



© Universiti Tun Hussein Onn Malaysia Publisher's Office

IJSCET<http://publisher.uthm.edu.my/ojs/index.php/ijscet>

ISSN : 2180-3242 e-ISSN : 2600-7959

International
Journal of
Sustainable
Construction
Engineering and
Technology

Tourists' Perspectives on Condition of Heritage Buildings and Resiliency of the Heritage Tourism Industry in Melaka

Syed Burhanuddin Hilmi Syed Mohamad¹, Mohammad Ashraf Abdul Rahman^{2*}, Azeanita Suratkon¹, Farah Shahrin³

¹Faculty of Civil Engineering and Built Environment
Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor, MALAYSIA

²Centre for Conservation, Archaeology, Surveys and Heritage Rehabilitation
Kompleks Warisan Melaka, Jln Kota, Bandar Hilir, 75000 Malacca, MALAYSIA

³School of Architecture, Building and Civil Engineering
Loughborough University, Ashby Road, Loughborough, Leicestershire LE11 3TU, UK

*Corresponding Author

DOI: <https://doi.org/10.30880/ijscet.2023.14.02.026>

Received 12 April 2023; Accepted 12 April 2023; Available online 08 May 2023

Abstract: Heritage buildings have been seen as an asset that needs to be maintained not only for the sake of history and culture but also as a legacy for future generations. In Melaka, heritage buildings have become a source of pride for the people of Malacca and also the main source of income for the state government through heritage tourism activities. It is important to ensure that these heritage buildings continue to recover and be free from damage so that the tourists who come have a good experience. This study is focused on the issues which were concerning the condition of heritage buildings in Malacca from the perspective of tourists. Heritage buildings around the tourist spot in Malacca were selected as locations for this study. The study adopted a questionnaire survey, that involved 211 local tourists as the respondents of the survey. The respondents were requested to gauge the conditions issue and the resiliency of heritage buildings using 5-points Likert scale. The collected data were analysed descriptively. The results found that the overall average condition issue mean value is high ($M = 4.05$) and can be interpreted as satisfactory. This indicates that the level of satisfaction with the condition received is high. Although most respondents expressed a good experience with the condition of the heritage buildings that they had visited, there is still room for improvements. The findings also show that all the agreement statements related to the resiliency of the heritage tourism industry in Melaka have an average score of 79%. As a result of the survey, it is important that the parties involved in heritage management follow the conservation standards, promote, and practice good integrity, especially in ensuring the originality and authenticity of materials used as well as good work procedures to ensure the future resiliency of the heritage tourism industry in Malacca.

Keywords: Conservation, heritage building, maintenance, museum, resiliency

1. Introduction

Malacca was known as a great civilization in the early days of its existence (Goh, 2014). Malacca's greatness has become a dream for colonial powers such as the Portuguese, Dutch, and British seeking to conquer and expand their influence in Asia. Melaka's conquest from 1511 until its independence in 1957 left a series of distinct and diverse architectural legacies. The Stadthuys, Porta de Santiago, and St. Paul's Church are among the famous structures that still

*Corresponding author: ashrafr@uthm.edu.my

stand in Malacca (Refer Figure 1). These buildings have become an attraction for the tourism industry and are now a must-see destination for tourists from within and outside the country.



Fig. 1 - Figure description (a) The Stadthuys; (b) Forte de Santiago; (c) St. Paul’s Church

The presence of tourists in Melaka to admire the beauty of this heritage architecture has provided the state government with an opportunity to develop the heritage tourism industry and boost the state's economy. According to Ismail et. al., (2018), heritage tourism has become one of the most important sources of income for the state of Melaka. Besides that, tourism activities were also enhanced by initiatives taken by the federal and the state government to restore, maintain, and adapt these buildings into museums, gallery as well as heritage centres. As a result, heritage architecture has emerged as the most important asset that must be maintained and preserved to ensure its resiliency.

The resiliency of these buildings is a valuable asset to the state of Melaka's heritage tourism sector and has significant ramifications for the state's visitors. All flaws and damage must be addressed and fixed as effectively as feasible. If the repair process takes longer than expected, it will reflect poorly on the state government and cause visitors to be dissatisfied (Grum, 2017; Salonen and Deleryd, 2011)

Dissatisfaction can create a negative experience for visitors and ultimately discourage the efforts that have been made. Therefore, this paper is concerned to get the tourists' perspective on their experience whether they are satisfied or not with the condition of the heritage buildings that they had visited.

