Heritage, Space, and Satisfaction: Visitor's Perceptions of the Businesses in the Old City of Lasem, Indonesia

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Article History:	Abstract
	Lasem, Central Java, reflects a rich blend of Javanese and Chinese heritage, offering both opportunities and challenges in cultural tourism and preservation. This study explores how online customer feedback reveals visitor perceptions of Lasem's architectural and cultural elements, particularly in relation to Batik and Peranakan architecture. Using data from 13 Google Maps-reviewed businesses, the study employs quantitative and qualitative methods, analyzing star ratings, review lengths, keyword frequency, and thematic patterns. Findings show that visitor satisfaction is closely tied to cultural authenticity. Positive reviews often emphasize appreciation for heritage experiences and the adaptive reuse of historic buildings, while lower ratings highlight infrastructure issues such as water and room quality. The results underscore the role of vernacular spaces in shaping meaningful tourist experiences and highlight the need to balance heritage preservation with the expectations of modern visitors. This research offers insights for improving heritage site management and supporting sustainable cultural tourism in small historic towns.

Keywords: *batik and peranakan architecture; cultural preservation; customer satisfaction; heritage tourism*

Introduction

The city of Lasem, located in Central Java, Indonesia, is renowned for its deep Chinese-Javanese heritage and is often referred to as "Little China" or "The City of Tolerance" (Lestari, 2015). Its identity is shaped by centuries of cultural blending, which is most evident in its architecture and the Batik Tulis industry—a key cultural artifact and driver of the local economy. This unique fusion of cultures has positioned Lasem as a significant heritage destination, attracting visitors with its Peranakan houses, vibrant Chinatown, and local traditions (Roziqin et al., 2021). However, Lasem faces growing challenges in preserving its tangible and intangible heritage amidst socio-economic changes and increasing tourism demand.

Central to Lasem's cultural identity is its vernacular architecture, particularly its Peranakan houses. These structures are not merely static representations of the past but are examples of vernacular architecture that evolve over time, reflecting a dynamic process of cultural assimilation and adaptation. The Peranakan houses blend traditional Chinese architectural

elements, such as intricate carvings and symmetrical layouts, with Javanese influences like pendopo-style open spaces and local materials, embodying a synthesis of the two cultures. As Rapoport (1969) highlights in his discussions on the relationship between culture and built form, architecture is a direct manifestation of the social and cultural practices of a community. The design and function of Lasem's Peranakan houses exemplify this principle, as they serve not only as dwellings but also as spaces for social interaction, business activities, and the perpetuation of cultural traditions. This underscores their role as living testaments to Lasem's rich cultural narrative.

Lasem's appeal as a cultural tourism destination lies in its ability to offer a diverse range of experiences, from exploring these ancient Peranakan houses and visiting Batik workshops to participating in local cultural festivities. The city's Chinatown (Pecinan) area, with its distinctive Chinese-Javanese architecture, is a significant draw for visitors (Knapp, 2013). However, Lasem is not merely a historical site frozen in time; it is a living vernacular settlement where traditional practices coexist with contemporary developments. The everyday lives of its inhabitants, who continue to use and adapt these architectural spaces, contribute to the city's authenticity as a cultural destination. This duality enhances its value, offering tourists a glimpse into a community that maintains its heritage while navigating the demands of modern life.

The preservation of both tangible and intangible cultural elements—such as architecture, traditions, and social practices—requires a delicate balance between historical integrity and modern economic sustainability (Mason, 2004). This is particularly evident in Lasem, where the fusion of Chinese and Javanese cultures is expressed through its unique architectural forms, like the Peranakan houses, as well as through traditions such as Batik Tulis (Wulandari et al., 2024). While previous studies have documented Lasem's heritage elements, there is an issue regarding the limited understanding of how visitor perceptions, particularly captured through customer feedback, influence engagement with heritage sites. The overarching aim of this research is to enhance the sustainability of Lasem's cultural tourism by deepening the understanding of visitor perceptions and their influence on heritage engagement.

To achieve this aim, the study sets out the following objectives:

1. To identify the relationship between visitor satisfaction levels and the detail provided in customer feedback.
2. To understand seasonal and event-driven patterns influencing visitor engagement with Lasem's heritage sites.
3. To highlight cultural elements valued by visitors, emphasizing Batik production, Peranakan architecture, and associated cultural practices.
4. To propose targeted improvements to enhance visitor experiences within heritage-related businesses in Lasem.

By grounding the study in Lasem's unique cultural and architectural context, this research offers a framework for leveraging customer feedback to inform urban planning, heritage management, and tourism development strategies.

Theoretical Framework

1.   Heritage, Space, and Visitor Perceptions

Understanding heritage tourism requires an appreciation of key theoretical concepts related to heritage, space, and visitor perceptions. Cultural heritage preservation extends beyond the conservation of physical structures and includes protecting intangible narratives, cultural practices, and the meanings communities ascribe to their heritage (Mason, 2004). Architecture, in this context, is understood as an embodiment of cultural and social practices, continuously adapting to reflect evolving community values and social needs (Rapoport, 1969).

Heritage tourism must also strike a balance between preserving authenticity and commercializing heritage sites to prevent commodification, which may erode the original value and authenticity that attract visitors in the first place (Montealegre & Sánchez, 2018). Adaptive reuse is increasingly emphasized as a viable strategy to ensure the sustainability of heritage sites while simultaneously catering to modern tourism demands (Huang et al., 2022).

