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FROM VISITOR REVIEWS TO DIGITAL SOLUTIONS: ENHANCING ENGAGEMENT AT JUGRA HERITAGE SITES

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Abstract:

Utilizing Extended Reality (XR) technologies to enhance visitor engagement at Jugra Heritage Sites enriches experiences, strengthens connections with Malaysia's heritage, and aligns with modern tourism trends, thereby increasing satisfaction and encouraging repeat visits. This study investigates how digital innovations can enhance visitor engagement at Jugra heritage sites based on visitor feedback. The research focuses on three main issues: insufficient exhibit information, lack of interactive and engaging content, and the negative impact on visitors' sense of place. To analyze visitor feedback and identify themes and patterns of engagement and information accessibility, the study used Google Reviews for Bandar Palace in Jugra, Selangor, Malaysia, collected through web scraping tools from 2019 to 2024. Researchers selected these reviews using relevant keywords such as review text, posting year, and star rating. Atlas.ti software was used to analyze the data and identify the main themes related to the sense of place at Bandar Palace. Five major themes were identified: historical significance, architectural aesthetics, visitor experience, maintenance and preservation practices, and cultural and educational value. Consequently, digital innovations can be implemented in Istana Bandar exhibitions to transform it into a cultural and educational heritage site. These innovations include introducing interactive digital guides, virtual tours with enriched educational content, enhanced feedback systems, and improved facilities management monitoring systems. These solutions aim to address visitors' concerns, enhance their engagement and satisfaction, and attract more visitors to the site. By preserving its historical and cultural values, these solutions will offer a better participatory experience without compromising its architectural uniqueness.

Keywords:

Digital; Engagement; Extended Reality; Heritage; Visitor Reviews

Introduction

Jugra Heritage Sites are significant historical and cultural sites in Selangor, Malaysia. The most prominent heritage element is Bandar Palace, which perfectly portrays the rich architectural and cultural heritage of the town (Aidatul Fadzlin Bakri et al., 2012; Mumad Chelaeh et al., 2017; Zainab Roslan et al., 2017). Bandar Palace, built in the early 1900s, served as the Sultan of Selangor's royal dwelling (Aidatul Fadzlin Bakri et al., 2012). This historical landmark captures the cultural and historical tales of the Selangor Sultanate and showcases its era's magnificent architecture (Puteri Shireen Jahn Kassim et al., 2020). As a prominent destination for both domestic and foreign tourists, Bandar Palace provides insights into Malaysia's royal and cultural heritage.

Despite its historical significance, Bandar Palace and other Jugra Heritage Sites face challenges in maintaining tourist engagement. A major issue is the lack of comprehensive and readily available information about the exhibitions and the venue itself. Many visitors find it difficult to access detailed and engaging content that enhances their understanding and enjoyment of the heritage on display. Limited visitor interaction can lead to decreased engagement and satisfaction due to the absence of captivating and valuable information. This study aims to address these challenges by analyzing visitor reviews of Jugra Heritage Sites to identify common issues related to tourist engagement and propose digital solutions based on visitor feedback. The research focuses on pinpointing specific areas where informational material is insufficient or lacking through a thorough examination of visitor feedback. Based on these findings, the study will suggest digital solutions to enhance overall visitor engagement and information accessibility.

Enhancing visitor engagement at Jugra Heritage Sites is crucial for several reasons. Firstly, it ensures that visitors have a meaningful and enjoyable experience, fostering a deeper connection with Malaysia's historical and cultural heritage. Increased engagement can lead to satisfied visitors, encouraging repeat visits and positive word-of-mouth recommendations, which support the site's sustainability and profitability. Additionally, by utilizing digital technology to improve informational content, Jugra Heritage Sites can meet the expectations of a digitally savvy audience and stay aligned with modern heritage tourism trends. The primary objective of this research is to examine visitor reviews to assess the challenges related to information accessibility and tourist engagement at Jugra Heritage Sites. The study will propose digital solutions, such as augmented reality (AR), virtual reality (VR), and mixed reality (MR), to address these issues. These digital interventions aim to enhance the tourist experience by providing more interactive, informative, and engaging content. They also seek to strengthen visitors' sense of identity, place, and connection to the heritage site. In conclusion, this study aims to bridge the gap between visitor expectations and the current offerings at Jugra Heritage Sites by leveraging digital technologies to improve informational content and interaction.

Literature Review

This section discusses four topics related to the research title: Reviving the Historical Legacy of Jugra, Visitor Engagement in Heritage Tourism, Information Accessibility in Museums and Heritage Sites, and the Impact of Digital Technologies on Visitor Experience.