2. Issues on Heritage Buildings Condition

In numerous earlier studies, the variety of issues pertaining to the sustainability of the condition of heritage buildings have been discussed widely. These includes of both quantity and quality issues. According to Zuraidi et. al. (2018), common faults or sometimes referred to as cosmetic defects, account for the majority of issues with heritage buildings' conditions. Cracks, dampness, and harmful growth are a few instances of the common faults. Apart from giving a bad appearance, those faults also give the perspective that remedial actions are not given enough attention (Nowogonska, 2020; Zolkafli et. al., 2018). On the other hand, Nkosi et. al. (2020) claims that issues with building conditions also include the deficiencies of the building services and its equipment, such as ineffective mechanical and electrical systems, malfunctioning plumbing system and including no fire protection equipment. This will indirectly expose the risk of danger to visitors and residents of the building.

According to Silva and Henriques (2021), the issue of poor indoor air quality also contributes to inefficient building conditions. This includes a poor ventilation system in supplying clean air into the building. This according to Mustafa et. al. (2019) is due to weaknesses in managing maintenance regularly and proactively. Furthermore, the execution of repair work that is not planned and follows the correct procedure is an issue that requires attention. According to Cruz et. al. (2021), the quality of heritage building repair work is subject to the conservation principle of minimal intervention. This also includes the originality and authenticity of the repair materials (Arshad, 2017). Another problem that requires attention is the execution of unplanned repair work that adheres to the standards. According to Subra (2016), the standard of repair work on historic structures is governed by the conservation principle, which minimizes intervention. This also pertains to the originality and authenticity of the materials employed in the repairs (Wang et. al., 2015). The following issues concerning heritage building conditions were further summarized in Table 1.

Table 1 - Summary of heritage building condition issues

Condition Issues	Detailed Issues	References
Common defects	Erosion of mortar; Peeling paint; Cracking of walls; Roof defects; Dampness; Harmful growth.	Alaudin et. al. (2016); Hanafi et. al. (2018); Noor et. al. (2019); Ramli (2021)
Deficiencies of building services system and equipment	Lighting; Fire protection system; Plumbing; Drainage; HVAC; Sanitation.	Zuraidi et. al. (2017); Samodra and Sudarma (2019); Pau et. al. (2018); Tan et. al. (2018)
Poor indoor environment	Ventilation; Odour; Dizziness; Itchy, Respiratory.	Munarim (2016); Zuraidi et. al. (2017); Prieto et. al. (2019)

Repair works not accordingly follow conservation principles	Interventions; Tagging; Materials; Finishing.	Workmanship; Subra (2016); Kumar et. al. (2020); Croce (2021)
Heritage integrity	Originality; Authenticity.	Dyson et. al. (2016); Arshad (2017)

3. Methodology

The study's goal is to identify issues concerning the condition of heritage buildings in Malacca from the perspective of tourists. Heritage buildings around the heritage civil zone were selected as locations for this study. Based on the literature review, five main issues were identified. The set of questionnaires that had been developed before was distributed by the enumerator to the respondents who were local tourists visiting the heritage architecture in the core zone. The objective of the questionnaire is to determine the level of experience of tourists whether they are satisfied with the condition of the building they visit.

This questionnaire has 3 parts which are Part A (Demographic Profile), Part B (Measurement of Tourist Experience) and Part C (Resiliency of the Heritage Tourism Industry). For Part A, respondents are given a choice of answers while for Part B, respondents need to express their level of experience based on a 5-point Likert Scale where: 5=Very Satisfied; 4= Satisfied; 3=Moderately Satisfied; 2=Not Satisfied; and 1=Very Not Satisfied; (Musa et. al., 2021). As for part C, respondents need to state their agreement on the questions given in determining whether the heritage tourism industry is still able to be empowered or otherwise. A pilot study was conducted to confirm the validity of the questionnaire developed on representatives of selected government agencies (Nos = 2), industry practitioners (Nos = 2) and academicians (Nos = 2). The value established from Cronbach's Alpha Reliability Test is 0.87 which shows a significant high.

After the questionnaire was returned, the data was analysed using descriptive analysis methods involving frequency, percentage, mean and standard deviation. The overall mean value is used to interpret the level of tourists' experience of the building's condition.

4. Results and Discussion

A total of 300 sets of questions were distributed, with only 267 sets returned This makes the overall response rate for this study 89%. Aside from the number returned, 56 sets are incomplete and thus unusable. As a result, 211 questionnaires were used in the analysis, yielding a usable response rate of 80%. The analysed data has been summarised and presented in the tables below (Table 2 and Table 3).

