

CARRYING CAPACITY ANALYSIS OF TJONG A FIE MANSION MANAGEMENT AS A HERITAGE TOURISM DESTINATION IN MEDAN

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Abstract

Significant management issues have been brought about by the growing number of tourists visiting Medan's Tjong A Fie Mansion. These challenges include the need for more intense maintenance, structural strains on the structure, and a degradation in the quality of the facilities. The management of this cultural heritage location has to change as a result of the rising expectations of tourists for a first-rate travel experience. Finding a balance between maintaining the mansion's historical and cultural authenticity and guaranteeing its long-term viability as a tourist attraction is one of the main obstacles. The purpose of this study is to determine the elements affecting the mansion's carrying capacity and assess the management support system's current state. The study used a mixed-methods approach, integrating quantitative assessment of visitor capacity with qualitative thematic analysis. The physical state of the building, historical and cultural significance, management effectiveness, economic considerations, community involvement, visitor experience, and regulatory compliance are some of the major influencing factors that limit the mansion's carrying capacity to 79–80 visitors per day. Regular facility maintenance, better visitor flow management, increased stakeholder collaboration, cultural education initiatives, and more stringent policy implementation are some suggestions to address these issues and guarantee the long-term viability of Tjong A Fie Mansion as a heritage tourism destination.

Keywords: Carrying Capacity; Management; Tjong A Fie Mansion; Heritage Tourism Destination.

A. INTRODUCTION

One of Medan's most important cultural heritage monuments is the Tjong A Fie Mansion, which is situated in the center of the city. Tjong A. Fie, a well-known Chinese philanthropist and trader who had a significant impact on Medan's social and economic advancement, lived in the mansion, which was constructed in the early 20th century. The mansion was not just a place of residence but also a hub for political and social events. Its architectural design, which combines European, Malay, and Chinese elements harmoniously, captures the cultural richness of the time and never fails to enthrall tourists with its fine craftsmanship and minute details. The mansion, which is regarded as an important heritage monument, represents Medan's past and welcomes thousands of visitors each year.

However, a number of difficulties have emerged as a result of Tjong A Fie Mansion's increasing appeal as a tourist site. The physical state of the building has been strained by the rising number of visitors, resulting in structural stress, facility deterioration, and the requirement for significant repair. Additionally, creative management techniques are needed to meet the growing

demands of tourists for high-quality travel experiences. Finding a balance between the site's economic use and cultural heritage preservation is a major task.

Carrying capacity study is essential to resolving these problems and preserving Tjong A Fie Mansion's sustainability. This study assesses the site's administrative, social, economic, and physical capabilities to host tourists without sacrificing its integrity or the standard of the travel experience. Management can create practical plans to guarantee the mansion's sustainability by being aware of these constraints.

Analyzing Tjong A Fie Mansion's existing carrying capacity and determining the variables affecting its management as a heritage tourism destination are the goals of this study. In addition to external elements like technological improvements, socioeconomic dynamics, and legislative changes, internal factors like the building's condition, management capabilities, and infrastructure are also evaluated. The results show that the mansion can only accommodate 79–80 guests each day. The building's physical condition, historical significance, management techniques, community involvement, and visitor expectations are important elements that affect this capacity.

A number of suggestions are made in order to maintain the home as a heritage tourism site. These include putting in place routine maintenance plans to maintain its structural soundness, controlling the number of visitors to avoid crowding, encouraging cooperation between interested parties, improving visitor cultural education initiatives, and enforcing laws that strike a balance between protecting cultural heritage and promoting sustainable tourism. Tjong A Fie Mansion can maintain its status as a sustainable and appealing heritage property and ensure its legacy for future generations by strategically tackling these issues.

B. RESEARCH METHOD

In order to fully comprehend the carrying capacity and management of Tjong A Fie Mansion as a heritage tourism site, the methodology of this study uses a mixed-methods approach, combining qualitative and quantitative research. By dividing the total area available for guests by the average space needed per visitor, the Physical Carrying Capacity (PCC) is first determined. The PCC is then modified in accordance with variables influencing visitor comfort and safety to arrive at the Realistic Carrying Capacity (RCC). Lastly, the capacity of the environment to sustain visitors without deteriorating is evaluated in order to determine the Ecological Carrying Capacity (ECC). Key topics pertaining to carrying capacity and management will be identified by qualitative thematic analysis of the data, and these will be combined with quantitative data from PCC, RCC, and ECC calculations. The goal of this synthesis is to present a thorough understanding of the potential and difficulties involved in running Tjong A Fie Mansion. In the end, the study aims to provide pertinent suggestions for sustainable management, guaranteeing the conservation of cultural property for upcoming generations while satisfying the demands of present tourists.

