide range of landscapes, from verdant highlands to sandy beaches, offer ideal conditions for stargazing and the study of the night sky. Important measures in fostering this distinct industry include establishing sustainable practices, reducing light pollution, and establishing designated areas that are receptive to Astro-tourism. This study provides an innovative foundation for future research on Sri Lanka's Astro-tourism industry, emphasizing the importance of educating

¹ G. R. Nimanshika, Department of Geography, Faculty of Arts, University of Colombo, Sri Lanka, Email: 2019ba23411@stu.cmb.ac.lk

² J. N. D. Jayathunga, Department of Geography, Faculty of Arts, University of Colombo, Sri Lanka.

³ Y. L. Ramawickrama Sri Lanka Planetarium, Prof Stanley Wijesundera Mawatha, Colombo 07, Sri Lanka.

foreign visitors. The study that can be helpful for businesses, policymakers, and other interested parties who are looking to introduce new and innovative fields in the tourism industry in Sri Lanka in a sustainable manner.

KEYWORDS: Astro -tourism, awareness, international tourists, potential, Sri Lanka

INTRODUCTION

In recent years, the tourism industry has witnessed a surge in interest in niche segments, reflecting a growing trend toward experiential travel. One such emerging niche is Astro-tourism, which caters to individuals fascinated by astronomy and celestial events. Astro-tourism, a niche segment within the global tourism industry, caters to individuals with a profound fascination for astronomy and celestial exploration. Astro-Tourism, defined by John Barentine of the International Dark-Sky Association as “any kind of tourism that involves the night sky or visiting astronomy facilities like observatories and combining that with a wider sense of ecotourism where visitor experience is primarily about interaction with nature. The thing about stargazing is that, in theory, you can do it from anywhere in the world. You can look up at the night sky for your favorite constellation or point a telescope at the International Space Station when it passes close to your latitude and longitude. Well, that used to be the situation. You see, darkness is necessary for the best conditions for extra-terrestrial tourism. Our world is more illuminated than ever as cities develop and suburban sprawl spreads. As a result, light pollution, which covers 80% of the earth’s surface, including 99% of the skies in America and Europe, prevents us from seeing what is happening in space. For 80% of North Americans, the Milky Way is only visible in the form of a candy bar. They can no longer see the galaxy itself above them. The solar eclipse of 2017—during which an estimated seven million people traveled to and through America to be in its path—is another factor contributing to the rise in Astro-tourism. It was a celebration with solar curtains, daytime darkness, and a special view into the skies above that opened up new possibilities for both tourists and destinations. The increasing demand for the night sky is due to the combined efforts of astronomers, academics, ecologists, and associated movements to defend starry skies. These efforts have led to the creation of dark-sky reserves and starlight parks worldwide, which consist of spaces generally linked to intact natural areas with low air pollution values and far from light pollution sources (Tapada et al.,2021). Thus, Astro-tourism has become an important way to promote, use and defend night skies because of consumers’ growing awareness of this resource (Iwaniszewski, 2015; Cooper et al.,2018).

Tourism is the third largest foreign exchange-earning industry in Sri Lanka's industrial sector. The consequences of the COVID-19 epidemic and the ongoing economic crisis have undermined this sector since 2020 (Sri Lanka Tourism Development Authority, 2022). The tourism industry in the country can be boosted as the best solution to earn foreign exchange and the current shortage of dollars. Astro-tourism industry can be introduced to Sri Lanka on the basis of a sustainable tourism industry concept without incurring huge costs. Through that, Sri Lanka's tourism industry can be diversified. Introducing the star tourism industry of observing the night sky, which is still identified as an untapped potential resource, to our country is a great opportunity to face the competitive global tourism industry. Sri Lanka, nestled in the Indian Ocean with its pristine skies and diverse landscapes, presents an untapped potential for Astro-tourism. The country's strategic geographical location and minimal light pollution offer unparalleled opportunities for stargazing and astronomical observation. Coupled with its rich cultural heritage and natural beauty, Sri Lanka stands poised to emerge as a premier destination for Astro-tourism enthusiasts worldwide.

Despite its potential, the extent of awareness among international tourists regarding Sri Lanka's star tourism industry remains relatively unexplored. Understanding this awareness level is crucial for identifying opportunities and formulating strategies to capitalize on Sri Lanka's Astro-tourism potential effectively. This research aims to bridge this gap by studying the existing awareness of international tourists towards the potential of Sri Lanka's star tourism industry.

