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Seri Iskandar Campus, Perak, MALAYSIA



**PROCEEDINGS OF THE 16TH REGIONAL
SYMPOSIUM OF THE MALAY ARCHIPELAGO
SIMPORA XVI: 2025**

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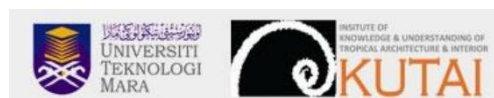
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(Sabri and Norazman, 2024). These considerations are especially important in such places as George Town, where the pressure of development often threatens the traditional cultural sites and requires careful attention to the process of community displacement and related social effects (Dawood, 2019). Not only does this approach pay tribute to the inherent virtue of heritage buildings but it also contributes to sustainable urbanism by eliminating the necessity to build new facilities and providing economic viability through renewed functionality (Hashim et al., 2024). However, the effective realization of adaptive reuse projects in George Town heavily depends on the social awareness and perception because the community involvement and approval of such projects is the key to the sustainable heritage conservation project in the long term (Halim and Tambi, 2021). This study explores the relationship between the community and the relevance of conservation of the heritage buildings in George Town and their purposes as the core aspect of the success of conservation and historical appreciation that would be maintained in the future. Local awareness and agreement on the continued use of the heritage buildings in quality preservation is crucial and in line with the collective responsibility of maintaining the heritage buildings by the local government, owners, and tenants (Halim & Tambi, 2021).

OBJECTIVES

1. To study existing adaptive reuse of heritage buildings in George Town.
2. To assess the level of public awareness and perception towards the adaptive reuse of heritage buildings as per heritage authenticity, functionality, and in accordance with the UNESCO requirements

SCOPE OF RESEARCH

The research paper is based on George Town, a UNESCO world heritage site in Penang which boasts of a variety of heritage buildings. The residents, tourists, government staff, and built-environment professionals are considered to be the target population. This was owing to time and availability constraints, which necessitated the use of convenience sampling approach to efficiently gather initial insights that could be used in considering the adaptive reuse practice in the heritage core and the areas surrounding it.

PROBLEM STATEMENT

- i. Lack of coherent adaptive reuse practice in heritage buildings.

The adaptive reuse in George Town has been used with increased rates but the practice of such reuse is imbalanced in heritage buildings. Some of the projects are able to maintain architectural integrity and are rather sensitive to add new functions; other projects focus on business sustainability and neglect conservation values (Chan et al., 2025). This discrepancy is threatening the heritage values and defeating the integrity of George Town as a UNESCO World Heritage Site. These inconsistencies in the application criteria help to create differences in the quality of design, conservation performance and sustainability of adaptive reused of heritage buildings in the long term.

ii. Moderate social awareness of current adaptive reuse projects.

Even though adaptive reuse is easily observed in George Town, there is still an average level of awareness of adaptive reuse activities and projects that are currently going on. The research shows that there is a lot of neutrality among the respondents when it comes to awareness on current projects and conservation activities. The decreased visibility and communication regarding adaptive reuse projects lower the level of participation of the population and undermine the element of community support, which is essential in maintaining heritage conservation efforts in living heritage cities like George Town (Halim & Tambi, 2021).

iii. Inadequate local authorities promotion and engagement.

Local administrations are important in controlling and facilitating adaptive reuse in the UNESCO World Heritage sites. Nevertheless, this indicates that there is moderate awareness of the population with regard to promotion activities and promotion given by local governments. This implies that current policies, incentives and communication measures are not adequately visible or available to the masses and stakeholders. Marketing inefficiency may also promote reduced involvement, slow the utilization of best practice, and reduce adherence to heritage conservation policies (Zubir et al., 2017).

iv. Problems with striking a balance between heritage authenticity and modern urban requirements.

Adaptive reuse also involves a balance of heritage preservation values and the needs of the contemporary urban lifestyle. Although respondents tend to think that adaptive reuse has attained this balance, fears are still present of the trade-offs between authenticity and usefulness. Increasing tourism, business demands and changing urban demands can bring about changes which in the long-run will reduce the significance of heritage unless wisely handled. Striking the right balance between preserving tradition and heritage authenticity and allowing it to be commercially viable, especially in the dynamic case of adaptive reuse projects, is still extremely difficult (Liao and Liu, 2023). This problem highlights the need to continually assess the adaptive reuse process in favour of sustainable urban development without undermining the cultural and historical integrity of heritage buildings.