2.   Visitor Satisfaction and Behavioral Intentions

Understanding how visitors interact with heritage requires careful consideration of how the heritage experience is presented on-site, with different methods such as immersive play or guided discussion having unique impacts on visitor engagement and satisfaction (Santoso & Gjerald, 2022). Visitor satisfaction is also influenced by how heritage management is perceived, which in turn shapes the overall image of the destination and impacts the intention to

revisit or recommend the site (Vong, 2013). The perceptions tourists have of heritage in relation to their own identity are also important, as the meanings they assign to heritage sites influence their engagement and visitation patterns (Poria et al., 2006). The perceived value of architectural heritage plays a significant role in shaping satisfaction, underscoring the need to align visitor experiences with expectations and values (Chen, 2023). Visitor satisfaction, derived from perceived service quality and value, is a critical determinant of post-visit behaviors such as revisiting and recommending heritage destinations (Chen & Chen, 2010). Satisfaction also directly affects tourists' future intentions, highlighting the importance of delivering meaningful and fulfilling experiences to secure visitor loyalty and generate positive word-of-mouth (Chen & Chen, 2010).

Building on these insights, effective heritage tourism management must integrate a deep understanding of visitor perceptions, heritage values, and satisfaction determinants (Chen & Chen, 2010; Poria et al., 2006; Vong, 2013). This approach not only supports the preservation of heritage but also maximizes the beneficial impacts of tourism on heritage sites and local communities. Therefore, this research adopts these theoretical insights to investigate how visitor perceptions and feedback influence the sustainability and management of heritage tourism in Lasem, focusing on the interplay between heritage spaces, visitor satisfaction, and perceptions of cultural authenticity.

Literature Review

Visitor satisfaction stems from the difference between pre-visit expectations and actual experiences, emphasizing the importance of effective expectation management (Luekveerawattana, 2025). Satisfaction is also influenced by personal connections and perceived authenticity, which are central to heritage experiences (Poria et al., 2006). Perceived value has been confirmed as a critical factor in shaping visitor satisfaction and revisit intentions (Chen & Chen, 2010). The quality of heritage management, particularly interpretation and promotion, also significantly affects how visitors perceive and engage with heritage sites (Vong, 2013). Presentation methods such as guided discussions or immersive activities further shape the visitor experience, although these approaches are rarely tied directly to long-term management strategies informed by visitor feedback (Santoso & Gjerald, 2022).

Balancing authenticity with tourism development is essential to avoid cultural commodification, although strategies to integrate visitor perceptions into management remain limited (Montealegre & Sánchez, 2018). Adaptive reuse is highlighted as vital for ensuring heritage site sustainability, yet its relationship to structured visitor feedback is not addressed (Huang et al., 2022). Community resilience is recognized as a core aspect of heritage sustainability, but the role of visitor perceptions and feedback mechanisms is underexplored (Wulandari et al., 2024). Atmosphere has been identified as a driver of satisfaction, though direct applications to specific contexts such as Lasem are lacking (Riswanto et al., 2023). Visitor perceptions have been broadly assessed through sentiment analysis, but these studies often overlook the role of architectural authenticity in shaping meaningful heritage experiences (Hananto, 2023).

Although presentation methods and resilience are acknowledged as key factors, existing studies offer limited insight into how ongoing visitor feedback can inform long-term heritage site management (Santoso & Gjerald, 2022; Kapucu et al., 2024). Furthermore, while the tourism potential of Lasem has been discussed, structured feedback mechanisms to support sustainable heritage management have not been sufficiently analyzed (Mandaka et al., 2022). Overall, the literature emphasizes the critical relationships between visitor expectations, perceived authenticity, heritage management practices, and satisfaction (Luekveerawattana, 2025; Poria et al., 2006; Chen & Chen, 2010; Vong, 2013). However, the practical integration of visitor feedback into sustainable heritage management, particularly in culturally distinctive contexts such as Lasem, remains notably under-explored.

Methodology

1.   Case Study Approach

This research adopts a case study methodology to explore visitor perceptions and satisfaction within the unique heritage context of Lasem, Indonesia. A case study is particularly suitable for this research because it allows an in-depth exploration of specific real-world contexts, enabling comprehensive understanding of visitor experiences, perceptions, and interactions with Lasem's heritage spaces and businesses. This approach facilitates a holistic examination of the complexities

surrounding heritage tourism in Lasem, combining both detailed qualitative insights and measurable quantitative analysis.

Figure 1. Map of Lasem and The Establishments Used as Subjects of This Study
Source: Author

For ethical considerations, all data collected and analyzed in this study are anonymized, protecting user privacy by excluding any personally identifiable information. Data usage strictly adheres to ethical standards, and the information gathered is solely intended for academic research purposes. This ethical rigor ensures the integrity of the research and respects the confidentiality of the visitors who provided their feedback.

2. Data Collection

Data for this study were gathered from Google Maps reviews of businesses situated within the heritage areas of Lasem, Central Java, Indonesia. Google Maps reviews serve as a critical source of electronic word-of-mouth (eWOM) information, providing spontaneous, user-generated content that reflects customer experiences and perceptions (Borrego & Comalat's, 2021; Lin et al., 2024) Furthermore, Mathayomchan & Taecharungroj (2020) emphasized the benefits of analyzing Google Maps reviews to examine customer experiences and sentiment in a non-intrusive and authentic way.