The significance of this study lies in its potential to shed light on the current state of awareness among international tourists regarding Sri Lanka's Astro-tourism offerings. By examining factors such as age demographics, reasons for visiting Sri Lanka, and previous visit frequency, the research seeks to provide insights into tourists' perceptions and interests related to star tourism. Furthermore, by exploring tourists' knowledge of factors influencing the development of the Astro tourism industry in Sri Lanka, including awareness levels, passion for astronomical travel, and perceived importance of related factors, the study aims to identify opportunities for industry growth and development.

The findings of this research are expected to contribute to the existing body of knowledge on Astro-tourism and tourism development in Sri Lanka. Moreover, the insights gleaned from this study can inform policymakers, tourism stakeholders, and industry players in designing targeted marketing strategies, developing relevant infrastructure, and fostering collaborations to promote Sri Lanka as a premier destination for Astro-tourism.

In essence, this research sets out to explore the existing awareness of international tourists towards the potential of Sri Lanka's star tourism industry, with the overarching goal of fostering sustainable growth and development in this niche segment of the tourism industry.

LITERATURE REVIEW

Astro-tourism, a niche within ecotourism and scientific tourism, involves organizing travel to experience diverse astronomical phenomena not readily available at one's place of residence. It is inherently linked to the preservation of the night sky, making it morally viewed as a sustainable and eco-touristic activity. While Astro-tourism can take non-sustainable forms, such as packages including night-fishing or night-hunting, it is ideally centered around four recognized modalities: Astrophotography, amateur Astro-tourism, night Astro-tourism, and spiritual Astro-tourism (Cater, 2010; Weaver, 2011).

The emergence of Astro-tourism is attributed to its reliance on physical location characteristics, encompassing both earthly and celestial elements (Collison & Poe, 2013; Keller, 2010). This form of tourism capitalizes on travelers' interest in sky-related activities, predominantly astrophotography and dark sky viewing, often set amidst natural landscapes (Soleimani et al., 2019). Defined by Fayos-Solé et al. (2014) as tourism leveraging unpolluted night skies and scientific knowledge, Astro-tourism directs visitor focus towards observing and appreciating celestial events in their natural setting (Weaver, 2011). It is heralded as a noble means to connect visitors with nature, constituting a form of ecotourism (Fayos Solé et al., 2014).

Niche tourism strategies, such as Astro-tourism, cater to distinct market segments, emphasizing location-specific experiences that are community-oriented, protective, and sustainable (Chan & Bhatta, 2013; Espiner et al., 2017). This specialization aligns well with rural tourist destinations, fostering partnerships between local communities, scientific institutions, and tourism stakeholders (Fayos-Solé et al., 2014). Tour guiding and interpretation play pivotal roles in enhancing visitor experiences, requiring expert knowledge and supervision (Ingle, 2010).

Astro-tourism's market perception often portrays it as expensive and demanding high-end equipment, yet tours are offered both day and night, with online options expanding accessibility (Collison & Poe, 2013). Integrating standard tourist infrastructure with cutting-edge audio-visual equipment further enhances the experience (Molokacova & Domaracka, 2011).

The term "Astro-Tourist" denotes individuals undertaking leisure activities solely related to astronomy, showcasing a growing interest in Astro-tourism as a specialized industry (Fayos-

Solé et al., 2014; Muir, 2014). For developing nations, Astro-tourism serves as a platform to showcase natural assets without the need for significant infrastructure investments (Belij & Tadic, 2015).

Astro-tourism's multifaceted nature intersects various social relationships, presenting opportunities for low-density areas to leverage this specialized form of tourism (Rodrigues et al., 2015; Jacobs et al., 2019). The emphasis on Astro-tourism reflects a growing consumer trend valuing the night sky as a scarce resource, prompting efforts to protect starry skies through initiatives like dark-sky reserves and starlight parks (Iwaniszewski, 2015; Cooper et al., 2018).

The burgeoning interest in Astro-tourism is underscored by its potential to revitalize rural communities and promote environmental conservation, aligning with contemporary trends in provincial tourism (Hobkirk, 2020). By popularizing science among travelers and highlighting environmental preservation, Astro-tourism fosters a unique connection with nature and space (Fayos-Solá et al., 2014). It encompasses various activities, including astrophotography, comet observations, and visits to astronomical observatories, catering to enthusiasts seeking immersive and meaningful experiences (Iwaniszewski, 2015).