C. FINDINGS AND DISCUSSION

Carrying Capacity Analysis

The analysis at this stage is carried out by classifying visitor activities while visiting the Tjong A Fie Mansion cultural tourism area through observation. Analysis Power support can be seen as follows:

1. Analysis Support Physical / *Physical Carrying Capacity* (PCC)

Area used is existing area The Tjong A Fie Mansion cultural tourism area is 6000 m².

Based on category from Cifuentes (1992) the need for tourist areas culture is of 25 m².

Rotation factor as mark from the average visit traveler in One day with opening hours Power pull tour culture that is:

$$Rf = \frac{\text{Jam buka daya tarik wisata}}{\text{Rata-rata durasi kunjungan}}$$

$$Rf = \frac{8 \text{ jam/hari}}{40 \text{ menit/hari}}$$

$$Rf = \frac{8 \text{ jam/hari}}{0,6 \text{ jam/hari}}$$

$$Rf = 13.3$$

Based on formula analysis Physical capacity of tourist area Tjong A Fie Mansion culture can counted as following:

$$PCC = A \times \frac{1}{B} \times Rf$$

$$PCC = 6000 \times \frac{1}{25} \times 13,3$$

$$PCC = 79,800$$

$$PCC = 80 \text{ Visitors / day}$$

Based on the PCC formula, we get that 80 visitors every day with still get satisfaction on visits made.

A thorough grasp of physical carrying capacity is also essential for preserving the caliber of visitor experiences at cultural heritage sites (Cifuentes, 1992).

Analysis Support Real / *Real Carrying Capacity* (RCC)

When doing calculate previous RCC done calculation from factor manager from tour Tjong A Fie Mansion culture as following.

$$Cf = \frac{\text{Luas area khusus pengelola}}{\text{Luas area pemanfaatan}} \times 100\%$$

$$Cf = \frac{6000}{4000} \times 100\%$$

$$Cf = 1.5$$

The formula used For calculate RCC namely as following:

$$RCC = PCC \times \frac{100 - Cf}{100}$$

$$RCC = 80 \times \frac{100 - 1,5}{100}$$

$$RCC = 80 \times \frac{98,5}{100}$$

$$RCC = \frac{7880}{100}$$

$$RCC = 78.8$$

$$RCC = 79 \text{ Visitors / day}$$

From the results RCC calculation is obtained mark as many as 79 visitors every day. This value to signify that capacity tourist capacity with consideration factor physique as well as factor correct manager who can visit destination tour Tjong A Fie Mansion culture. Effective management techniques can raise a tourist destination's actual carrying capacity (Nguyen, T. H. H., & Tran, 2023).

Effective Carrying Capacity (ECC) Analysis

Interview results with manager destination tour Tjong A Fie Mansion culture is fully managed by a family of 4 people. Correction factor For calculate MC in Destination Area tour The culture of Tjong A Fie Mansion is:

$$MC = \frac{\text{Jumlah pengelola yang ada}}{\text{Jumlah pengelola yang di butuhkan}} \times 100\%$$

$$MC = \frac{4}{4} \times 100\%$$

$$MC = 1$$

Furthermore If already got MC value then furthermore will be searched ECC value as following:

$$ECC = RCC \times MC$$

$$ECC = 79 \times 1$$

$$ECC = 79 \text{ Tourists / day}$$

Based on results ECC calculation of the value obtained namely 79 tourists every the day. Effective management engagement in tourism destination operations has a considerable impact on visitor experiences and operational sustainability (Rahman, K. A. M. A., & Rahman, 2022).

The physical state of the structure, historical and cultural factors, management and economic factors, and other factors all have an impact on Tjong A Fie Mansion's carrying capacity. According to earlier research, improving visitor experiences requires proper building and supporting facility upkeep (Zhang, Y., & Chen, 2021). The site's appeal is also enhanced by the preservation of historical and cultural components, such as vintage furnishings and records (de Lima, C. M. B., & de Oliveira, 2020). The management of Tjong A Fie Mansion as a cultural tourism site can be carried out successfully by taking into account all of these criteria, guaranteeing sustainability and visitor happiness.

Factors Affecting the Carrying Capacity of the Tjong A Fie Museum

Tjong A Fie in Medan is one example of a cultural heritage tourism site where tourism management encompasses a number of factors that might affect the destination's carrying capacity and tourism success.

First, one of the primary elements influencing the carrying capacity of the building's management, including management, architectural preservation, and structural repair, is the physical state of the structure that needs to be maintained and repaired. The state of auxiliary amenities including parking lots, restrooms, and access points also affects the experience of visitors.

Second, historical and cultural factors. Through exhibitions, tours, and instructional materials, the gallery's significant historical importance draws visitors from Tjong A Fie's historic core. To give guests a genuine and instructive experience, it is crucial to maintain cultural components associated with Tjong A Fie Mansion, such as antique furniture, artwork, and historical records.