LITERATURE REVIEW

Adaptive Reuse of Heritage Building

Adaptive reuse is the strategy of sustainable conservation that gains more recognition and presupposes repurposing existing buildings to the use related to an entirely different purpose and maintaining their historical, cultural, and architectural value (Aziz et al., 2023). Not only does this method prolong the usefulness of the structures but also leads to the environmental sustainability through the reduction of the need to use new building materials and the

decrease in wastes (Aziz et al., 2023; Qi et al., 2025). It bridges the gap between pure destruction and strict conservation and allows incorporating the modern needs without losing the fundamental nature of historic buildings (Pongsermpol & Upala, 2017).

Adaptive reuse is seen as a promising conservation approach, allowing architectural structures to be reused to other purposes or circumstances without harming the historical integrity (Aziz et al., 2017). Active community involvement is often used as a reflection of the success of adaptive reuse projects, as without it, it is impossible to ensure the long-term sustainability of such projects and to find local support (Vardopoulos et al., 2023; Viola, 2022). The involvement of the community is a foundation of sustainable adaptation reuse of historic buildings, which is the part of the collective memory and social change (Sipahi et al., 2025). These community-based strategies reflect on the social context that is often underestimated and can have a significant impact on the foundation and effectiveness of adaptive reuse strategies, as a result of which their value will be fully operationalized and their viability ensured (Sipahi et al., 2025).

This model concurs with the concepts of the human-oriented circular city, locating the adaptive reuse as the center of urban development to ensure fulfilling several goals, such as conservation of cultural value, economic feasibility, and environmental regeneration (Gravagnuolo et al., 2024; Kaya et al., 2024). A site redeveloped in an aesthetic form may elicit experiences and emotions leading to the development of identity and memories that connect social, emotional and material attachment in a community (Fajarwati, 2023).

Adaptive reuse has a consequential role in a circular economy through reducing waste and maximizing utility and value of the available components and materials, thus complying with the larger sustainability objectives (Abastante et al., 2020). Adaptive reuse also helps to revitalize the economy through the creation of new business opportunities and tourism, therefore, increasing the global resilience and appeal of cities (Spina, 2023). The experiences of the Western world after the World War II proved the effectiveness of adaptive reuse in transforming war-damaged historic buildings into functional spaces with new purposes; it has since been used extensively because of its management benefits and its ability to retain historical worth (Fajarwati, 2023).

George Town Penang as UNESCO World Heritage Site

In 2008, the city of George Town, Penang became a UNESCO World Heritage Site, an occasion which increased its international presence to a great degree and reaffirmed its unique multicultural identity. The name emphasized a wide variety of physical and virtual cultural property, specifically the shophouses of the pre-war era that were situated in the core and buffer areas (Ja'afar & Mohamad, 2021). The resulting popularity has been valuable in spurring the tourism industry, which in turn has led to the birth of new trade-related businesses such as retail stores, restaurants, art galleries and accommodations which have in effect demonstrated the economic regenerative potential of heritage designation (Sing and Sasaki, 2016).

Public Perception and Awareness

The public perception and awareness are important to sustain the heritage management so that the conservation goals may be aligned with the priorities of urban development (Zubir et al., 2017). The awareness and the consent of the local people on the ongoing use of the heritage buildings on the quality preservation are critical. Such alignment shows that there is a shared duty between the local government bodies, owners, and tenants to take care of these architectural resources (Halim & Tambi, 2021). Adaptive reuse projects can be effectively implemented, which largely depends on strong public engagement and the feeling of ownership, which is cultivated during the process of long-term exposure to the functions and importance of heritage conservation (Halim & Tambi, 2021).

RESEARCH METHODOLOGY

Research methodology can be defined as the systematic manner that is used to design the research and collect pertinent information. The extensive and properly developed methodology guarantees that the research process is conducted in an efficient way and helps to gather credible data and conduct meaningful analysis that could support the research conclusions. This paper will concentrate on adaptive reuse of heritage buildings in George Town. The research methodology has three main phases. The primary phase involves defining the problem statement, aim and research objectives of the study. The second step is that of gathering the primary data by the use of structured questionnaires that will be administered to the sampled respondents. The last phase is the analysis of the data collected to give out findings and make conclusions and recommendations. Based on this, the study is undertaken in a systematic manner with regards to these steps to guarantee coherence, transparency and applicability to the study setting.

