



Anchors of identity: Integrating maritime heritage into Singapore's urban authenticity

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ABSTRACT

Background: Singapore's identity as a global city is deeply intertwined with its maritime history, yet its urban narratives often prioritize land-based development over maritime heritage. This paper explores the integration of Singapore's maritime legacy into the concept of City Authenticity, arguing that maritime heritage sites, such as jetties, harbors, and kelongs, are vital cultural anchors that sustain a more authentic urban identity. **Methods:** Using a mixed-methods approach combining ethnographic observations, interviews, and archival research, the study examines the historical, cultural, and communal values of these spaces. **Findings:** Findings reveal a significant gap between public recognition of maritime heritage and its representation in conservation policies, which are skewed towards urban structures. **Conclusion:** The paper proposes a Maritime Heritage Conservation Framework, merging existing conservation criteria with marine-specific considerations, emphasizing historical significance, communal engagement, and aesthetic integration. The framework also suggests innovative educational tools, including digital exhibits and interactive programs, to reconnect younger generations with Singapore's maritime roots. By aligning these efforts with the broader discourse on City Authenticity, the study underscores the potential of maritime heritage to balance modernization with cultural continuity. Ultimately, the research advocates for a holistic and inclusive approach to urban conservation that values maritime heritage as a cornerstone of Singapore's national and urban identity. **Novelty/Originality of this article:** This study offers a novel perspective on integrating Singapore's maritime heritage into the concept of City Authenticity, proposing a Maritime Heritage Conservation Framework to bridge the gap between urban development and cultural preservation.

KEYWORDS: city authenticity; maritime heritage; national identity; Singapore; urban conservation.

1. Introduction

Singapore's transformation from a modest fishing village to a bustling global city has long been celebrated as a triumph of modernization. However, this evolution has often overshadowed its maritime roots, an integral part of the nation's identity. While Singapore is renowned for its cutting-edge urban architecture and economic prowess, its cultural connection to the sea remains an underexplored aspect of its identity. Maritime heritage sites such as jetties, harbors, and kelongs hold rich historical and cultural significance. Yet, these spaces are often excluded from conservation priorities, which focus predominantly on land-based monuments and urban landmarks. This disconnection raises critical questions about how maritime heritage can be preserved and integrated into the urban narratives of a rapidly modernizing city.

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Urban heritage conservation in Singapore has evolved from slum clearance to preserving historic districts, balancing authenticity with modern development (Kong & Yeoh, 1994; Yuen, 2006). The integration of conservation with urban planning allows for adaptive reuse of historic buildings and revitalization of districts, though this may impact cultural significance (Lih, 2005). Authenticity in heritage tourism is multifaceted, involving object-based and existential aspects that influence visitor satisfaction (Lee et al., 2016) (Katahenggam, 2020). The commodification of heritage for tourism can benefit both tourists and locals, challenging the notion that it always leads to inauthenticity (Chang, 1997). Urban conservation now aims to create enjoyable urban experiences with historical identity rather than merely preserving authentic history (Martokusumo, 2016). This shift reflects a broader evolution in urban conservation theory and practice, emphasizing the importance of sense of place and livability in addition to historical accuracy (Ouf, 2001).

The concept of City Authenticity offers a valuable framework for addressing this gap. In urban studies, authenticity reflects the unique cultural, historical, and social elements that make a city distinct (Ashworth, 2014) (Zukin, 2009). Maritime heritage, as a tangible and intangible cultural asset, provides a vital link between Singapore's past and its evolving urban identity. Anchoring conservation efforts in maritime spaces can strengthen Singapore's narrative as an island nation while promoting a more inclusive understanding of heritage that goes beyond land-centric approaches. By integrating maritime heritage into the broader framework of City Authenticity, Singapore has the opportunity to redefine its identity as not just a modern metropolis but also a city deeply rooted in its maritime legacy.

This paper explores the role of maritime heritage in shaping Singapore's urban authenticity. Through a mixed-methods approach incorporating ethnographic observations, interviews, and archival research, it examines the cultural, historical, and communal significance of maritime spaces in Singapore. It also evaluates the gaps in existing conservation frameworks and proposes a Maritime Heritage Conservation Framework. This framework aims to bridge the divide between modernization and heritage preservation, ensuring that Singapore's maritime legacy remains a vibrant part of its urban fabric. The findings of this study underscore the importance of reimagining conservation practices to include neglected maritime spaces, thereby fostering a more authentic urban identity for future generations.