The dataset initially included reviews from 15 establishments in Lasem's heritage district, selected for their multifunctionality (e.g., house and coffee shop) to reflect the blend of everyday's lives, heritage and tourism dynamics. However, two were excluded due to insufficient review data, leaving 13 establishments only. The final 13 establishments ensure a representative sample as it's scattered equally around Lasem as can be seen in Figure 1. In total, 450 customer reviews were collected, each accompanied by a star rating and review text. The full list of the establishments used in this study can be seen in Table 1. This review count aligns with the established practice in eWOM studies to use large, diverse datasets to capture the range of customer sentiment accurately (Sahagun et al., 2022).

Table 1. List Of The Establishments in Lasem Chosen For This Study.

`	Name of the Establishment	Address	Rating	Number of text reviews
1	Rumah Batik Gadjah	Jl. Sunan Bonang No.35, Tawangsari, Babagan, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.5	5
2	Rumah Batik Sekar Kencana	Jl Babagan gang IV No 4, Desa Babagan, Tawangsari, Rembang, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	5	12
3	Rumah Batik Kidang Mas	Gg. 5, Tawangsari, Babagan, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.8	30
4	Lasem Boutique Hotel	Jl. Karangturi, Mahbong, Karangturi, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.6	33
5	Restaurant Hokky Lasem	Karangturi, Lasem, Rembang Regency, Central Java 59271	4.5	124
6	Rumah Batik Nyah Kiok	Jalan, Jl. Karangturi Gg. 6, Karangturi, Lasem, Rembang Regency, Central Java 59271	5	2
7	Nyah Lasem | Museum, Library, Warung & Community Center	Gg. 5 No.2, Karangturi, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.2	32
8	Omah Ijo	Karangturi, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.8	2
9	Rumah Merah Heritage Lasem	Gg. 4 No.7, Mahbong, Karangturi, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.7	152
10	Rumah Oei	Jl. Jatirogo No.10, Pandeyan, Karangturi, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.5	109
11	Adiksi Kopi and Eatery	Jl. Ps. Kawak, Pandeyan, Sumbergirang, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.8	24
12	REM KOPLING CAFE	Pandeyan, Sumbergirang, Lasem, Rembang Regency, Central Java 59271	5	1
13	Rumah Batik Lumintu Lasem	Jl. Sumbergirang No.6, Pandeyan, Sumbergirang, Kec. Lasem, Kabupaten Rembang, Jawa Tengah 59271	4.9	15

Source:

3. **Data Extraction and Pre-Processing**

Data extraction involved using a Google Maps API-based scraper to systematically collect reviews. extraction, reviews underwent several pre-processing steps to ensure data quality and reliability. Each review was cleaned to remove non-textual elements, such as emojis and extraneous symbols, which could skew text analysis. This cleaning process was conducted using Python, leveraging the "re" library for pattern matching and removal of unwanted characters.

The cleaned data was then compiled into a well-organized Excel file, defined as one with consistent formatting, clear headers, and structured columns for variables like ratings, review text, and timestamps. Importantly, all the data collected were completely anonymous, with no personally identifiable information included, ensuring adherence to privacy standards. This process aligns with eWOM methodologies that emphasize data cleaning and structuring to improve sentiment analysis accuracy, as demonstrated in Sahagun et al.'s (2022) study on coffee shop reviews.

4. **Data Analysis**

First, average ratings and rating distributions were calculated to gauge overall satisfaction levels across the selected establishments. Next, meaningful words analysis was performed using Python, leveraging "nltk" and "collections" libraries to clean, tokenize, and count the frequency of terms in the reviews. This provided insight into customer priorities and recurring themes. Topic modeling was also conducted using Python's "gensim" library, applying Latent Dirichlet Allocation (LDA) to group words into broader themes, such as cultural elements (e.g., Batik, heritage architecture) and service quality, highlighting their role in influencing customer perceptions. These tools facilitated an efficient and systematic approach to understanding patterns and themes in customer feedback (Atkinson, 2024).

In the context of vernacular settlement–based tourism, where visitor impressions are often nuanced and tied to architectural authenticity, text mining provides a real-time snapshot of how tourists perceive and experience these cultural landscapes (Zahra, 2024). Additionally, the average length of reviews was analyzed in relation to star ratings to explore whether detailed feedback correlated with higher satisfaction levels, revealing insights into the richness of customer engagement.

Temporal trends in ratings were also tracked, offering valuable information on seasonal or event-driven fluctuations in tourist engagement. Keywords were analyzed by star rating to identify common terms associated with high and low satisfaction levels, enabling the identification of areas for improvement. These analyses collectively inform targeted recommendations to enhance tourist experiences while preserving the cultural and architectural authenticity of Lasem's heritage sites.

5. **Analytical Methods**

To process and analyze the dataset systematically, Python was employed as the primary tool, leveraging its extensive libraries for data manipulation, visualization, and natural language processing. Rating distributions and averages were computed using pandas, a widely used library for data analysis and manipulation, with bar charts created through matplotlib to visualize customer satisfaction patterns. Exploratory Data Analysis (EDA) methods such as this are essential for summarizing and visualizing key data features effectively, as highlighted by Sahoo et al. (2019), who emphasized Python's versatility in data cleaning, statistical exploration, and graphical presentation.