Table 2 - Demographic profile of respondents

Respondents' Particulars	Frequency (N=211)	Percentage (100%)
Gender		
• Male	92	43.6
• Female	119	56.4
Age		
• < 25 yrs	13	6.2
• 26 – 35 yrs	38	18.0
• 36 – 45 yrs	84	39.8
• 46 – 55 yrs	69	32.7
• > 56 yrs	7	3.3
Race		
• Malay	162	76.8
• Chinese	19	9.1
• Indian	25	11.8
• Bumiputera	4	1.9
• Others	1	0.4
Origin		
• Johore	51	24.2
• Kuala Lumpur	39	18.5
• Malacca	34	16.1
• Negeri Sembilan	23	10.9

• Perak	19	9.1
• Penang	15	7.1
• Terengganu	11	5.2
• Pahang	9	4.3
• Kelantan	6	2.8
• Kedah	2	0.9
• Sarawak	2	0.9

Table 2 summarises the findings from an analysis of the respondents' demographic characteristics. The analysis results show that the respondent sample has a higher proportion of female respondents (56.4%) than male respondents. The majority of respondents (76.8%) are Malay. Most respondents (39.8%) are between the ages of 36 and 45. This study's top five respondents were from Johore (24.2%), Kuala Lumpur (18.5%), Malacca (16.1), Negeri Sembilan (10.9%) and Perak (9.1%).

Respondents were requested to gauge five condition issues affecting the sustainability of the condition of heritage buildings using a 5-point Likert scale. The five condition issues are the common defects; deficiencies of building services system and equipment; poor indoor environment; repair works not accordingly follow conservation principles; and heritage integrity. The results of this assessment are presented in Table 3.

Table 3 - Results of the assessment of condition issues

Condition Issues	Frequency (%)					(M)	(SD)
	1	2	3	4	5		
1. Common defects	1 (0.5)	23 (10.9)	53 (25.1)	126 (59.7)	8 (3.8)	3.55	0.75
2. Deficiencies of building services system and equipment	3 (1.4)	3 (1.4)	66 (31.4)	126 (60.0)	12 (5.8)	3.67	0.67
3. Poor indoor environment	0 (0.0)	1 (0.4)	5 (2.2)	104 (49.1)	102 (48.4)	4.46	0.57
4. Repair works not accordingly follow conservation principles	1 (0.7)	2 (1.1)	6 (2.9)	110 (52.0)	91 (43.3)	4.36	0.64
5. Heritage integrity	1 (0.4)	4 (1.8)	15 (6.9)	127 (60.2)	65 (30.7)	4.19	0.68
					Total	4.05	0.66

The results in Table 4 show that the five conditions issues attained a mean score in the range of 3.55 to 4.46 and with an overall average score of 4.05. The least rated score is the common faults (3.55) and the highest rated is the poor indoor environment (4.46). The interpretation of the level of satisfaction is as in Table 4 below (Lubis and Abdul Latif, 2013; Jamil, 2002):

Table 4 - The interpretations of total mean score

Total Mean score	Satisfaction level	Indication level
1.00 – 2.33	Unsatisfactory	Low
2.34 – 3.66	Moderate satisfactory	Moderate
3.67 – 5.00	Satisfactory	High

From the results in Table 3 and the interpretation of total mean score in Table 4, the study interpret that most of the respondents are satisfy with the condition issues which affect the sustainability of the condition of heritage buildings.

Table 5 - Result of resiliency of the heritage tourism industry

Agreement Statement	Agree	Not Sure	Not Agree
Do you agree that historic structures can help Melaka's heritage tourist sector grow?	169 (80.1%)	37 (17.5%)	5 (2.4%)

Do you believe that Melaka's heritage tourist sector benefits from the presence of these remaining historic buildings?	152 (72.5%)	39 (18.4%)	20 (9.5%)
Do you believe that poorly managed and maintained historical structures endanger Melaka's heritage tourist industry's capacity to survive?	183 (86.7%)	28 (13.3%)	0 (0%)

Meanwhile, in the subsequent analysis results for the agreement of resiliency of the heritage tourism industry are presented in Table 5. The findings show that all the listed agreement statements related to the resiliency of the heritage tourism industry in Melaka have an average score of 79%. This shows that there is high agreement among the respondents that the heritage tourism industry in Melaka is resilient and shall obtain great awareness from the relevant authorities needed to sustain the heritage buildings.