2. Methods

This research employs a mixed-methods approach to investigate the integration of Singapore's maritime heritage into its urban conservation narratives, with a focus on enhancing City Authenticity. The methodology combines qualitative and quantitative techniques, including ethnographic observations, interviews, and archival research. By employing multiple frameworks and data collection tools, the study seeks to identify gaps in existing conservation efforts and propose a comprehensive framework for maritime heritage conservation. The study includes (1) Ethnographic Frameworks to systematically analyze the cultural and communal significance of maritime spaces, (2) Spradley's Nine Dimensions, which was used to examine the physical spaces, actors, activities, objects, and interactions observed in maritime heritage sites such as Clifford Pier, Sembawang Jetty, and Keppel Harbour, allowing a detailed exploration of how these spaces function socially and historically, (3) AEIOU Framework, which focused on the interactions and environmental traits of maritime spaces, highlighting the relationships between users, their activities, and the surrounding maritime environment, and (4) POSTA Framework, which guided observations to understand the situational context of maritime spaces, especially how they influence user behavior and engagement.

2.1 Data collection and data analysis

Observations were conducted at key maritime heritage sites to document their physical condition, user interactions, and overall usage patterns. Observation sessions were

scheduled across weekdays and weekends to capture variations in activity levels. Semi-structured interviews with local stakeholders, including residents, policymakers, and conservation experts, were conducted to gather insights on the cultural and historical value of maritime spaces. Historical maps, policy documents, and literature were reviewed as part of archival research to trace the evolution of Singapore's maritime spaces and assess their representation in urban conservation efforts. The collected data was coded and analyzed using a thematic approach to identify patterns and themes. The findings were mapped against existing conservation frameworks, such as the Six Criteria for Conservation, to highlight gaps and propose enhancements tailored to maritime heritage.

2.2 Analytical tools: the ishikawa diagram

The Ishikawa diagram, also known as the cause-and-effect or fishbone diagram, is a versatile quality management tool used across various industries. It aids in identifying potential causes of problems and organizing relevant information (Wong, 2011; Bilsel & Lin, 2012). The diagram has been applied in diverse fields, including medical case analysis (Wong, 2011), manufacturing process improvement (Hermogenes et al., 2020), and project management (Gwiazda, 2006). Researchers have proposed modifications to enhance its effectiveness, such as integrating capture-recapture analysis for estimating the number of causes (Bilsel & Lin, 2012) and combining it with stratification methods (Gwiazda, 2006).