Understanding the motivations and preferences of Astro-tourists is essential for destinations seeking to capitalize on this niche market. Studies have highlighted the emotional aspects of Astro-tourism, emphasizing the role of novelty and meaningfulness in shaping visitor experiences (Hobkirk, 2020). Furthermore, the assessment of regions for Astro-tourism development underscores the importance of preserving dark skies and natural conditions to attract tourists (Iwaniszewski, 2015).

In conclusion, the awareness of foreign tourists regarding the potential of Sri Lanka's Astro tourism industry is crucial for its development. By leveraging its natural assets and promoting sustainable practices, Sri Lanka can position itself as a premier destination for Astro-tourism, offering unique experiences that blend science, nature, and cultural heritage.

OBJECTIVES

Main Objective

Study on International Tourists' Awareness of Sri Lanka's Astro-tourism Potential

Sub Objectives

1. Assessing Awareness and Perception of Astro-tourism Industry Among International Tourists
2. Identifying Opportunities and Strategies for The Development of the Astro-tourism Industry in Sri Lanka

METHODOLOGY

To study the awareness of foreign tourists to the potential of Sri Lanka's Astro-tourism industry, 100 foreign tourists were taken as a sample, and data was collected through a questionnaire under purposive sampling. There were 3 parts to identify opportunities and strategies. The questionnaire was prepared in the form of Google Form and a mixed analysis method was used. The questionnaire was formulated according to the Likert scale and as open-ended questions. As secondary data sources, concurrent research and scholarly articles related to the study were used.

The data related to the research was analyzed under a mixed method where the qualitative data was analyzed under thematic analysis. The opinions of the research group were numbered from 1-5 and the relative importance index was calculated by weighting those values. Further, data analysis was done using Excel software and SPSS software. The data analyzed under mixed analysis methods and open-ended questions were verbally described and the data were analyzed using tables and graphs.

RESULTS AND DISCUSSION

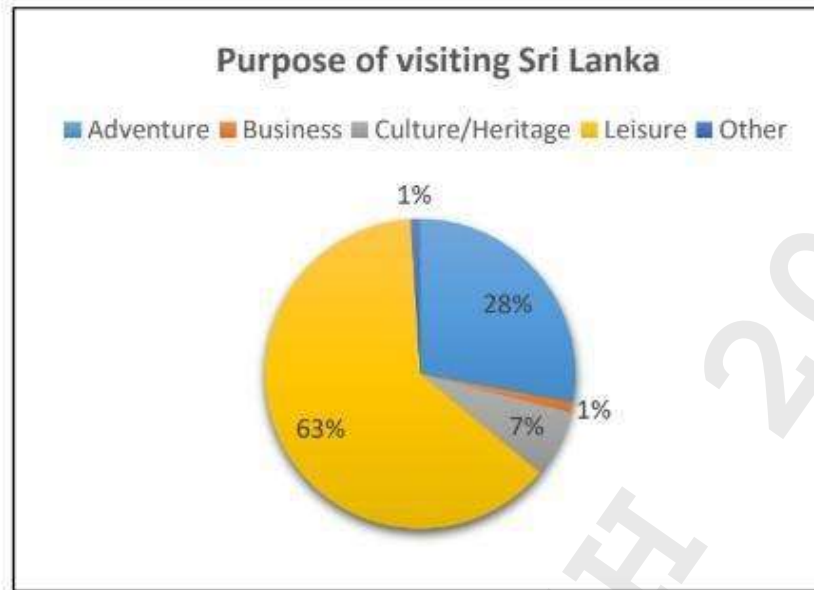


Chart 01: Purpose of visiting Sri Lanka

(Source – Compiled by Author, 2024)

Assessing Awareness and Perception of Astro-tourism Industry Among International Tourists

The first, the purpose of traveling to Sri Lanka varied among respondents, with a significant proportion citing leisure, adventure and cultural exploration as their primary intentions. As shown in **Chart 01**, it can be found that 63% of tourists travel to Sri Lanka to spend their leisure time. Secondly, 28% of tourists come for adventure experiences. 7% of tourists come for cultural exploration. Very few. A number of people come to Sri Lanka for business. This shows that there are different interests for travel among the tourists and presents an opportunity to introduce star-travel as a unique and rich experience during their visit to Sri Lanka.