Primary Data

The use of structured questionnaires that were distributed among the respondents who are directly or indirectly engaged with heritage buildings in George Town served as primary information that was used to carry out this study. Such respondents are residents, tourists, government officers and professionals involved with construction. The questionnaire was laid out in such a way that it seeks to find out their awareness, perception, and opinions concerning the adaptive reuse of heritage buildings.

Secondary Data

The secondary data gathering was done using a wide range of reliable sources such as academic journals, books, conference proceedings, government reports, internet publications and case studies. These materials were used to designate the theoretical and contextual

background of the study especially in comprehending the concepts of adaptive reuse, heritage conservation, sustainability practices, and policy of urban development.

Study Population

The population of the study will include people who live or visit the heritage area of George Town and professionals and stakeholders of the built environment industry. This group involves the residents in the heritage core and buffer zones, visitors visiting the heritage attractions, government officers especially those in MBPP and allied agencies as well as professionals in the built environment including contractors, engineers as well as consultants.

Sampling Method

This study was a convenience sampling study. The respondents were contacted according to his or her own choice and accessibility within the data collection period. This approach was deemed appropriate, considering time and resource constraints, and at the same time, allowed the researcher to obtain a wide range of views concerning adaptive reuse practices.

Data Collection Methods (Research Instrument)

A structured questionnaire was the main tool of collecting data. The questionnaire was separated into two parts: Section A: Demographic Profile: The questions will be answered by the respondents.

Section A: Demographic Profile: The respondents will answer the questions presented.

Section B: Knowledge and attitude towards adaptive reuse concerning heritage authenticity, functionality and UNESCO compliance.

The questionnaires were handed out physically (hard copy) to the selected publics in selected locations around Padang Kota Lama, Pulau Café, Bricklin Café and the local heritage sites. Further feedback was received among the MBPP employees and the local businesses in the conservation area.

Data Analysis

A total of 100 respondents were surveyed with the majority being the tourists and residents of the area and the rest of the surveyed professionals being architects, urban planners, and conservation experts. The questionnaire was divided into two sections, which comprised the demographic background of the people who responded to it and their level of awareness and perceptions concerning adaptive reuse in regard to the aspects of heritage authenticity, functionality, and UNESCO requirements.

The measure of responses was done on a five-point Likert scale where the options included Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree and therefore show the extent of agreement with a number of statements included in these sections. The analysis of the data collected was done using descriptive statistical methods. Pie charts, bar charts and tables are used to present the results so as to easily visualise and interpret the views of the respondents. The descriptive statistics such as mean, median, and mode were used to allow a better explanation of what the central tendency of the responses is.

RESULT AND ANALYSIS

Section A: Demographic Profile

This section gives the demographic background of the respondents who were used in this study. The demographic data have been given in terms of percentages in order to come up with a clear view of the characteristics of respondents. The demographic parameters that will be taken into consideration are:

- (i) Gender of respondents.
- (ii) Distribution Age of the respondents
- (iii) Background of the respondents.
- (iv) Visiting behavior of respondents at adaptive reuse heritage buildings
- (v) Frequency of visit distribution by the respondents to heritage sites.

The demographic profile analysis is used to put the further sections of the study into perspective thus allowing one to have a better grasp of the context through which the reported perceptions and responses are formed.

i. Gender of Respondent

Figure 1.0 gives the gender distribution of the respondents. The review shows that most of the respondents were women (53%) as compared to 47% males. This finding indicates that the sample of the survey represents a little more of female respondents as compared to male respondents.