The dataset was pre-processed by converting text to lowercase, removing stopwords and non-alphanumeric characters, and tokenizing the text. This preparation ensured a clean input for further analyses and aligns with established practices for processing noisy customer reviews, as discussed by Hananto (2023). Keyword frequency analysis was performed to identify significant terms in customer reviews, using collections. Counter to quantify word occurrences. To reveal latent themes, topic modeling was applied with the Latent Dirichlet Allocation (LDA) algorithm from the "gensim" library, which identifies clusters of co-occurring terms. This technique has proven effective in summarizing customer opinions and identifying evolving topics over time, as demonstrated in comparative analyses by Krishnan (2023) and Bagheri et al. (2013).

Average review lengths were calculated and analyzed in relation to star ratings, while temporal trends were examined by grouping reviews by monthly intervals, converting timestamps into datetime formats. Keywords were

further segmented by star rating to highlight differences in customer priorities across satisfaction levels. These keywords were categorized into two groups: common keywords and unique keywords. This categorization helped distinguish overarching themes from specific areas of praise or critique. Using Python, the "pandas" library was employed to filter and group review text by star ratings, while collections counter identified the frequency of keywords within each group. Common keywords were extracted by identifying terms with high frequencies across all ratings, whereas unique keywords were isolated by subtracting the common terms from each individual rating group.

Introduction to Case Study

1.   Cultural Heritage and Architecture in Lasem

Lasem, referred to as "Little China" or "The City of Tolerance," holds a distinctive place in Indonesia's architectural and cultural landscape due to its blend of Javanese and Chinese influences (Lestari, 2015). The Peranakan houses, central to its Chinatown, exemplify this cultural synthesis and are recognized for their historical and architectural significance (Roziqin et al., 2021). These houses have also played an essential role in the economic activities of Lasem, particularly in supporting the Batik Tulis industry, which remains a cornerstone of the town's identity (Wulandari et al., 2024). However, despite their importance, these heritage structures face significant challenges, including neglect, insufficient maintenance, and socio-economic shifts, which jeopardize their preservation (Knight & Grab, 2024).

The preservation of Chinese settlements in Lasem has become a key concern in recent years, as many of the ancient houses are at risk of degradation due to neglect and insufficient maintenance. Studies have highlighted that these heritage sites face physical vulnerabilities, exacerbated by the migration of local residents and insufficient resources for conservation (Fabbricatti et al., 2020). The challenges of preserving these buildings are compounded by the socio-economic shifts that have taken place over the decades, including changes in local industries and the decline of Lasem's historical port city function (Radityawati et al., 2020). Despite these difficulties, the Peranakan architecture in Lasem continues to attract attention, not only for its historical significance but also for its role in the local tourism economy (Darmayanti & Bahauddin, 2020).

The Peranakan houses also provide an opportunity to broaden the understanding of vernacular architecture. While traditionally associated with rural settings and local material use, vernacular architecture extends beyond rural contexts to encompass evolving, modern settings where cultural adaptation plays a central role (Tiwari & Vij, 2024). This broader definition highlights vernacular architecture as an adaptive response to community needs, shaped by cultural, social, and economic factors, and continuously evolving over time. Lasem's Peranakan houses embody this dynamic nature, blending traditional Chinese architectural elements like carved wood panels and symmetrical layouts with Javanese influences, such as pendopo-style open spaces and local materials (Darmayanti & Bahauddin, 2021).

Over time, these homes have adapted to modern demands, such as integrating commercial spaces to support tourism, demonstrating the fluid boundaries between preservation and modernization. These houses, therefore, not only serve as historical relics but also as active participants in the daily lives of the community, functioning as Batik workshops and commercial hubs. Despite their evolving role, the Peranakan houses face significant challenges, including neglect, insufficient maintenance, and socio-economic shifts, which jeopardize their preservation (Knight & Grab, 2024). Addressing these challenges requires a nuanced approach that respects their vernacular adaptability.

Furthermore, Lasem's architectural heritage is not only preserved in its buildings but also experienced through the lived practices that animate these spaces. Figure 2 presents representative examples: a shaded communal outdoor area where vernacular spaces support informal social life (a); women engaged in Batik Tulis production, preserving intangible cultural heritage (b); and the richly ornamented interior of a Chinese temple reflecting Lasem's layered cultural identity (c). These practices show how authenticity in Lasem is not merely visual or historical, but rooted in ongoing community activities.

Figure 2. Map Of Lasem and The Establishments Used As Subjects Of This Study
Source: Author

2. Heritage Tourism and Social Resilience in Lasem

Heritage tourism in Lasem has emerged as a significant contributor to the preservation and management of its cultural sites. According to Wulandari et al. (2024), the resilience of the local community plays a critical role in maintaining the integrity of the Chinese settlement as a tourist destination. Social resilience refers to the community's capacity to cope with challenges such as urban decay, the economic downturn, or environmental degradation, while continuing to sustain and promote heritage tourism (Kapucu et al., 2024). The preservation of Lasem's Chinatown is not only about maintaining the physical structures but also about fostering the cultural and social practices that have defined the community for centuries (Sudarwani & Rukayah, 2022).