Current Awareness of The Astro-tourism Industry

The analysis of responses from a questionnaire provided some valuable insights into how much international travelers know about Sri Lanka's Astro-tourism potential. The findings revealed that only 20% of these tourists were familiar with Astro-tourism, while the majority of them (80%) had no idea regarding the concept. These results also showed that different age groups had varying levels of familiarity with the concept of Astro-tourism.

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that only 20% of these tourists were familiar with Astro-tourism, while the majority of them (80%) had no idea what it was. These results also showed that different age groups had varying levels of familiarity with the concept of Astro-tourism. Young tourists showed a higher level of awareness compared to older age groups, indicating a generational gap in knowledge and exposure to Astro-tourism. In particular, it was found that most people have a high willingness to participate in Astro-tourism activities. People of all age groups have a high desire for it. It is further evident from Chart 02 below that younger demographics are more interested in this. This underlines the importance of targeted educational campaigns and promotional efforts to educate older demographics and improve the overall visibility of Sri Lanka's Astro-tourism opportunities.

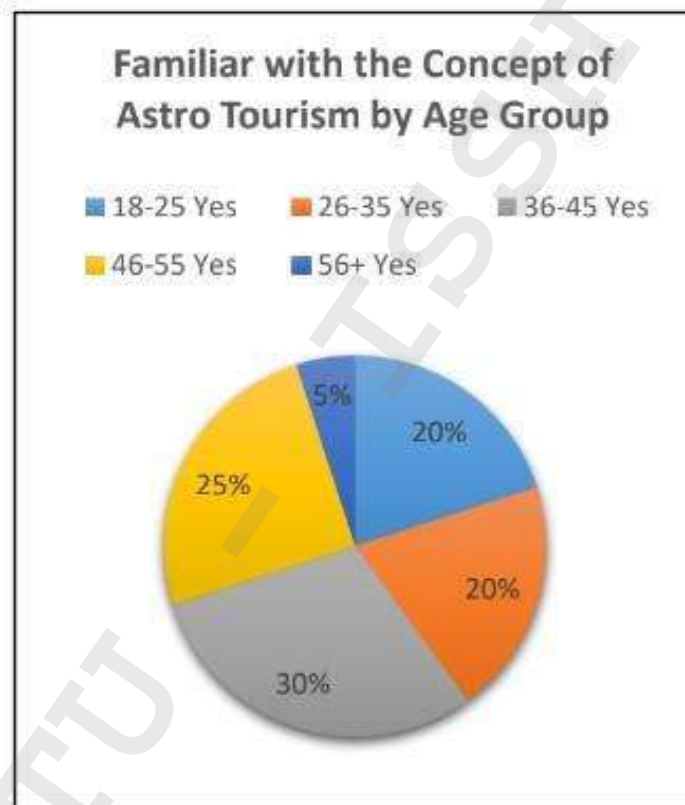
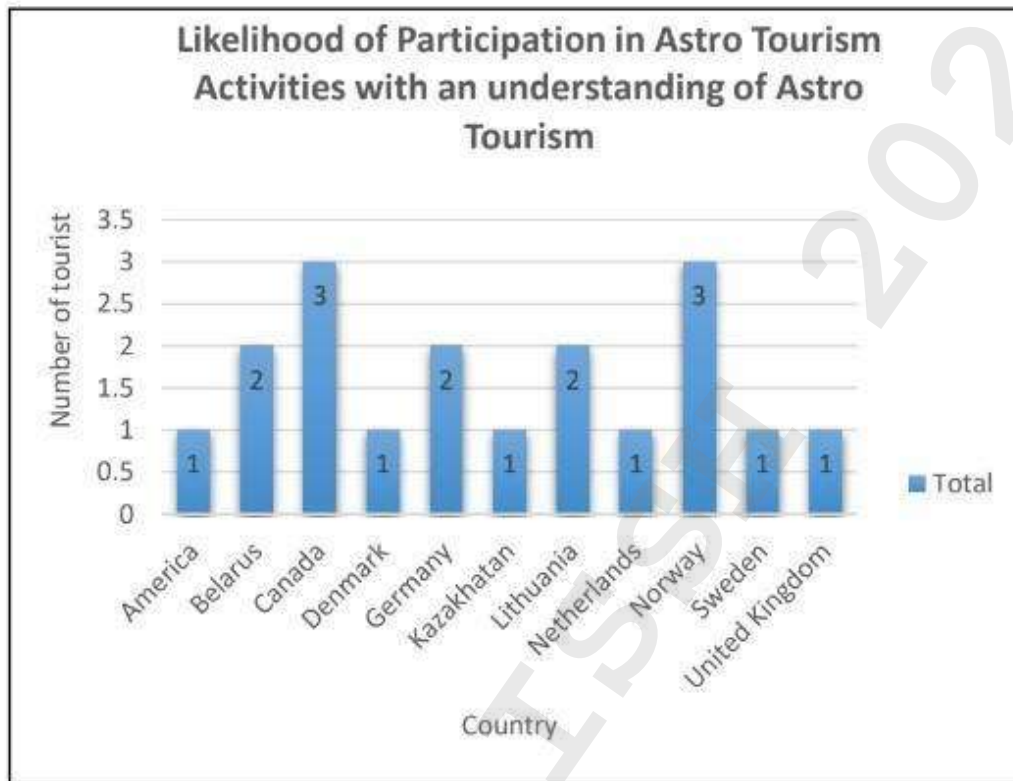