Reviving the Historical Legacy of Jugra

Due to its naturally high terrain in the Bukit Jugra region, Jugra was recognised historically for its strategic importance as a transit city (Mazarina, Nurhaya, Mansor, et al., 2021). According

to Zainab Roslan et al. (2017) and A.Samad (2018), As stated in the Malay historical literature "Sulalatus Salatin" by Tun Sri Lanang, Jugra was a significant transit city under Sultan Mansur Shah, the sixth Sultan of Malacca (1456–1477). Jugra is located in the Kuala Langat district of Selangor State, Malaysia. It is often called the Royal City of Selangor or Bandar Temasya. (Aidatul Fadzlin Bakri et al., 2012; Mumad Chelaeh et al., 2017; Zainab Roslan et al., 2017). Evidence discovered in 1964 during the excavations in Kampung Sungai Lang Tengah suggests that Kuala Langat existed between 2000 and 2500 years (Aidatul Fadzlin Bakri et al., 2012; Mumad Chelaeh et al., 2017; Zainab Roslan et al., 2017).

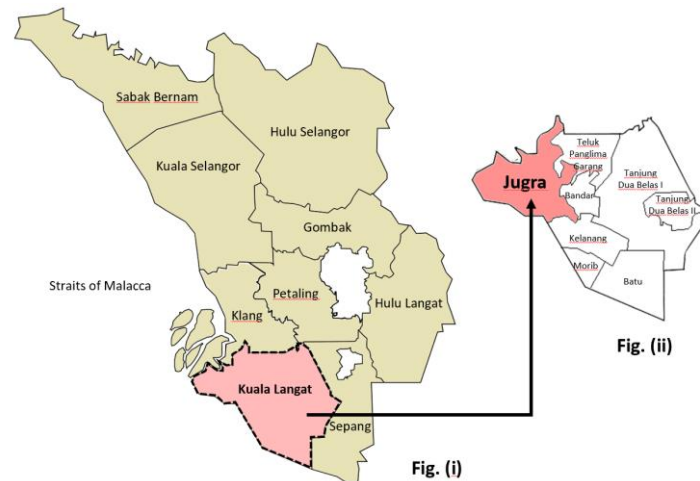


Figure 1: Location of (i) Kuala Langat District and (iii) Mukim of Jugra

Source: (Mazarina, Nurhaya, Mansor, et al., 2021)

Jugra, a historic royal town, is famous for its significance during the fourth Sultan of Selangor's reign, Sultan Abdul Samad ibni Almarhum Raja Abdullah. As Figure 2 illustrates, Jugra was given the title Royal Town after the royal seat was transferred there from Bukit Melawati in Kuala Selangor during the 18th century. Between 1857 and 1903, Jugra functioned as the central hub for Selangor's politics, society, and development, with Istana Bandar representing its royal status both physically and symbolically (Aidatul Fadzlin Bakri et al., 2012; Mumad Chelaeh et al., 2017; Noorjannah Adam & Adnan Jusoh, 2018; Zainab Roslan et al., 2017). Istana Bandar, situated on a 12-acre land in Kampung Bandar, gained prominence during the British colonial period in Jugra, particularly under Sir Frank Swettenham, the British resident chief. J.G. Davidson, the first British resident in Selangor, was based in Klang. The strategic location of Istana Bandar in Royal Town, close to the Sungai Langat waterway and connected by road to Jugra and Klang, made it an ideal administrative hub.

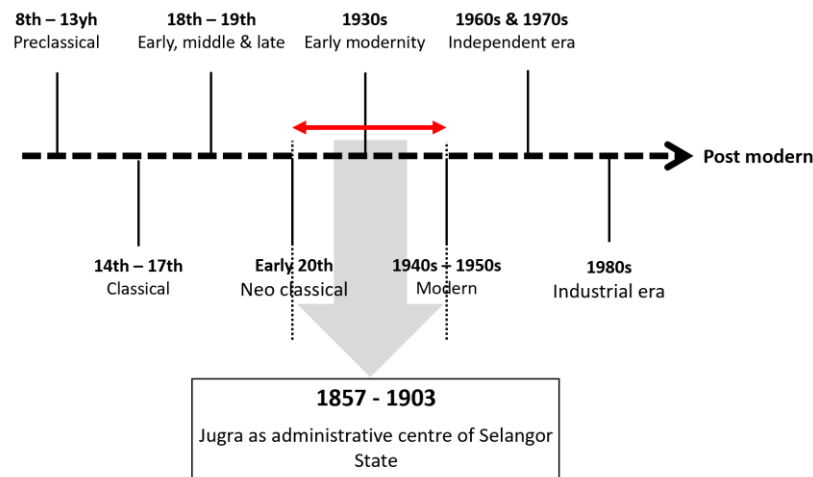


Figure 2: Historical Timeline of Jugra: Mapping Regional Era Evolution

Sources: (Puteri Shireen, 2021; Tengku Anis Qariah, 2021)