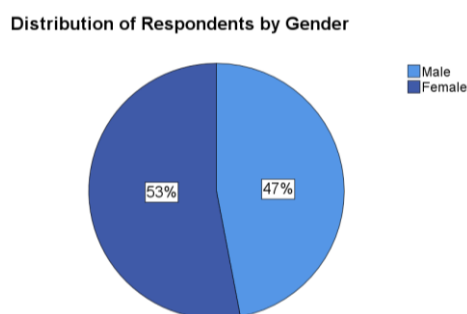


Figure 1.0: Distribution of Respondent by Gender

The predominant gender type of the survey sample was female respondents as presented in Figure 1.0.

ii. Distribution Age of Respondents

Figure 2.0 shows age distribution of the respondents. The number of respondents for the age between 20-30 years old was the largest number of respondents which was 67% of the total sample. This was then followed by respondents aged 31-40 years old at 21%, 41-50 years old at 8% and 51-60 years old at 4%. This finding shows that the largest number of respondents were from the younger group, especially participants who belonged to the age range of 20s to 30s, therefore indicating that the research was very much attended by younger participants in the research.

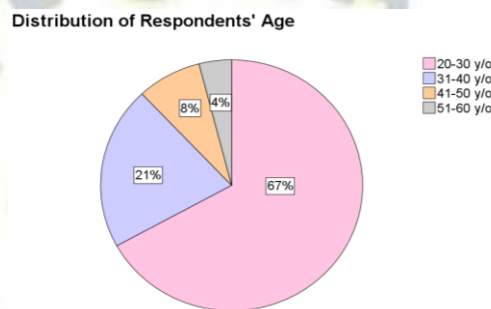


Figure2.0: Distribution of Respondents' Age

iii. The Distribution of Respondents by Background

Figure 3.0 reflects the background of the respondents. The biggest percentage of the sample that defined the specific group of people was tourists at 42%. Local residents and construction consultants were the next groups with 26% and 16% percent respectively. The rest of the participants consisted of government workers (8%), staff working at an adaptive-reuse heritage building (4%), contractors (2%), urban planners, a fringe group of architects and conservationists/heritage experts (1%). The results show that a good percentage of the surveyed participants maintain a close relationship with the tourism industry and the surrounding neighbourhood, thus indicating that these two groups have a powerful impact on the adaptive reuse of heritage buildings in George Town.

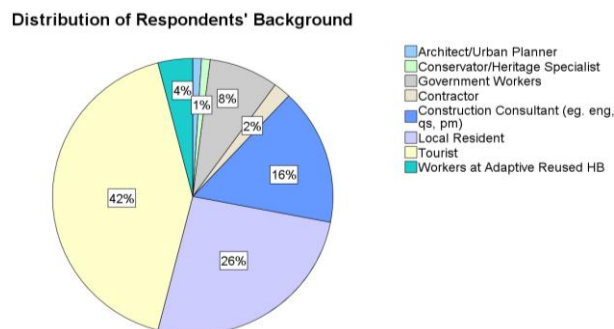


Figure 3.0: Distribution of Respondents by Professional Background

iv. The Visit of Respondents to Adaptively Reused Heritage Buildings

Figure 4.0 indicates the experience of visitation of adaptively reused heritage building by the respondents. A huge majority of the respondents, constituting (79%), reported having attended heritage buildings that are adaptively reuse before. On the other hand, (21%) have not encountered such experiences. Such findings suggest that majorities of the respondents have the prior knowledge of adaptive reuse practices because of the direct exposure to practices which could have impact on their opinions and sensitivities towards heritage conservation practices.

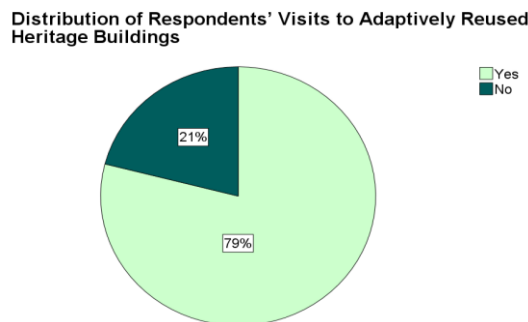


Figure 4.0: Distribution of Respondents' Visit to Adaptively Reused Heritage Building

v.Frequency of Visit by Respondents to The Sites of Heritage

Figure 5.0 shows the number of visits people make to heritage sites. Most of the respondents (57%) gave the answer that they visit heritage sites only in rare moments. Until then (29%) of the respondents visited on an occasional basis, and a lower percentage of (14%) visited on a frequent basis. The findings indicate that, even though the respondents might be having a general awareness and interest about heritage sites, the number of visits is quite low.