Chart 02: Familiar with the Concept of Astro-tourism by Age Group

(Source – Compiled by Author, 2024)

The analysis revealed that young tourists were more aware of Astro-tourism than older age groups, which suggests a generational gap in knowledge and exposure to this type of tourism. Interestingly, it was found that people of all age groups have a high willingness to participate in Astro-tourism activities. However, younger demographics showed a higher interest in it, as

shown in Chart 02. This highlights the need for targeted educational campaigns and promotional efforts to educate older demographics and increase awareness of Sri Lanka's Astro-tourism opportunities.



Graph 01: Likelihood of Participation in Astro-tourism Activities with an understanding of Astro-tourism

(Source – Compiled by Author, 2024)

The analysis also showed that tourists from Canada and Norway, who are aware of the Astro-tourism industry, demonstrated a high preference for participating in activities related to it. Graph 01 indicates that countries like Belarus, Germany, Lithuania, as well as people from America, Denmark, Netherlands, Sweden, UK etc. are interested in this tourism industry. Countries like Canada have a well-established Astro-tourism industry, offering beautiful aurora sightings, which is highly attractive to tourists. They also believe that Sri Lanka's introduction of the Astro-tourism industry to tourists seeking unique experiences will add a new dimension to Sri Lanka's already high tourist attraction.

Identifying Opportunities and Strategies for Developing the Astro-tourism Industry in Sri Lanka

The study identified the key factors that should be considered in the development of the Astro-tourism industry. These factors were identified through questionnaires taken from tourists.