Local residents, particularly the owners of ancient houses, have demonstrated resilience by adapting their properties for tourism purposes, which has provided both economic benefits and a means of conserving the area's heritage (Sari & Syifauddin, 2022). The local government's role as a facilitator and regulator is also crucial in empowering these communities, especially in the context of promoting creative industries such as Batik Tulis, which remains central to Lasem's cultural and economic identity (Roziqin et al., 2021).

Lasem's experience provides valuable insights into the global challenges faced by vernacular settlements adapting to modern pressures. Similar to other heritage towns around the world, Lasem navigates the delicate balance between preserving its cultural authenticity and embracing economic modernization. The success of Lasem as a heritage tourism destination depends on the active participation of local communities, the sustainability of their cultural practices, and the ongoing conservation of the unique architectural elements that define the town (Cahyani et al., 2023).

Lasem presents a complex case of heritage preservation where social resilience, cultural authenticity, and economic sustainability are intertwined. The town's Peranakan architecture and Batik industry are not merely tourist attractions but are fundamental components of its cultural identity, demonstrating the importance of preserving both the tangible and intangible aspects of heritage in sustaining the tourism economy.

Result

1. Overview of Customer Reviews and Ratings

The dataset encompasses customer reviews from 13 establishments within Lasem's heritage district, reflecting a broad spectrum of customer feedback. Ratings across establishments range from 4.2 to 5.0, with an average rating of 4.7, indicating generally high levels of satisfaction. Among the establishments, REM Kopling Cafe, Rumah Batik Nyah Kiok, and Rumah Batik Sekar Kencana achieved the maximum rating of 5.0. Notably, Rumah Oei received the highest volume of reviews (1,046), followed by Rumah Merah Heritage Lasem (252) and Restaurant Hokky Lasem (241). In contrast, Aneka Batik and REM Kopling Cafe had only two and one review, respectively, highlighting significant disparities in customer engagement levels.
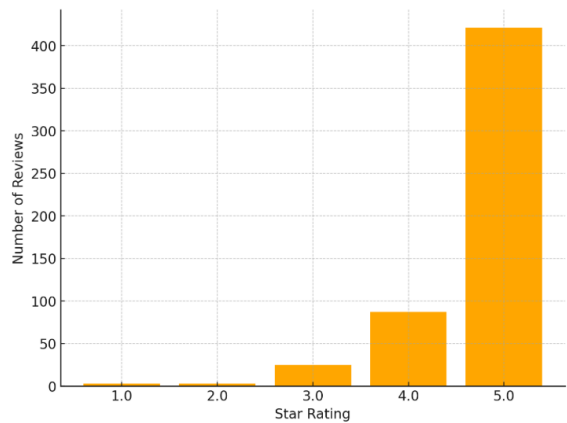
Figure 3. Distribution Of Star Rating Over Various Number Of Reviews Among Tourism Establishments in Lasem
Source: Author

As shown by Figure 3, the distribution of star ratings further underscores the predominance of positive feedback, with the majority of reviews falling in the 5-star category, as illustrated in the bar chart. Establishments such as Rumah Batik Lumintu Lasem and Rumah Batik Kidang Mas achieved near-perfect average ratings of 4.9 and 4.8, respectively, despite receiving a modest number of reviews. Meanwhile, Nyah Lasem reported the lowest average rating of 4.2, suggesting room for improvement in customer satisfaction. These findings provide a foundational understanding of customer perceptions across establishments, setting the stage for deeper analyses into review content and satisfaction trends.

2.   Textual Patterns and Themes

The As shown by Figure 4, analysis of customer reviews revealed meaningful textual patterns and thematic insights. Frequently used terms included "place" (mentioned 187 times), "Lasem" (138 times), "batik" (107 times), and "good" (103 times), highlighting a focus on the locality, the cultural relevance of batik, and generally positive sentiments. Other common terms, such as "house," "food," and "Chinese," point to recurring subjects in customer experiences, particularly the intertwining of cultural, residential, and culinary aspects in Lasem's heritage tourism. Topic modeling further categorized the reviews into five distinct themes.