4.1 Discussion

Based on the findings of the study, it was found that the issue of common faults is the issue with the lowest score among the issues raised. This is followed by the issue of deficiencies of building services system and equipment. This finding is in line with a previous study by Adilah Hamim and Wahab (2020) who stated that weaknesses in ensuring the continuity of building service functionality can affect visitor satisfaction. However, for the issue of the quality of the internal environment, the satisfaction of the experience was the highest among the respondents. Issues related to the quality of repair work do not give a bad experience as issues related to heritage integrity. This finding also supports a previous study by Latief et. al. (2018) which describes the good quality of work in repairs causing most respondents to be satisfied with their experience. A study by Zolkafli et. al. (2018) also states that the quality of repair work affects the condition of the building and subsequently affects the occupants.

According to the findings of this study, the issue of the condition of heritage buildings remains at a level agreed upon by the respondents, as the majority of respondents were satisfied with the issues raised in the questionnaire. The results of this study also successfully show that the sustainability of the heritage tourism industry in the state of Melaka is at its best.

5. Conclusions and Recommendations

This study has successfully identified issues related to the condition of heritage buildings around the civil zone in heritage tourism areas in Melaka based on the experiences of local tourists who visit heritage buildings. The weakness of handling common faulty to most heritage buildings has affected the level of satisfaction experienced by the respondents. Therefore, as a continuation, it is important to ensure that the parties involved in heritage management always practiced by following the conservation standards. Furthermore, it is recommended to all parties to promote and practice good integrity, especially in ensuring the originality and authenticity of materials used as well as good work procedures to ensure the future resiliency of the heritage tourism industry.

Acknowledgement

This research was supported by Universiti Tun Hussein Onn Malaysia (UTHM) under Tier 1 grant (H750). The authors fully acknowledge team members from UTHM who provided insight and expertise that greatly assisted the research.

References

- Adilah Hamim, N. A., & Ab Wahab, L. (2020). The implementation of fire safety management at Heritage Museums, Georgetown, Penang.
- Alauddin, K., Ishakt, M. F., Isa, H. M., & Sohod, F. M. (2016). The observation of defects of school buildings over 100 years old in Perak. In MATEC Web of Conferences (Vol. 66, p. 00088). EDP Sciences.
- Arshad, M. H. Role of Authenticity in Heritage Tourism. In 2017 Wei International Academic Conference Proceedings, July 24-27, 2017, Education and Humanities (p. 111).
- Croce, P. (2021). New frontiers of composites applications in heritage buildings: Repair of exposed masonry of St. Nicola Church in Pisa. *Journal of Composites Science*, 5(8), 218.
- Cruz, A., Coffey, V., Chan, T. H., & Perovic, M. (2021). Model for the maintenance-focussed heritage building conservation. *Journal of Cultural Heritage Management and Sustainable Development*, (ahead-of-print).
- Goh, D. P. (2014). Between history and heritage: Post-colonialism, globalisation, and the remaking of Malacca, Penang, and Singapore. *TRaNS: Trans-Regional and-National Studies of Southeast Asia*, 2(1), 79-101.
- Grum, B. B. (2017). Impact of facilities maintenance on user satisfaction. *Facilities*.