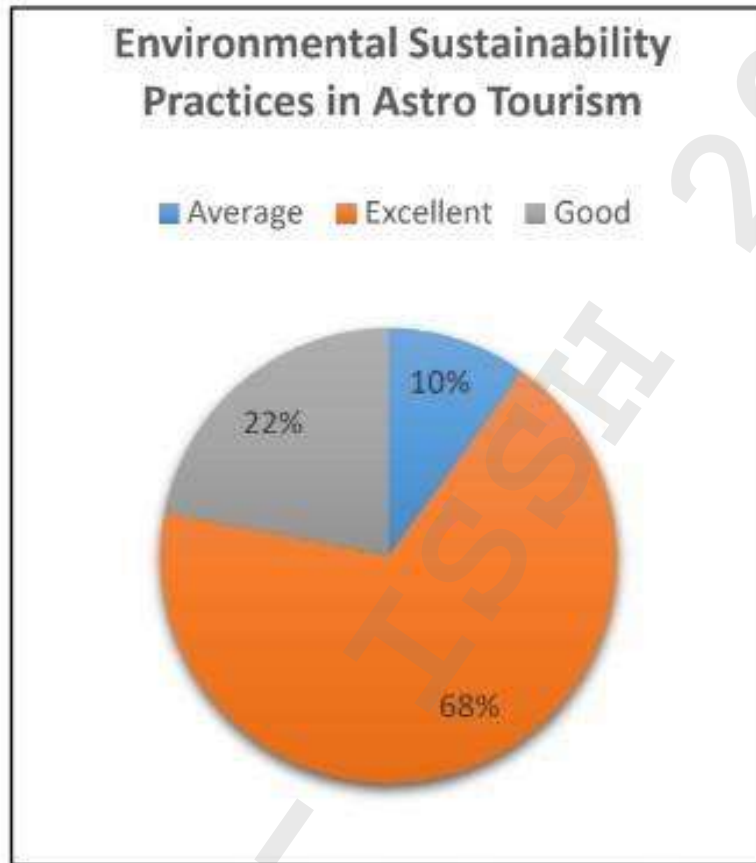
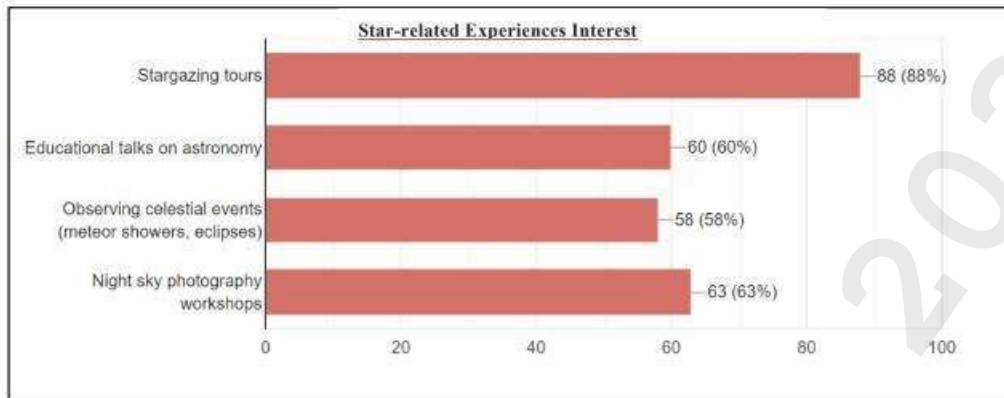


Chart 03: Environmental Sustainability Practices in Astro-Tourism

(Source – Compiled by Author, 2024)

The study found that the development of environmentally sustainable practices in the Astro-tourism industry (Chart 03), educational programs on astronomy, improving the quality of stargazing facilities and equipment, promoting and raising local awareness of the Astro-tourism industry, and increasing accessibility to stargazing sites are key factors to be considered in the development of Astro-tourism industry in Sri Lanka. Among these factors, the data obtained by the researcher suggested that improving the environmental sustainability practices of the Astro-tourism industry, enhancing the overall experience of the Astro-tourism industry, improving the quality of star viewing facilities and equipment, and organizing educational programs on

astronomy have a stronger impact on the development of the Astro-tourism industry. Further analysis revealed additional insights.



Graph 02: Star-related Experiences

(Source – Compiled by Author, 2024)

This study found Astro-tourism activities and tourist preferences. Stargazing excursions were strongly favored by 88% of international tourists. Night sky photography workshops were the second most preferred at 63%. Astronomical educational programs were the third most popular (Graph 02). According to the study, young people between the ages of 26-35 have a high interest in the Astro-tourism experience, which is a popular tourist attraction. Therefore, it is recommended to target tourists between the ages of 26-45 as they are more likely to be attracted to this type of tourism.

The responses from the open-ended questionnaire shed light on specific aspects of Astro-tourism that tourists would like to see emphasized or improved upon in Sri Lanka. The thematic analysis revealed five main themes, each representing different facets of Astro-tourism:

1. Dark Sky Preservation

Tourists expressed a strong interest in preserving dark skies to enhance their stargazing experiences. Emphasizing dark sky preservation initiatives, such as minimizing light pollution and establishing dark sky reserves, was highlighted as crucial for maintaining optimal conditions for observing celestial phenomena.

2. Educational Programs

Participants emphasized the importance of educational programs in Astro-tourism, including workshops, talks, and guided tours. They expressed a desire for opportunities to learn about

astronomy, astrophotography, and celestial events, indicating a keen interest in expanding their knowledge while engaging in Astro-tourism activities.

3. Quality Telescopes and Astrophotography Opportunities

Tourists highlighted the significance of quality telescopes and astrophotography opportunities for enriching their stargazing experiences. Access to state-of-the-art telescopes, along with guidance on astrophotography techniques, was identified as essential for capturing stunning celestial images and immersing oneself in the wonders of the night sky.