Jugra, renowned for its distinctive urban layout and historical significance, was neglected after the state government relocated its administrative centre to Klang and Kuala Lumpur. Although it ceased to be a significant political or administrative hub, Jugra still draws historical tourism interest due to its rich cultural and natural heritage. The historic Royal Town of Jugra boasts 11 potential heritage elements that could be developed into a historic tourism trail (Aidatul Fadzlin Bakri et al., 2012), as shown in Figure 3. To ensure that Jugra's valuable cultural assets are preserved for future generations, it is essential to safeguard this notable historical urban landscape. In this ancient metropolitan region, tangible and intangible cultural assets' sustainability, protection, and preservation are crucial (UNESCO, 2011b). According to Bak et al. (2019), cultural and natural assets are examples of tangible cultural heritage. These treasures must be protected to preserve Jugra's rich historical legacy and guarantee that future generations will continue to recognise and value it.

Digital technology may significantly contribute to preserving and exhibiting Jugra's rich multicultural legacy by creating a storyboard and historical timeline. Digitising historical components in heritage tourism sites can substantially improve tourist engagement by offering a more immersive and interactive experience (Fusté-Forné, 2020). With this strategy, more people may come and meaningfully explore and engage with Jugra's heritage. By integrating edutainment into the digital experience, users can experience both elements of learning and entertainment while exploring the site. The digital narration of Jugra's historical tale contributes to preserving and sustaining these valuable cultural treasures, allowing future generations to enjoy and take advantage of them as well (de Freitas et al., 2021; Mazarina, Nurhaya, & Puteri Shireen, 2021; UNESCO, 2011a)



Figure 3: Tangible Heritage Elements In Jugra

Sources: (Mazarina, Nurhaya, & Puteri Shireen, 2021)

Visitor Engagement in Heritage Tourism

Visitor involvement is crucial to heritage tourism since it substantially impacts tourist satisfaction, learning objectives, and the overall sustainability of cultural sites (Bozzelli et al., 2019). Interpretive techniques (Nurhaya, 2018), interactive technologies (Alatrash et al., 2021), educational initiatives (Remolar et al., 2021), and the physical and social surroundings (Dahan et al., 2022) are a few of the variables that affect visitor engagement at heritage sites. Interpretive techniques are essential to keeping people interested in cultural sites. Practical interpretation incorporates storytelling, guided tours, and interpretative panels that provide historical context and cultural insights. It also includes demonstrating a site's value engagingly and educationally. The use of interactive technology such as Virtual Reality (VR), Mixed Reality (MR), and Augmented Reality (AR) has revolutionised the method in which visitors interact with historical sites (Alabau-Montoya & Ruiz-Molina, 2020). Through immersive experiences offered by such technologies, visitors may creatively engage with the heritage environment. For example, augmented reality (AR) can link the present to the past by superimposing historical images onto current settings (Gu et al., 2022). Virtual reality (VR) can transport visitors to historically significant events or otherwise inaccessible parts of a place, improving their understanding and engagement (Nguyen et al., 2022). Combining AR and VR elements, mixed reality (MR) provides a smooth transition between the real and virtual worlds (Milgram & Kishino, 1994).

The influence of educational programs on visitors' participation at heritage sites is also significant (Lee, 2023; Zikas et al., 2016). These programs may include talks, seminars, in-person school visits, and practical exercises to accommodate different age groups and learning preferences. By increasing understanding, educational programs help visitors and the cultural site develop deeper connections. Interactive and participative learning environments encourage students to actively interact with the material (Huang et al., 2018; Nikolakopoulou et al., 2022; Zaia et al., 2022). To improve engagement at heritage sites, it is essential to understand the expectations and motivations of visitors (Bozzelli et al., 2019; Kong, 2021). Tourists come from various backgrounds and interests and may travel for pleasure, personal interests, or educational reasons. Historical sites that provide a variety of activities and educational materials to satisfy these diverse interests have a higher chance of engaging visitors. A deeper connection and increased pleasure with the site might result from satisfying or exceeding visitors' expectations (Dag, Çavusoglu, and Durmaz, 2023).

Visitor motivation and expectations, interpretative techniques, interactive technology, educational programs, and other complex elements all influence how visitors engage in heritage tourism. Heritage sites may improve tourist engagement by recognising and addressing these factors and deepening visitors' connection to cultural and historical heritage via meaningful and rewarding experiences.