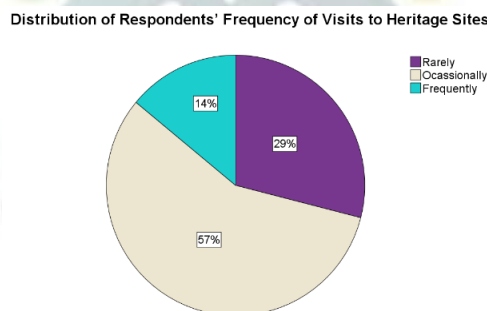


Figure 5.0: Distribution of Respondents' Frequency of Visit to Heritage Sites

Section B: Perception of Adaptive Reuse in George Town

This part gives an analysis of the current practice and perceptions of the respondents regarding adaptive reuse in George Town. To analyze the data, a five-point Likert scale was employed, and the answers were presented in the form of percentages and supported with the help of the descriptive statistics, that is, the mean, median, and mode to unify the data. The main arguments that are reviewed are:

- (i) Awareness of current adaptive reuse practice in George Town

- (iii) Perception on preservation of architectural authenticity through adaptive reuse
- (iv) Effort by local authorities to encourage adaptive reuse
- (v) Perception on the design considering old and old on adaptive reuse
- (vi) Perception on trade-off between heritage value and modern functionality
- (vii) Compliance of current adaptive reuse practice with the UNESCO World Heritage guidelines
- viii) Perception on the adaptive reuse in fulfilling urban needs
- (ix) Perception of the publics towards ongoing adaptive reuse efforts

(i) Awareness on Current Adaptive Reuse Practice in George Town

Table 1: Awareness of Current Adaptive Reuse Practice in George Town

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Median	Mode
No. of Respondents	2	4	29	45	20	3.77	4.00	4

As shown in table 1, the respondents on the average show a positive level of familiarity with adaptive reuse practices in George Town with a mean of 3.77, median and mode of 4.00. The vast majority of the responses in the category of agree implies that the perception of adaptive reuse is quite developed. However, the large percentage of neutral answers suggests that this familiarity might be low or biased with some respondents not being more familiar with the concept. Overall, the findings indicate that the community is moderately aware of the subject, but at the same time need some additional communication and engagement strategies to increase the awareness of the citizens about the adaptive reuse practices in George Town.

(ii) Perception on Preservation of Architectural Authenticity Through Adaptive Reuse

Table 2: Perception on Preservation of Architectural Authenticity

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Median	Mode
No. of Respondents	0	4	9	48	39	4.22	4.00	4

Table 2 shows the rating of the respondents about the maintenance of architectural authenticity through adaptive reuse. The statistics indicate that there is a mostly favorable attitude towards the idea of adaptive reuse as a tool of preserving architectural authenticity. Most of the respondents got it correct or strongly correct that authenticity is upheld, which is supported by a high mean of 4.22 and a median and mode of 4.00. The fact that the marginal

number of neutral and disagreeing responses is substantial and the strong disagreement does not appear implies that there is a high level of confidence in the adaptive reuse practices. Therefore, as a conservation strategy, adaptive reuse in George Town is generally perceived to be carried out in accordance to heritage values and, thus, its effectiveness as a strategy to conserve heritage assets.

(iii) Public Awareness on the Promotion of Adaptive Reuse by Local Authorities

Table 3: Awareness on Promotion of Adaptive Reuse by Local Authorities

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Median	Mode
No. of Respondents	4	8	31	42	15	3.56	4.00	4

Table 3 represents the public perception about the promotion of adaptive reuse by the local authorities. The results reveal that there is a moderate public awareness on such promotion. Although the majority of the respondents confirmed that promotional activities are conducted, the average of 3.56 and a large amount of the neutral results indicate that the promotional activities are not highly perceived. The existing promotional efforts might be limited in scope or performance. On the whole, the findings demonstrate the need to implement stronger and more visible promotion measures to raise the awareness of people about adaptive reuse programs in George Town.

(iv) Perception on the Design Respecting Old and New Elements in Adaptive Reuse

Table 4: Perception on Design Respecting Old and New Elements

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Median	Mode
No. of Respondents	0	0	11	55	34	4.23	4.00	4

Table 4 depicts the perceived design strategies by the respondents that are a compromise between heritage and modern aspects in adaptive reuse projects. The data show a strong and positive perception of strategies that combine historical and modern characteristics with a high mean score of 4.23 which indicates that the five-point Likert scale is high. There was no discord among the respondents indicating that there is wide support of balanced and sensitive design integration. Altogether, the results suggest that adaptive reuse architecture is generally

viewed as an effective way of preserving heritage values and at the same time address the modern requirements.