4. Observation Platforms and Interactive Exhibits

The availability of observation platforms and interactive exhibits are deemed important for enhancing tourists' engagement with Astro-tourism. Participants expressed a desire for elevated observation decks, interactive displays, and immersive experiences that facilitate deeper exploration and understanding of celestial phenomena.

5. Astronomy Events and Community Engagement

Tourists emphasized the value of astronomy events and community engagement initiatives in fostering a vibrant Astro-tourism ecosystem. They expressed interest in attending astronomy festivals, guided constellation tours, and star parties, as well as engaging with local communities and indigenous guides to learn about cultural astronomy and indigenous sky stories.

Overall, the responses underscore the multifaceted nature of Astro-tourism and the diverse range of experiences and opportunities it offers. By prioritizing dark sky preservation, educational programs, quality equipment, interactive exhibits, and community engagement, Sri Lanka can enhance its Astro-tourism offerings and attract a wider audience of stargazers and astronomy enthusiasts. These insights can inform the development of targeted initiatives and strategic investments to position Sri Lanka as a premier destination for Astro-tourism.

The thematic analysis of responses from the open-ended questionnaire revealed several ways in which the feel of Astro-tourism could positively impact Sri Lanka's overall tourism industry. These responses were categorized into five main themes:

1. Boosting Tourism Appeal and Economic Growth

Participants highlighted the potential of Astro-tourism to attract astronomy enthusiasts and high-spending tourists, thereby boosting Sri Lanka's international appeal and stimulating economic growth. By creating new market segments, expanding tourism infrastructure, and

increasing tourism revenue, Astro-tourism has the capacity to enhance destination competitiveness and strengthen Sri Lanka's overall tourism image.

2. Supporting Sustainable Development Goals

The respondents emphasized the alignment of Astro-tourism with sustainable tourism goals, including responsible travel practices, environmental stewardship, and the preservation of natural habitats. By utilizing natural resources responsibly, promoting eco-friendly accommodations, and encouraging sustainable transportation options, Astro-tourism contributes to Sri Lanka's efforts towards sustainability and conservation.

3. Fostering Cultural Exchange and Education

Astro-tourism provides opportunities for cultural preservation, cross-cultural learning, and immersion in indigenous knowledge and folklore. It promotes educational outreach programs, STEM education, and skill development while also encouraging the preservation of local identity and heritage. Additionally, Astro-tourism enhances social and cultural exchanges, fostering international partnerships and goodwill.

4. Enhancing Visitor Experiences and Engagement

Astro-tourism creates memorable experiences, fosters interest in science and astronomy, and cultivates a sense of wonder and awe among visitors. It offers nighttime activities like Astro-photography and nighttime adventure tours, promoting responsible waste management and enhancing visitor satisfaction and loyalty.

5. Driving Innovation and Collaboration

Astro-tourism fuels innovation in destination marketing strategies, digital technologies, and sustainable architecture. It stimulates investment in stargazing facilities and equipment, supports scientific research opportunities, and attracts corporate sponsorships for conservation initiatives. Additionally, it strengthens government-private sector collaboration and increases international media exposure, highlighting Sri Lanka's commitment to innovation and sustainability.

CONCLUSION

In conclusion, this research provides valuable insights into the awareness, perception, and potential opportunities of Astro-tourism among international tourists in Sri Lanka. Despite varying levels of awareness, there is a clear interest among tourists in experiencing Astro-

tourism activities, indicating a promising opportunity for the development of this niche tourism sector in the country. The study highlights the importance of targeted educational campaigns and promotional efforts to raise awareness and improve visibility of Sri Lanka's Astro-tourism offerings, particularly among older demographics. Additionally, the identification of key factors influencing the development of the Astro-tourism industry, such as environmental sustainability practices, educational programs, and quality facilities, provides valuable insights for policymakers and stakeholders to strategize and prioritize initiatives accordingly. Moreover, the thematic analysis of responses underscores the multifaceted nature of Astro-tourism and its potential to positively impact Sri Lanka's overall tourism industry. By leveraging its natural assets, promoting sustainable practices, fostering cultural exchange, and driving innovation, Sri Lanka can position itself as a premier Astro-tourism destination on the global stage, attracting a diverse range of tourists and contributing to economic growth, environmental conservation, and cultural preservation. Overall, the findings emphasize the need for concerted efforts and collaborative partnerships to capitalize on the opportunities presented by Astro-tourism and propel Sri Lanka towards a sustainable and thriving tourism future.

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