Information Accessibility in Museums and Heritage Sites

Accessible information is crucial to improving visitors' experience of historical sites and museums. Providing clear and comprehensive information enhances the entire experience for visitors by helping them understand and appreciate the cultural and historical value of the exhibitions (Alzahrani, 2020; Paladini et al., 2019). Through this extensive information, visitors can connect more with objects and narratives, enhancing their engagement and educational impact (Selmanović et al., 2020). Accessible information, such as informative signage, guided tours, and interactive displays, helps museums and historical sites achieve their educational aims of educating visitors about history, culture, and sciences. Additionally, knowledgeable users are more likely to have an enjoyable experience, recommend others to the site, and revisit, enhancing the site's reputation (Hsu and Liang, 2022). Museums and historical sites may do their part to be more welcoming to all visitors by providing information in various languages, using simple language, and implementing accessible formats such as audio tours and interactive displays.

Museums and heritage sites frequently face challenges in providing visitors with access to information due to inadequate signs and labelling, a shortage of information, a lack of interaction, accessibility issues for those with disabilities, and factor quality of the data (Chong et al., 2021). Unfortunately, several websites have done an inadequate job of describing the exhibitions they provide, which leaves visitors confused and frustrated since they don't have sufficient context. On the other hand, some sites offer excessive information, making users feel confused and unable to assimilate the material appropriately. To ensure that cultural material is accessible to a broad audience, curators should organise content in a way that is simultaneously detailed and easy to understand (Kyriltsias et al., 2020). A younger audience who enjoys interactive digital interactions may find traditional static displays less attractive. Incorporating interactive technology such as touchscreens and augmented reality can offer more exciting methods to access information, improving engagement and retention (Geng et al., 2022). Museums and cultural sites must use inclusive design techniques to cater to all

visitors' requirements, particularly those with disabilities who often encounter different challenges in gaining information. An uneven visitor experience can arise when there is inconsistency in the level of the information supplied, with some exhibits offering detailed descriptions while others lack them. This lack of consistency can make certain site elements engaging and educational, while other aspects may be confusing or disconnected.

Impact of Digital Technologies on Visitor Experience

Through better information dissemination, digital technology has significantly improved the accessibility and navigation of heritage tourism (Alzahrani, 2020). AR, VR, and MR technology have entirely changed how information is delivered at heritage sites. AR apps, for instance, efficiently superimpose historical data and photos into the actual environment. The legacy experience has become more educational and immersive through digital technology, effectively connecting the past with the present (Ogle et al., 2020). Virtual Reality (VR) technology allows visitors to fully engage with locations, enabling them to personally experience historical events or explore places that might otherwise be inaccessible. With this technology, it is possible to authentically recreate historical settings and gain an extensive understanding of the artefacts on exhibition. Mixed reality (MR) is a hybrid technology that blends augmented reality (AR) and virtual reality (VR) features, providing features from both environments (Milgram & Kishino, 1994).

Digital technology in historical tourism may greatly influence visitors' emotions and mental well-being through interactive digital material (Persada, 2019). Visitor engagement is significantly increased by interactive and captivating digital material. Engaging digital elements, such as augmented reality overlays or virtual reality simulations, encourages visitors to engage emotionally and intellectually. Digital technology, in consequence, helps them form a stronger connection to the cultural site and its history, leading to a memorable and meaningful visit (Jung et al., 2020; Xu & Zhang, 2021). Digital technologies can stimulate powerful emotional reactions by creating captivating and immersive experiences. Virtual Reality (VR) can transport individuals to multiple periods and locations, directly allowing them to witness historical events. This immersive experience cultivates empathy and enhances appreciation of the historical context, ultimately developing an emotional attachment to the cultural site (Chunga et al., 2021; Wei et al., 2022). By integrating game mechanics into non-game settings, gamification can increase psychological involvement in historical tourism (Pasca et al., 2021; Škola et al., 2020). Heritage sites may enhance the tourist experience and promote learning and memory retention by integrating challenges, quests, and prizes. Digital tourism will encourage visitors to explore the site more extensively and connect deeply with the content. Through the use of digital technologies, visitors may have experiences that are uniquely suited to their preferences and interests. This adaptation makes the experience more relevant and engaging by increasing visitors' sense of belonging and engagement. Adapting to the visitors' preferences, learning style, and pace, personalised digital information enhances the experience.

Digital technologies such as augmented reality (AR), virtual reality (VR), and mixed reality (MR) are changing the way people engage with historical tourism. These technologies make information more accessible and easier to navigate, providing interactive, immersive experiences with a greater emotional and psychological impact on tourists.

Methodology

This study used web scraping methods to gather Google Review data for Bandar Palace in Jugra, Selangor, Malaysia, from 2019 until 2024. The primary focus was collecting reviews linked to Bandar Palace, including the supplementary text, posting year, and star ratings. The study aimed to provide an equitable perspective on visitors' experiences by evaluating favourable and unfavourable feedback. The researcher systematically examined the data with Atlas.ti software to identify themes and patterns related to the sense of place at Bandar Palace. Google Reviews offers real-time feedback and diverse perspectives from various reviewers, providing valuable insights into visitor experiences and perceptions. This accessibility fosters transparency and encourages improvements, while the qualitative data allows for exploring cultural sensitivities and differences in visitor perceptions.