Third, management and administration. Good staff training, productive functional administration, and essential preparedness are all components of effective administration. The general visitor experience and Tjong A Fie Mansion's standing in the tourism business may be impacted by the executives' personalities. Effective marketing and focused advertising techniques can raise the Tjong A Fie Mansion museum's profile as a tourist destination. For example, developing time-limited content, collaborating with tour operators, and showcasing Tjong A Fie Mansion through virtual entertainment.

Economic factors come in fourth. Tjong A Fie Mansion's administration, operating, and maintenance expenses need to be well controlled in order to maintain its financial sustainability. Labor costs, maintenance costs, and other functional costs are a few examples. Diversifying revenue streams like ticket and souvenir sales as well as other services like guided tours and special events can assist maintain financial stability.

Fifth, the contribution of community groups. The advancement of the tourist destination can be bolstered by the surrounding network's involvement in the administration and growth of Tjong A Fie Mansion. Labor, promotion, or even the supply of locally produced goods that may draw tourists can all be considered forms of support. Support from the public or local government may take the shape of financial aid, safety measures, or the development of the travel and tourism sector. For heritage artifacts to be managed successfully, arrangements that support their advancement are crucial.

The sixth is the experience of the visitor. Visitors can be more satisfied and inclined to return if they have a positive and instructive experience. For instance, an insightful tour, conversation with an informed guide, and a highly integrated meeting. The Tjong A Fie Mansion heritage tourism destination's popularity and success are also impacted by elements including accessibility, visitor comfort, and ticket costs.

Administrative and strategic factors come up at number seven. To prevent real issues and guarantee efficient operations, local rules and guidelines pertaining to the preservation of historic structures, visitor welfare, and commercial operations must be agreed upon. Building safety, avoidable damage, and adherence to conservation principles are all guaranteed by a strong conservation policy.

All things considered, a comprehensive strategy for running Tjong A Fie Mansion as a heritage tourism attraction calls for effective administration, community engagement, first-rate visitor experiences, and upkeep. By taking everything into account, Tjong A Fie Chateau's social tourism business goal can be developed into a successful and long-lasting historical tourism destination.

D. CONCLUSION

According to the research, the carrying capacity at the cultural tourism destination Tjong A Fie Mansion is 80 visitors per day for the Physical Carrying Capacity (PCC), 79 visitors for the Real Carrying Capacity (RCC), and 79 visitors for the Effective Carrying Capacity (ECC). These results emphasize how crucial it is to comprehend visitor capacity constraints in order to guarantee a sustainable and pleasurable experience for everybody. The Tjong A Fie Mansion's carrying capacity is influenced by a number of factors, including as the building's physical state, historical and cultural elements, management and administration, economic concerns, community involvement, visitor experience, and current laws and policies. The degree to which the location can host tourists while maintaining its cultural integrity depends on each of these elements.

Nonetheless, this study admits its limits because it is a preliminary investigation that offers a fundamental summary of the carrying capacity without exploring more intricate models or different strategies. It is advised that future study use a more thorough methodology that include stakeholder interviews, qualitative evaluations, and comparison analyses with other cultural tourist destinations in order to deepen the investigation. In order to uncover best practices and creative management techniques that may be implemented to the Tjong A Fie Mansion, future academics might think about undertaking in-depth case studies to investigate other cultural tourist locations. Discussions concerning carrying capacity and visitor experience including local people, management, and tourists will yield a variety of viewpoints and ideas.

Furthermore, a more comprehensive knowledge will be possible through the use of sophisticated analytical models of carrying capacity that take into consideration seasonal fluctuations, dynamic visitor behavior, and environmental implications. In order to manage visitor numbers efficiently and guarantee both visitor happiness and cultural heritage preservation, it can be helpful to develop realistic management recommendations based on research findings. Last but not least, setting up a system for continuous observation of visitor numbers and experiences will enable adaptive management techniques that react to feedback and shifting situations. Future studies can help improve management procedures and visitor experiences at the Tjong A Fie Mansion and other comparable heritage sites by concentrating on these suggestions.

REFERENCES

- Cifuentes, L. (1992). Visitor Capacity in Cultural Heritage Sites. *Journal of Cultural Heritage Management and Sustainable Development*.
- de Lima, C. M. B., & de Oliveira, R. A. (2020). Assessing the Carrying Capacity of Ecotourism in Protected Areas. *Journal of Environmental Management*.
- Nguyen, T. H. H., & Tran, P. T. T. (2023). Visitor Behavior and Its Impact on Carrying Capacity in National Parks. *Journal of Outdoor Recreation and Tourism*.
- Rahman, K. A. M. A., & Rahman, M. A. A. (2022). Estimation of Ecotourism Carrying Capacity for Sustainable Tourism. *Journal of Sustainable Tourism*.
- Zhang, Y., & Chen, J. (2021). Visitor Management in Cultural Heritage Sites: A Case Study of the Great Wall of China. *Tourism Management*.