The recurring themes of Batik and heritage architecture in the reviews demonstrate their cultural significance as central elements in preserving the vernacular identity of Lasem. Visitors frequently express appreciation for the integration of these elements into their tourism experiences, underscoring the importance of maintaining the authenticity of these cultural artifacts. For instance, terms like "batik" and "heritage" often appear in the context of traditional craftsmanship and the architectural uniqueness of Peranakan houses, which serve as symbols of Lasem's rich cultural synthesis. These reviews highlight how visitors recognize and value the adaptive reuse of these vernacular spaces, particularly their transformation into Batik workshops and tourist accommodations, reflecting the evolving use and appreciation of vernacular spaces.
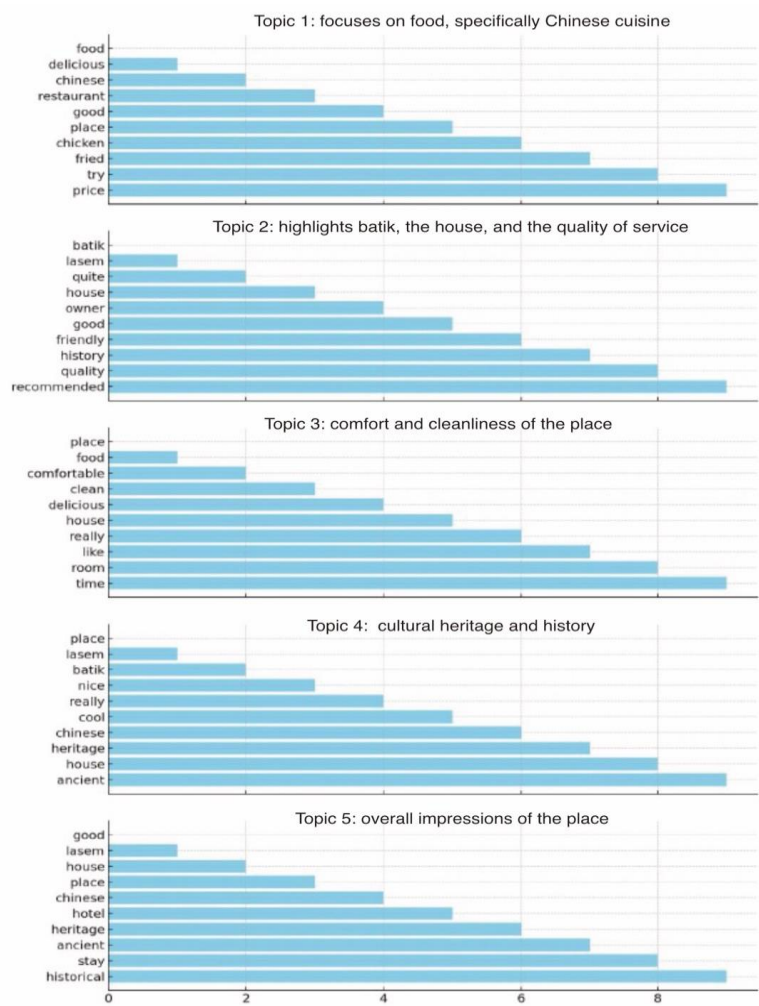
Figure 4. Five Distinct Themes Found on Reviews in Tourism Establishments in Lasem and Its Respective Top Words
Source: Author

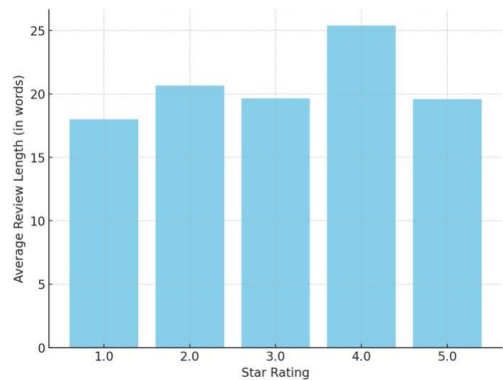## 3.   Review Characteristics and Trends

Figure 5. Average Review Length by Star Rating
Source: Author

The analysis of review lengths shown by Figure 5, revealed notable patterns in customer engagement across different star ratings. Reviews with higher ratings, particularly 5-star reviews, tend to be significantly longer compared to lower ratings. This suggests that highly satisfied customers are more likely to elaborate on their positive experiences, providing detailed feedback about aspects such as service quality, ambiance, and cultural elements. In contrast, reviews with moderate ratings,

such as 3-star reviews, are generally shorter, indicating less investment in describing the experience. This disparity highlights the strong correlation between satisfaction levels and the effort customers put into sharing their feedback.

Temporal trends in ratings were also examined, revealing variations in satisfaction across establishments over time. As shown by Figure 6, establishments such as Rumah Batik Lumintu Lasem and Rumah Merah Heritage Lasem displayed consistent high ratings, whereas others, like Nyah Lasem, demonstrated fluctuations in customer satisfaction. These trends suggest that external factors such as seasonal variations, specific events, or operational changes might influence customer experiences. Furthermore, the consistency in review lengths for certain establishments, such as Adiksi Kopi and Eatery, indicates uniformity in customer perceptions, while others like Lasem Boutique Hotel exhibited more variation, reflecting diverse customer experiences. These findings underscore the importance of monitoring both review content and engagement metrics to enhance service quality and address customer concerns effectively.

4. Insights by Rating Level

Table 2. List Of Common and Unique Keywords Per Star Rating

Star rating	Common Keywords	Unique Keywords
3-star	"batik," "chinese," "food," "good," "house," "lasem," "place"	"puyunghai" (a type of dish), "especially," "room," "water"
4-star	"chinese," "delicious," "food," "good," "house," "lasem," "place"	"ancient," "comfortable," "heritage," "stay," "old"
5-star	"batik," "chinese," "delicious," "food," "good," "house," "lasem," "place"	"friendly," "nice," "really," "service"

Source:

The analysis of keywords across different star ratings as shown by Table 2 reveals distinct customer priorities and areas of satisfaction. Three-star reviews typically highlight general appreciation for food and cultural elements but also point out specific issues, such as room quality or water facilities, suggesting areas where customer expectations were not fully met. In contrast, 4-star reviews reflect largely positive experiences, particularly with cultural and historical aspects, while noting minor shortcomings that, if addressed, could elevate the rating to 5 stars. This indicates that moderately satisfied customers provide constructive feedback that businesses can use to fine-tune their offerings.
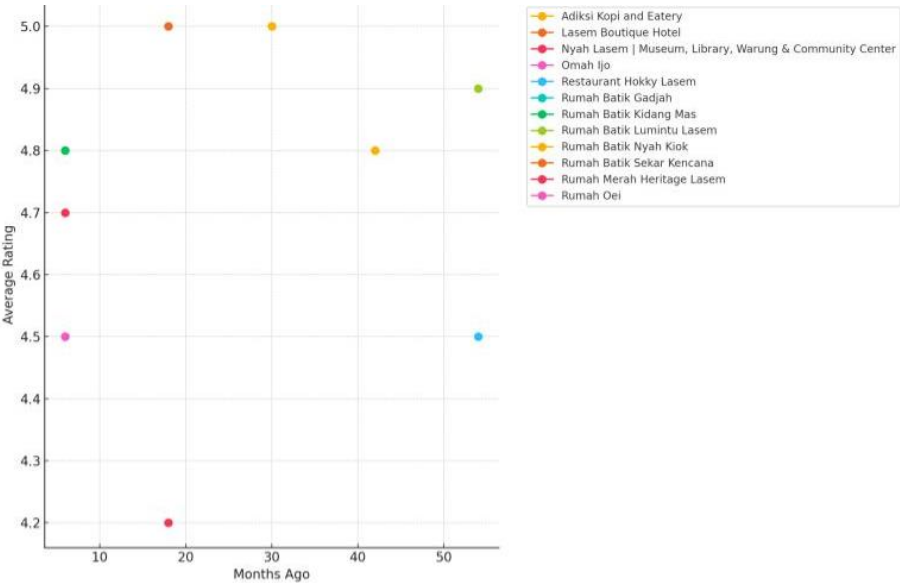

Figure 6. Average Rating Trends Over Time by Establishment
Source: Author

Five-star reviews emphasize emotional engagement and exceptional service, with reviewers frequently mentioning personal interactions and memorable experiences as key factors contributing to their high satisfaction. Across all ratings, food, heritage, and cultural aspects emerge as central themes, highlighting the importance of these elements in shaping customer experiences in Lasem. The high frequency of keywords such as "batik," "heritage," and "house" in 5-star reviews reflects a deep appreciation for Lasem's vernacular architecture and its cultural narratives.

The reviews suggest that visitors value the adaptability of Peranakan houses, which serve dual roles as historical relics and functional spaces for tourism activities. This adaptive reuse exemplifies the dynamic nature of vernacular processes, where spaces evolve to meet modern demands while preserving their historical and cultural essence (Manurung et al., 2022). The data demonstrate that customer reviews not only reflect immediate experiences but also capture broader interactions with Lasem's cultural heritage, making them a valuable tool for understanding and preserving the identity of vernacular settlements.

Discussion

This study explored customer satisfaction and engagement with Lasem's heritage district, leveraging Google Maps reviews to uncover textual patterns, rating trends, and sentiment associations. The findings align with prior research, such as that by Riswanto et al. (2023), who emphasized cultural and historical links as key drivers of tourist satisfaction, as clearly illustrated by the dominance of themes related to Batik and Peranakan architecture in customer reviews (Figure 3).

Additionally, consistent high ratings observed for establishments such as Rumah Batik Lumintu Lasem and Rumah Merah Heritage Lasem (Figure 5) align closely with Chen and Chen (2010), who underscored the importance of perceived authenticity and value in shaping visitor satisfaction. This parallel reinforces the importance of tailoring experiences to match visitors' evolving expectations of heritage tourism.

Lasem's Peranakan houses illustrate the fluid boundaries of vernacular design, where architecture is shaped by cultural identities as much as by local climate and materials. While the use of pendopo-style open spaces, carved wooden screens, and locally sourced construction reflect Javanese–Chinese traditions, these same buildings have evolved to accommodate changing social and economic functions—such as Batik workshops or boutique homestays.

This adaptability aligns with Rapoport's (1969) view of vernacular forms as living, evolving expressions of culture: they are not merely artifacts of the past but are continually reshaped by new demands, thus reinforcing the notion that vernacular architecture is simultaneously grounded in place and reflective of shifting communal identities. In this context, "cultural authenticity" is not a fixed trait but a perceived quality shaped by how visitors emotionally connect with traditional forms like Batik-making or Peranakan houses repurposed as cafés or homestays.

1.   Cultural Heritage as a Driver of Satisfaction

The role of cultural elements such as Batik and heritage architecture in influencing customer satisfaction aligns with Wulandari et al. (2024), who emphasized the significance of social resilience in managing heritage tourism in Lasem. This study corroborates their findings by showing that keywords related to cultural heritage, like "batik" and "heritage," dominate 5-star reviews (Table 2), highlighting their centrality to customer satisfaction. Similarly, the importance of customer engagement and emotional resonance in tourism, as reflected in 5-star reviews with terms such as "friendly" and "service" (Table 2), is consistent with findings by Hananto (2023), who noted that cultural appreciation plays a pivotal role in enhancing tourism value.

The adaptive use of heritage structures, such as turning historical houses into tourist destinations, parallels observations by Wulandari et al. (2024) and Mandaka et al. (2023), who identified that sustainable tourism requires adaptive and transformative strategies involving community participation and stakeholder engagement. The frequent mention of cultural terms in higher-rated reviews (Figure 3 and Table 2) supports this adaptive approach, showcasing the value of preserving both tangible and intangible heritage.