Research Findings

Table 1: Total Number of Visitors Review In Google Review Web Based Of Bandar Palace, Jugra, Selangor From 2019 – 2024

Items	No of reviewer
Accepted	218
Rejected	225
Total	443

Source: Author

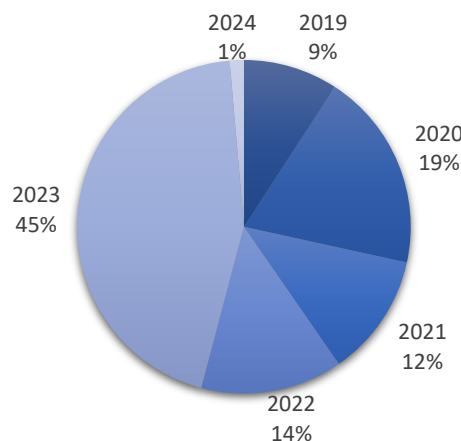


Figure 4: Numbers of Visitor Reviews From 2019 - 2024

Source: Author

Table 1 shows the total number of visitor reviews collected from Google Reviews, with 443 reviews gathered from 2019 to April 2024. After the screening, the researcher excluded 225 reviews because they were irrelevant to Bandar Palace or Jugra. As a result, the researcher accepted 218 reviews for this study. Figure 4's pie chart illustrates the distribution of reviews by year from 2019 to 2024.

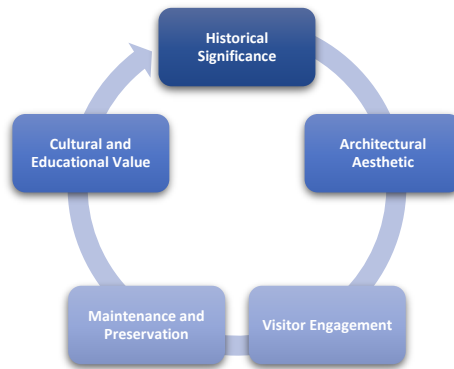


Figure 5: Recurring Themes and Patterns from Visitor Comment in Google Reviews Web Based

Source: Author

Using Atlas.ti software, the researcher analysed recurring themes and patterns from visitor comments on Google Reviews, as shown in Figure 5. The analysis revealed five key themes: Historical Significance, Bandar Palace, Visitor Engagement, Maintenance and Preservation, and Cultural and Educational Value. The researcher examined each theme in detail to uncover specific findings. Analysis of the Historical Significance Theme:

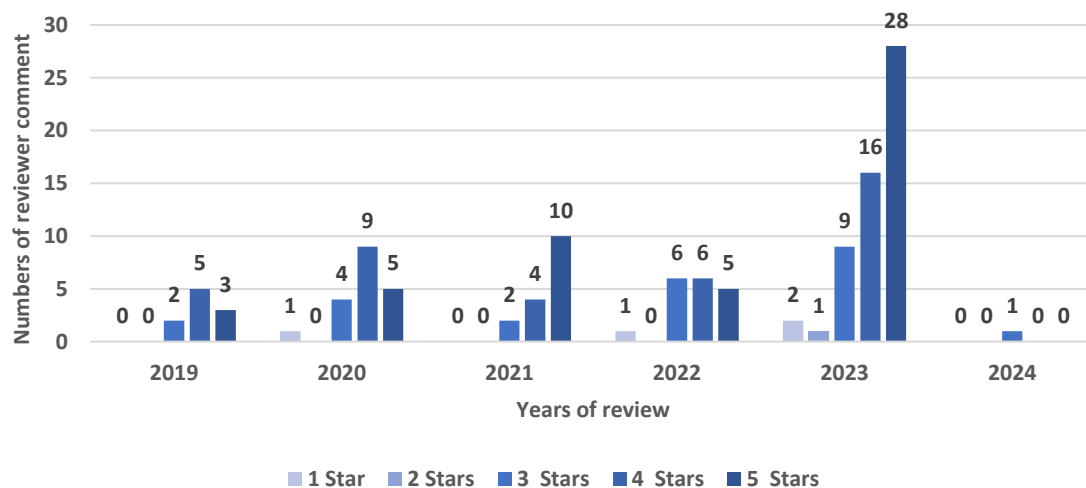


Figure 6: Star Ranking of The Historical Significance Theme Analysis

Source: Author

Throughout all the years, there has been a consistent appreciation for the historical significance of Bandar Palace. Figure 6 illustrates the reviews on historical relevance, indicating strong visitor appreciation for the historical importance and heritage of the palace with 51 reviews rating 5. Many of the reviews (91 out of 129) are rated 4 or 5, suggesting that visitors find the historical aspects highly engaging and valuable; therefore, the historical significance of Bandar Palace is a critical factor in visitor engagement and satisfaction. Reviews frequently mention terms like "historical," "history," "old," and "sultan," indicating that these aspects are crucial in shaping visitors' perceptions and experiences of Bandar Palace, as shown in Table 2.