- Hanafi, M. H., Umar, M. U., Razak, A. A., Rashid, Z. Z. A., Noriman, N. Z., & Dahham, O. S. (2018, December). Common Defect of Colonial Buildings in Malaysia. In IOP Conference Series: Materials Science and Engineering (Vol. 454, No. 1, p. 012186). IOP Publishing.
- Ismail, N. S., Salleh, N. Z. M., Omain, S. Z., Idris, N., Samori, Z., & Anas, N. (2018). Heritage Tourism at the Historical Town of Malacca: Examining Opportunities, Evaluating Challenges. *Journal of Academic Research in Business and Social Sciences*, 8(1), 899-912.
- Jamil, A. (2002). Pemupukan budaya penyelidikan di kalangan guru sekolah. (PhD Thesis, Universiti Kebangsaan Malaysia).
Selangor, Malaysia.
- Kayan, B. A. (2019). Sustainable built heritage: maintenance management appraisal approach. *Journal of Cultural Heritage Management and Sustainable Development*.
- Kumar, V., Singh, R., Ahuja, I. P. S., & Hashmi, M. J. (2020). On technological solutions for repair rehabilitation of heritage sites: a review. *Advances in Materials and Processing Technologies*, 6(1), 146-166.
- Latief, Y., Machfudiyanto, R. A., Soepandji, B. S., & Aldesty, R. (2018). The development of quality management systems in maintenance and monitoring the process of risk-based repair work in government buildings. In MATEC Web of Conferences (Vol. 195, p. 06005). EDP Sciences.
- Lubis, M. A., & Abdul Latif, K. A. (2013). Development and evaluation of multimedia software for the communicative Arabic implementation of the the J-QAF programme in Primary Schools. *Global Journal Al Thaqafah*, 3(2), 15–22. <https://doi.org/10.7187/gjat392013.03.02>
- Musa, M. K., Rahman, M. A. A., Azman, M. N. A., Lip, R., & Hashim, N. (2021, July). Measuring residents' satisfaction on quality of low-cost affordable housing projects: An empirical investigation. In AIP Conference Proceedings (Vol. 2347, No. 1, p. 020062). AIP Publishing LLC.
- Mustafa, M. S. S., Yusop, F., Abdullah, M. A., Rahman, M. A. A., Sari, K. A. M., Fahmi, A. R., ... & Hariri, A. (2019, November). Humidity control strategies in operation theatre Malaysia. In IOP Conference series: earth and environmental science (Vol. 373, No. 1, p. 012016). IOP Publishing.
- Nkosi, M., Gupta, K., & Mashinini, M. (2020). Causes and impact of human error in maintenance of mechanical systems. In MATEC Web of Conferences (Vol. 312, p. 05001). EDP Sciences.
- Noor, S. M., Mei, C. S., Ibrahim, I. S., Sarbini, N. N., Osman, M. H., & Khyon, N. A. (2019). Heritage building condition assessment: a case study from Johor Bahru, Malaysia. In IOP Conference Series: Earth and Environmental Science (Vol. 220, No. 1, p. 012024). IOP Publishing.
- Nowogońska, B. (2020). Consequences of Abandoning Renovation: Case Study—Neglected Industrial Heritage Building. *Sustainability*, 12(16), 6441.
- Pau, D., Duncan, C., & Fleischmann, C. (2018, October). Fire Protection and Fire Safety Design of New Zealand Heritage Building. In Asia-Oceania Symposium on Fire Science and Technology (pp. 879-893). Springer, Singapore.
- Prieto, A. J., Macías-Bernal, J. M., Chávez, M. J., Alejandre, F. J., & Silva, A. (2019). Impact of maintenance, rehabilitation, and other interventions on functionality of heritage buildings. *Journal of Performance of Constructed Facilities*, 33(2), 04019011.
- Ramli, N. N. (2021). Defect assessment form for preservation heritage buildings in Malaysia (Doctoral dissertation, Universiti Teknologi MARA).
- Salonen, A., & Deleryd, M. (2011). Cost of poor maintenance: A concept for maintenance performance improvement. *Journal of Quality in Maintenance Engineering*.
- Samodra, F. T. B., & Sudarma, E. (2019). Review on environmental and building services performance of urban heritage hospital. In MATEC Web of Conferences (Vol. 280, p. 04005). EDP Sciences.
- Silva, H. E., & Henriques, F. M. (2021). The impact of tourism on the conservation and IAQ of cultural heritage: The case of the Monastery of Jerónimos (Portugal). *Building and Environment*, 190, 107536.
- Subramaniam, S. R. (2016). A review on repair and rehabilitation of heritage buildings. *International Research Journal of Engineering and Technology*, 3(4), 1330-1336.
- Tan, S. Y., Olanrewaju, A., & Lee, L. T. (2016). Maintenance of heritage building: a case study from Ipoh, Malaysia. In MATEC Web of Conferences (Vol. 47, p. 04003). EDP Sciences.
- Wang, Y., Huang, S., & Kim, A. K. (2015). Toward a framework integrating authenticity and integrity in heritage tourism. *Journal of Sustainable Tourism*, 23(10), 1468-1481.
- Zolkafli, U. K., Zakaria, N., Mazlan, A. M., & Ali, A. S. (2018). Maintenance work for heritage buildings in Malaysia: owners' perspectives. *International Journal of Building Pathology and Adaptation*.
- Zuraidi, S. N. F., Rahman, M. A. A., & Akasah, Z. A. (2017). Measuring the Important Element of Defects in the Heritage Building. *Management*, 2(6), 73-83.
- Zuraidi, S. N. F., Rahman, M. A. A., & Akasah, Z. A. (2018). A study of using AHP method to evaluate the criteria and attribute of defects in heritage building. In E3S web of conferences (Vol. 65, p. 01002). EDP Sciences.