The findings also underscore the role of vernacular spaces, such as Peranakan houses, in shaping visitor satisfaction. Lasem's integration of its architectural and cultural heritage into tourism activities provides a valuable blueprint for other heritage settlements. By transforming Peranakan houses into multifunctional spaces—such as Batik workshops, boutique accommodations, and cultural landmarks—Lasem demonstrates how adaptive reuse can sustain economic viability while

preserving cultural authenticity (Table 1 and Figure 1).

As evidenced by studies on adaptive reuse in Bethlehem and Visby, repurposing historic buildings not only extends their functional lifespan but also fosters vibrant economic and social environments, revitalizing neighborhoods and preserving cultural identities (Ijla & Broström, 2015). Similarly, Lasem's adaptive reuse approach creates opportunities for economic regeneration while maintaining the unique architectural character and cultural heritage of its vernacular spaces, aligning with global best practices for sustainable development in heritage cities. This approach aligns with global vernacular preservation strategies, emphasizing community-driven solutions and the active repurposing of historical assets.

2.   Challenges and Divergences in Heritage Tourism

However, some findings challenge existing literature. For instance, while previous studies, including Riswanto et al. (2023), highlight atmosphere as a critical driver of satisfaction, the results suggest a more subdued role of ambiance in shaping customer feedback compared to factors like service and cultural engagement (Table 2). This divergence might reflect unique regional or demographic preferences in Lasem's visitor base. Furthermore, while Chen and Chen (2010) posit that dissatisfaction often arises from unmet expectations regarding physical attributes and value, our keyword analysis of lower-rated reviews (Table 2) indicates a stronger focus on infrastructure-related issues, such as "water" and "room," which may be specific to the operational challenges of heritage sites in rural contexts like Lasem. These infrastructure-related issues also suggest potential risks in over-commercialization, contradicting research by Wulandari et al. (2024) that highlights the economic potential of heritage tourism through commercialization.

This also contrasts with the more optimistic view presented by Mandaka et al. (2023), which largely emphasizes the historical and morphological significance of urban heritage while underplaying the challenges of maintaining quality customer experiences. Additionally, this study highlights the nuanced relationship between customer satisfaction and detailed feedback, with longer reviews typically corresponding to higher satisfaction levels (Figure 4). While Krishnan (2023) focuses on the role of digital engagement in promoting tourism, this study identifies a more localized pattern where cultural appreciation drives detailed customer feedback (Table 3), suggesting that tourism strategies in small heritage towns like Lasem may need to prioritize storytelling and experiential depth over broader digital marketing efforts.

The findings align with Rapoport's (1969) theoretical framework, which emphasizes the interplay between culture and built form. The Peranakan houses in Lasem exemplify how vernacular architecture serves as a dynamic medium for cultural expression, evolving over time to accommodate modern uses while preserving historical significance (Figure 1). The frequent mention of keywords such as "house," "heritage," and "batik" in reviews (Figure 3) reflects visitors' recognition of these spaces as both cultural artifacts and functional venues. Rapoport's theory posits that built environments are shaped by cultural and social practices, and Lasem illustrates this through the adaptation of its vernacular spaces to tourism (Februandari, 2020). These spaces help visitors engage with Lasem's evolving cultural narrative. The study reinforces the idea that successful heritage preservation involves not only maintaining physical structures but also ensuring their relevance to contemporary users.

Conclusion

This paper concludes that customer satisfaction in Lasem's heritage district shows a clear indication of correlation with establishments' effective integration of cultural authenticity, particularly through Batik craftsmanship and Peranakan architectural heritage. However, the findings also reveal critical areas requiring improvement, notably in infrastructure and maintenance. Establishments such as Nyah Lasem consistently received lower ratings due to issues related to room quality, cleanliness, and basic amenities such as water facilities. This indicates a significant disparity between cultural offerings and the physical infrastructure in some establishments, highlighting the necessity for targeted improvements.

The study also concludes that positive emotional engagement through personalized and friendly service significantly enhances customer satisfaction. Detailed feedback, predominantly associated with higher star ratings, underscores the critical role of service interactions in shaping visitor experiences. Conversely, limited and generalized feedback typically corresponds with lower satisfaction, emphasizing the need for businesses to actively encourage detailed visitor reviews. Food quality, particularly the availability of local and Chinese cuisines, emerges as a substantial factor influencing visitor perceptions positively. Establishments offering distinct culinary experiences consistently achieve higher visitor satisfaction, confirming the importance of food as a cultural and experiential element within Lasem's tourism landscape.

Temporal fluctuations in visitor satisfaction, influenced by seasonal variations or specific events, were also identified. This suggests that heritage businesses in Lasem must strategically manage their operational practices and promotional activities to align with changing visitor demands throughout the year. While Google Maps reviews offer real-time and authentic insights, their limitations must be acknowledged: data may reflect only digitally active users, vary in depth, and underrepresent less-reviewed businesses, affecting representativeness and thematic balance. Additionally, some establishments had inadequate review data, potentially impacting the comprehensiveness of findings. Future research is recommended to incorporate direct visitor surveys and more diversified data collection methods to further enhance the understanding of visitor satisfaction dynamics in heritage contexts.

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