Table 2: Sample of High-Ranking Visitors Review Towards Historical Significance of Bandar Palace, Jugra

ID	STAR RANKING	YEAR	REVIEW
ID-003	5	2023	Located in pleasant peaceful surroundings, this old historical castle was built in the same year as the Masjid Bandar by the fifth Sultan Selangor. Quite spacious compound, has multiple sections.
ID-032	5	2023	This is a very very good place to view! I love the old style design, aged stain, everything
ID-053	5	2023	It's a great historical place if you are into history and culture

Source: Author

However, Table 3 shows that a few lower-rated reviews (rankings 1 and 3) highlight potential areas where visitor expectations regarding historical significance may not have been fully met. These reviews could provide insights into specific aspects that might need attention or improvement, such as the need for better maintenance and preservation, as frequently mentioned in the comments.

Table 3: Sample of Lower-Rated Reviews Regarding Historical Significance of Bandar Palace, Jugra

ID	STAR RANKING	YEAR	REVIEW
ID-067	2	2023	Nice place but needs serious upkeep. It's literally falling apart, which is a shame for such a historic place.
ID-094	1	2023	No maintenance to the old palace. Is getting bad to worse?
ID-186	1	2023	I'm not going to repair the building... The historical value is only the old palace, but there is no contents of the building to look at and refer to... So please.....

Source: Author

Analysis of the Architectural Aesthetic Theme:

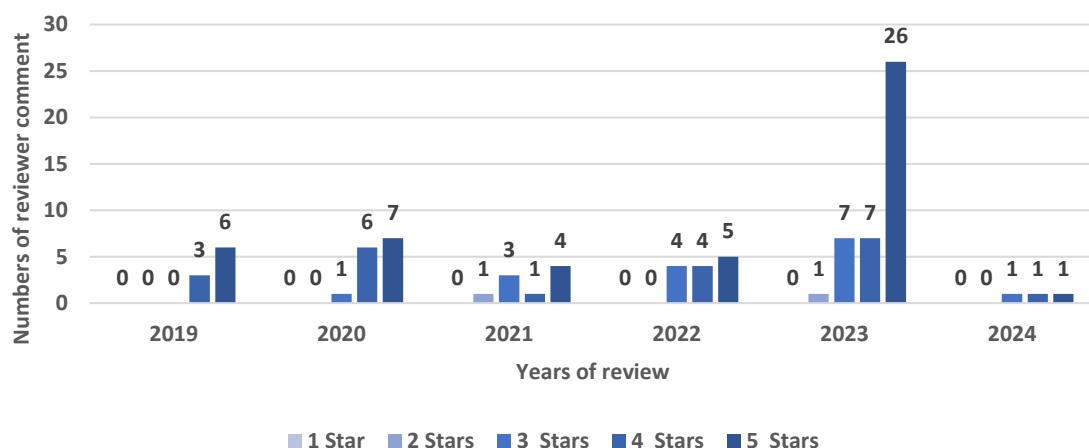


Figure 7: Star Ranking of The Architectural Aesthetic Theme Analysis

Source: Author

This analysis focuses on the 89 reviews mentioning terms related to architectural beauty, such as "beautiful," "architecture," "majestic," "building," and "structure," highlighting visitors' appreciation of Bandar Palace's architectural features with a substantial number of high ratings and consistent interest over the years as shown in Figure 7. Visitors appreciate the architectural features, significantly contributing to their positive experience at the palace. The highest number of reviews was in 2023, with 41 suggesting increased visitor engagement with the architectural theme during this period. However, as shown in Table 4, some reviews highlight the need for better maintenance and preservation, even among those who gave high ratings.

Table 4: Sample of Highlight Reviews for Building Maintenance and Preservation

ID	STAR RANKING	YEAR	REVIEW
ID-002	5	2023	A beautiful historical building with immense potential as a valuable tourist site/museum. Its beauty is marred by neglect, and now looks like a sad, abandoned haunted mansion. Free entry, no guided tour available but there are a few staff there for you to get some brochure or just some help with the photos lol. You can enter the building and access most of the areas. Despite the poor maintenance, it is still worth a visit, especially if you're an architecture enthusiast.
ID-096	5	2019	Beautiful palace, not your typical traditional Malay palace. But poorly maintain.
ID-195	5	2021	An interesting architecture of the palace... the empty rooms in the palace and each room must be tidied up with suitable accessories... the paint is also fading...