(v) Perception on Balancing Heritage Value and Contemporary Functionality

Table 5: Perception on Balancing Heritage Value and Functionality

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Median	Mode
No. of Respondents	2	3	8	53	34	4.14	4.00	4

Table 5 provides the information on the views of respondents on the reconciliation of heritage value and modern functionality. The data show that the adaptive reuse is positively perceived as a measure of creating the equilibrium between the heritage aspects and the contemporary functionality. The majority of the respondents agreed or strongly agreed, as indicated by the large mean score of 4.14. The fact that the proportion of neutral and disagreeing responses is rather low indicates that there is an overall belief in the adaptive reuse as the solution that conserves the heritage but allows the contemporary utilization. All in all, the findings highlight the significance of achieving the balance between conservation and functionality in the adaptive reuse projects.

(vi) Compliance of Adaptive Reuse with UNESCO World Heritage Guidelines

Table 6: Awareness on Compliance with UNESCO World Heritage Guidelines

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Median	Mode
No. of Respondents	0	0	29	44	27	3.98	4.00	4

Table 6 demonstrates the perception of the respondents about adherence to UNESCO World Heritage guidelines in adaptive reuse. The results show that the awareness of compliance with the guidelines of the UNESCO World Heritage in adaptive reuse projects is overall positive. Most of the respondents agreed or strongly agreed, which is indicated by the mean score of 3.98. The marked number of neutral answers, however, points to the fact that although the respondents acknowledge the fact that UNESCO guidelines exist, they might not have a comprehensive understanding. Overall, the findings would suggest that there is a positive and moderate understanding of heritage compliance in adaptive reuse practices.

(vii) Perception on Meeting Urban Needs through Adaptive Reuse

Table 7: Perception on Adaptive Reuse Meeting Urban Needs

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Median	Mode
No. of Respondents	0	4	17	53	26	4.01	4.00	4

Table 7 illustrates respondents' perceptions of the ability of adaptive reuse to meet urban needs. The findings show a positive perception of adaptive reuse in meeting contemporary urban needs. Most respondents agreed or strongly agreed, as reflected by the mean score of 4.01. The small proportion of neutral and disagreeing responses indicates general confidence in adaptive reuse as a strategy for urban development. Overall, the results suggest that adaptive reuse is widely recognised for its potential to support current urban demands in a sustainable manner.

(viii) Public Awareness on Ongoing Adaptive Reuse Efforts

Table 8: Awareness on Ongoing Adaptive Reuse Efforts

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Median	Mode
No. of Respondents	4	10	43	30	13	3.38	3.00	3

Table 8 shows the awareness of respondents about the continuing adaptive reuse programs. The findings show the moderate level of awareness at 3.38 mean. The percentage of neutral answers is also large, which indicates that a significant number of respondents are either doubtful or not aware of the existing efforts. Overall, the results show that adaptive reuse projects are less visible to the community, and they should communicate and promote their use better.

FINDINGS

This section will provide results obtained after surveying the data obtained using structured questionnaires to the respondents in George Town, Penang. The results are informed by descriptive statistical analyses of responses, measured using a five-point Likert scale, in terms of public awareness, perceptions and acceptance of adaptive reuse practices against heritage authenticity, functionality, and adherence to UNESCO World Heritage principles. This analysis will serve the purpose of answering the research questions by reviewing the existing adaptive reuse strategies and comparing how people view them in terms of their effectiveness to support sustainable urban development. The findings are detailed in a systematic manner, where the demographic profile of the respondents is first given then the most significant perception based results regarding adaptive reuse and heritage conservation in George Town.

The analysis shows that the level of awareness among the respondents is usually high, as far as adaptive reuse practices in George Town are concerned. Most of the respondents had a mean value of 3.77 that indicated their awareness of adaptive reuse initiatives and a majority of the respondents agreed or strongly agreed. This indicates that adaptive reuse is now an established and apparent technique in the heritage environment of George Town, presumably as a result of its prevalence being applied in heritage shophouses, museums, cafes, and boutique accommodation.