Source: Author

Analysis of the Maintenance and Preservation Theme:

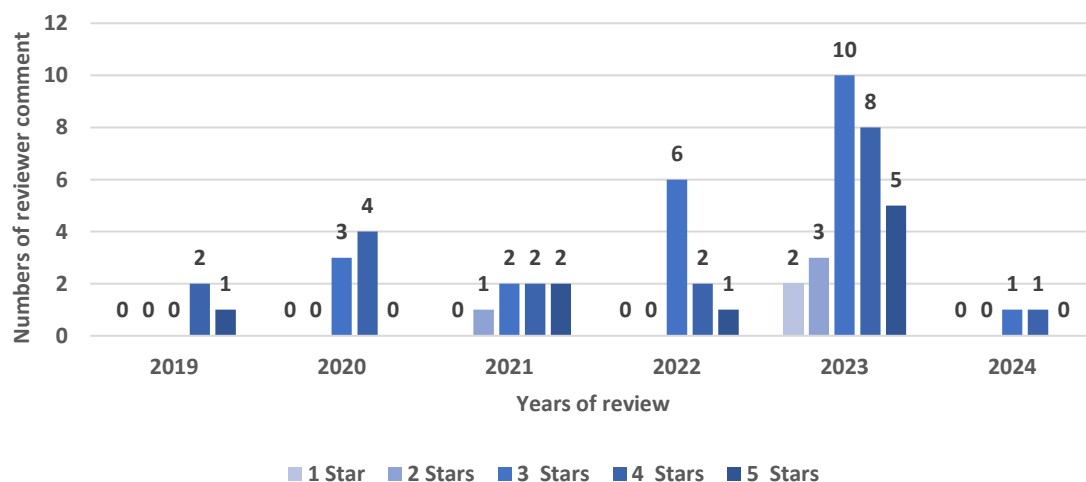


Figure 8: Star Ranking of The Maintenance and Preservation Theme Analysis

Source: Author

After screening, the researcher analyzed 56 visitor reviews related to the Maintenance and Preservation theme. Figure 8 shows the star ratings associated with this theme. The analysis focuses on reviews mentioning terms such as “maintenance,” “preserve,” “care,” “neglect,” “restore,” and “upkeep,” highlighting visitor concerns and observations regarding the condition and care of Bandar Palace. Reviews with lower ratings (1 and 2 stars) often cite poor maintenance and neglect as primary concerns, expressing disappointment in the lack of upkeep and indicating that neglect and insufficient preservation efforts negatively impact their experience. Interestingly, even among higher ratings (4 and 5 stars), there are mentions of the need for better maintenance. This analysis concludes that, although visitors appreciate the historical and architectural aspects of Bandar Palace, maintenance issues are a noticeable concern that could be improved to enhance the overall experience.

Table 5: Example Negative Reviews Regarding the Maintenance And Preservation Theme

Maintenance Issue	Lack of Furnishing and Displays	Safety Concerns
ID-094: No maintenance to the old palace. It is getting bad to worse.	ID-186: The historical value is only the old palace, but there is no contents of the building to look at and refer to... So please.....	ID-030: When visiting the 2nd floor, please be extra careful as there are unstable soft floors and holes.
ID-030: Nice 19th century british-malay architectural, but very run down... Hopefully a better restoration can be made by Jabatan Warisan Negara	ID-001: Not much history to learn other than the pamphlet given. You're really only able to look at the architecture, with zero furnishing....	ID-005:Today, it's looks like not well maintain already. Getting rotten here and there.
ID-041: such a lovely place however like abandoned.	ID-009: The building has nice architecture but it is empty. Will be better if have some furnishing and poster displays for visitors to know the history.	ID-007: The cleanliness of the palace area is well maintained, only the building needs extra care because it is old so some of the wood floor has broken.....

Source: Author

Table 5 highlights examples of negative reviews regarding the maintenance and preservation of Bandar Palace, divided into three sub-themes: maintenance issues, lack of furnishings and displays, and safety concerns during heritage exploration. Addressing these concerns will greatly enhance visitor satisfaction, potentially boost user experience ratings, and help preserve the site's historical and cultural significance. Future digital solutions, such as augmented reality (AR), virtual reality (VR), and mixed reality (MR), can provide virtual tours and interactive exhibits to improve the visitor experience.