The results show that the people are highly confident with the power of the adaptive reuse to maintain architectural authenticity. The overall top score of all variables (4.22) shows that the respondents consider that adaptive reuse projects in George Town tend to preserve original architectural elements and the heritage character. This demonstrates good conservation-sensitive design solutions which preserve historical aspects but allow the reuse of new purposes, which strengthen the concept of adaptive reuse as a good heritage preservation solution.

Strong agreement was made by the respondents regarding the fact that adaptive reuse projects in George Town have effectively incorporated the old and new design features. Having an average of 4.23, this conclusion indicates that society is in support of current interventions that do not cover heritage fabric but rather enhance it. The finding implies that adaptive reuse projects are considered to have visual harmony and functional improvement without interfering with historical identity of the buildings.

The results show that adaptive reuse is generally viewed to be effective in the balancing between heritage conservation and contemporary functionality. The average score is 4.14 which proves that the respondents acknowledge that adaptive reuse is the way to ensure that heritage buildings can be used and be of relevance in a modern city environment. The balance

will sustain the urban development because it will prolong the lifespan of the old buildings as the current social and economic needs will be met.

The overall awareness of compliance with UNESCO world heritage guidelines was shown to be generally positive with the mean score of compliance being 3.98. Whereas most of the respondents found that adaptive reuse concurred with international heritage requirements, there was still a significant number of respondents who were neutral. This implies that although compliance is widely accepted more information about UNESCO standards and the way they are applied may be enhanced by better information dissemination.

The discussion indicates that the adaptive reuse is perceived positively in terms of urban development and revitalisation by respondents. Having an average score of 4.01, adaptive reuse is perceived to serve the urban requirements through fostering tourism, economic activity, and operational reuse of buildings which have not been fully exploited. This observation supports adaptive reuse as one of the main processes that can be used to preserve George Town as a living heritage city but not a frozen conservation area.

However, despite such favorable attitudes, there is a moderate level of awareness of the local authority activities aimed at encouraging the adaptive reuse. The average of 3.56 reveals that some of the respondents are aware of promotional initiatives, but many are neutral or do not know anything about it. This implies that the current communication strategies and incentives might not be conspicuous and effective enough to support the wider participation of the population and the involvement of the stakeholders. The lowest average score was obtained (3.38) in connection with the knowledge of people about active adaptive reuse of the George Town. A large percentage of neutral response means that there is doubt or inexperience with the present projects. This observation indicates that there is a disconnect between the adaptive reuse application and the knowledge of the people which implies that greater outreach, transparency and participation of the community in the heritage conservation efforts.

In general, the results indicate that people are highly in favor of adaptive reuse as a good strategy of heritage conservation and sustainable urban development in George Town. Adaptive reuse is seen by the respondents in big ways in terms of maintaining authenticity, self-respecting the heritage values and satisfying current urban demands. Nevertheless, the lack of awareness, especially the need to current initiatives and the promotion of local authorities, reveals the areas of opportunity to enhance communication, involvement, and policy application to enhance adaptive reuse practice within the UNESCO World Heritage framework.

CONCLUSIONS

This paper examined the adaptive reuse of heritage buildings in George Town, Penang and assessed perceptions and the general awareness on heritage authenticity and functionality and adherence to the guidelines of the UNESCO World Heritage. The findings reveal that there is a substantial level of public support towards adaptive reuse as a viable heritage conservation strategy and sustainable urban development strategy. The general perception of adaptive reuse by the respondents is that it is effective in maintaining the architectural authenticity, blending the elements of old and new designs, and addressing the modern demands of the cities. These positive attitudes emphasize adaptive reuse as a viable approach to the enhancement of the lives of heritage buildings as well as the creation of urban dynamism and local economic life. On the other hand, this paper observes a medium degree of awareness among the population on current adaptive reuse projects and the advertising campaign by the local government, which implies a low awareness and publicity of conservation projects. As a result, it is important to optimize the involvement of stakeholders, the spread of information, and the collaboration of authorities, professionals, and communities. Comprehensively, adaptive reuse is a critical process towards supporting George Town as a living heritage city and in balancing heritage conservation and sustainable city goals.

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