Analysis of the Cultural and Educational Value Theme:

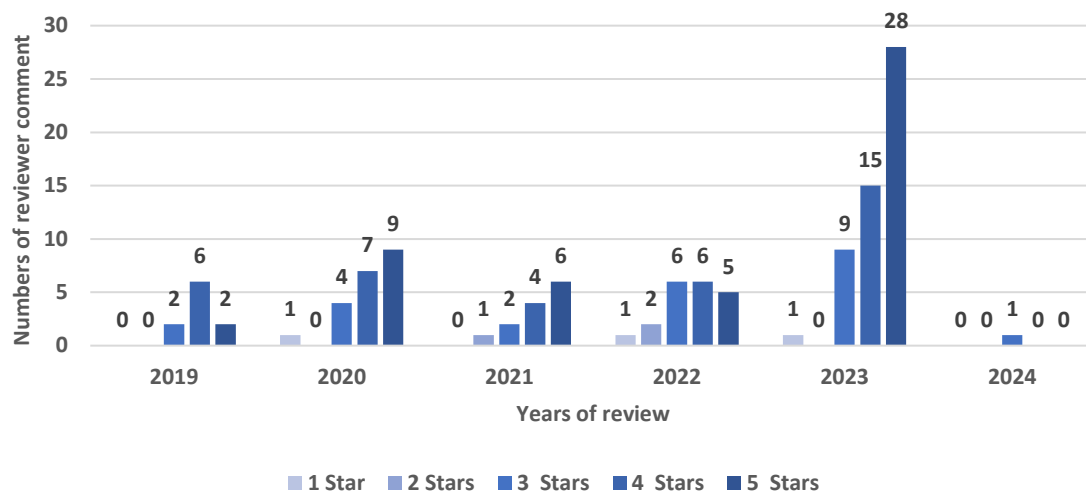


Figure 9: Star Ranking of The Cultural and Educational Value Theme Analysis

Source: Author

Keywords like “cultural,” “education,” “learn,” “heritage,” “tradition,” and “history” were used to filter visitor reviews that emphasize the cultural and educational significance of Bandar Palace. The researcher identified 118 reviews related to this theme, reflecting visitors’ views of the palace as a place of learning and cultural importance. Many visitors highly value Bandar Palace for its role in providing educational and cultural experiences, with numerous reviews expressing appreciation for the opportunity to learn about history and culture. The palace’s role as an educational and cultural site is crucial in shaping visitors’ perceptions and maintaining its importance as a heritage destination.

Figure 9 shows the analysis of reviews related to the Cultural and Educational Value theme, indicating that 88 high-rated reviews (4 and 5 stars) frequently highlight the educational and cultural value of the palace. Visitors appreciate the chance to learn about history and culture during their visits, suggesting that these aspects are highly valued. The analysis of reviews indicates a consistent appreciation for the cultural and educational experiences offered at Bandar Palace. However, lower-rated reviews (1 and 2 stars) point out issues such as insufficient informational materials, lack of guided tours, or limited educational content. Addressing these concerns could enhance the cultural and educational experiences for all visitors, potentially increasing overall satisfaction and ratings. The reviews underscore the educational and cultural value of the palace, making it a vital site for heritage and learning.

Discussion

Istana Bandar is a notable heritage site in Jugra, Selangor, showcasing the state’s rich cultural heritage during Sultan Abdul Samad’s reign. Jugra served as Selangor’s administrative center after Bukit Melawati in Kuala Selangor and before the administrative functions moved to Klang and later Kuala Lumpur. Istana Bandar symbolizes the evolution of Selangor’s administration and stands as a testament to the cultural and architectural grandeur of that period.

The research findings highlight several key themes from visitor reviews. Under the “Historical Significance” theme, visitors appreciate Istana Bandar’s rich past, emphasizing its cultural importance and the need for further preservation efforts. The palace’s architectural aesthetics are also a significant draw, with many reviewers admiring its design and craftsmanship, though some note the need for better maintenance. The “Visitor Experience” theme reveals a recurring call for more educational displays and guided tours to enhance understanding and engagement. Maintenance and preservation are critical issues, with visitors often expressing concerns about neglect and the need for restoration efforts. Lastly, the “Cultural and Educational Value” theme underscores the palace’s role as an educational resource, though more comprehensive and engaging educational materials could be provided.

To enhance visitor engagement and enjoyment, Bandar Palace could greatly benefit from digital solutions. Implementing augmented and virtual reality (AR/VR) experiences could immerse visitors in historical reconstructions, virtual furnishings, and detailed educational overlays, significantly enriching the overall experience. These technologies can bring the architectural beauty and historical significance of the palace to life, offering a more immersive and participatory experience. However, implementing these digital solutions presents challenges, such as ensuring accessibility for all visitors and managing the initial costs and ongoing maintenance of these tools. Addressing these challenges requires careful planning, adequate funding, and a focus on inclusivity to ensure that digital solutions enhance the visitor experience for everyone.

Conclusion

Istana Bandar can enhance its role as a cultural and educational historic site by adopting digital innovations. These technologies can attract more visitors and provide an immersive, engaging experience that highlights its cultural and architectural significance. Interactive digital guides, virtual tours, informative content, reliable feedback systems, and improved maintenance can address current visitor challenges and position Jugra heritage sites as modern, accessible, and informative destinations for both local and international visitors.

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