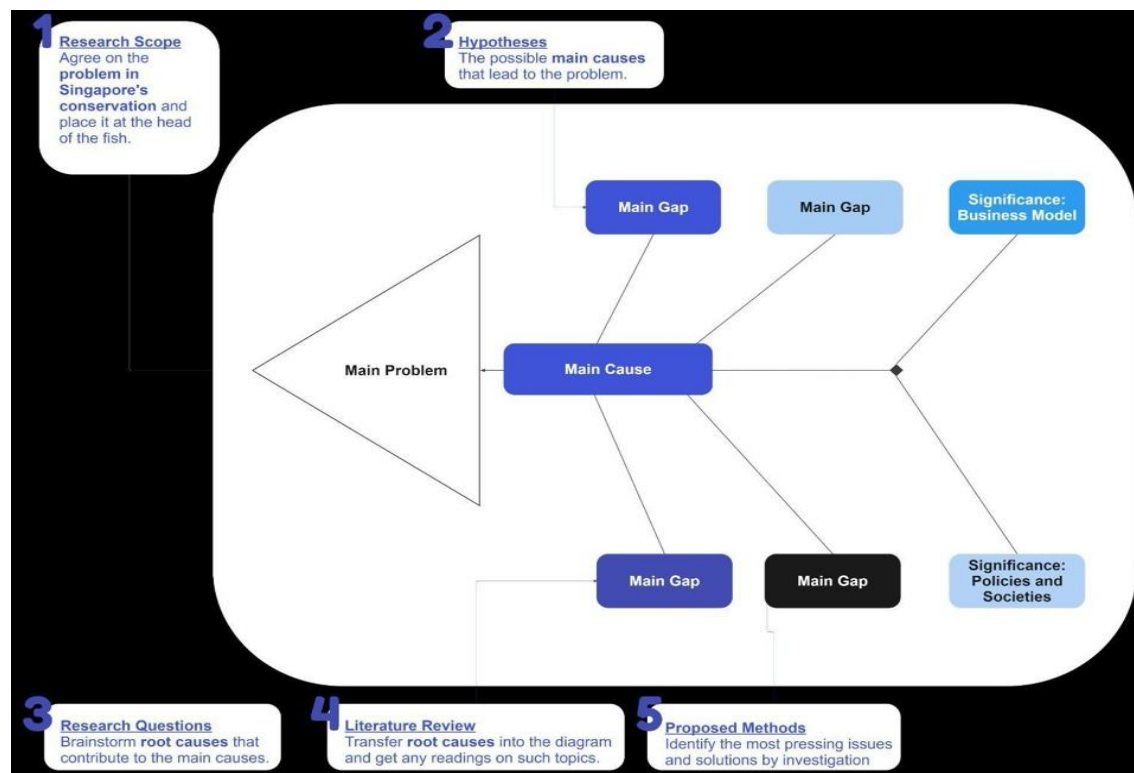


Fig. 1. The Ishikawa Diagram

An Ishikawa (fishbone) diagram was developed to visualize the causes behind the erosion of maritime heritage in Singapore (Fig. 1). This diagram highlights contributing factors such as policy gaps, generational disengagement, and the prioritization of urban development over maritime spaces. By organizing these factors, the diagram provides a structured framework for addressing the root causes of conservation challenges.

Fig. 1 above, depicts an Ishikawa (fishbone) diagram used to analyze the primary challenges in Singapore's maritime heritage conservation. At the head of the fish is the main problem, representing the overarching issue of insufficient integration of maritime heritage into conservation and urban planning. The diagram breaks down this central problem into main causes and gaps, which are linked to broader contextual factors such as business

models and societal policies. The process follows a systematic approach, beginning with the research scope (Step 1), where the problem is defined and framed. Next, hypotheses (Step 2) are proposed to identify the possible root causes leading to the main problem. These are further refined into research questions (Step 3), which seek to explore and validate the identified gaps in conservation practices. Through literature review (Step 4), root causes are examined in depth, enabling the integration of evidence and insights into the diagram. Finally, the proposed methods (Step 5) are designed to investigate these issues, offering actionable solutions to address the most pressing gaps and challenges. The diagram visually organizes the relationship between the main causes and their broader significance, emphasizing two key contextual domains: business models and policies and societies. These domains highlight the economic and regulatory influences that shape maritime conservation efforts, underscoring the need for a multi-faceted approach to addressing the problem.

3. Results and Discussion

Singapore's urban planning has skillfully intertwined its maritime heritage into the city's cultural identity, enriching its historical narrative while shaping its modern urban landscape. This integration is evident in the transformation of waterfront areas, the preservation of historical narratives, and the incorporation of public art that celebrates Singapore's maritime past. These efforts not only honor the city's rich history as a port city but also enhance its appeal as a cultural tourism destination and contribute to urban renewal strategies.

The development of waterfront spaces like the Singapore River and Kallang Basin exemplifies how urban renewal projects have revitalized neglected areas into vibrant hubs of economic and recreational activity. These efforts have reclaimed functionality, improved public access, and reconnected these spaces to local culture, thereby commemorating Singapore's maritime history while addressing contemporary urban needs (Chang & Huang, 2011). The adaptive reuse of port-related building stock, such as the transformation of old warehouses and piers, further illustrates the city's commitment to preserving its historical fabric while supporting modern urban functions. This approach maintains the continuity of cultural and economic networks, ensuring that heritage and development coexist harmoniously (Belle, 2012).

The Singapore River precinct has also become a focal point for cultural tourism, leveraging public art installations to highlight the nation's achievements in water resource management. These installations not only enhance Singapore's global reputation but also foster a deeper sense of cultural identity by blending art with the nation's unique maritime heritage (Yuan, 2024).

Another important dimension of Singapore's maritime history lies in the narratives of the Orang Laut, the indigenous sea nomads who once thrived in the region. Their sensory experiences and cultural practices provide valuable insights into the interplay between sea and land, contributing to Singapore's broader discourse on identity and community (Lupo, 2022). These stories enrich Singapore's historical narratives, offering a more inclusive perspective on its maritime heritage. However, while Singapore has made significant strides in integrating its maritime heritage into urban planning, debates persist about the balance between modernization and historical preservation. The rapid pace of urban development poses the risk of overshadowing traditional cultural elements. This challenge calls for a careful and deliberate approach to ensure that Singapore's rich maritime history continues to be celebrated and preserved, even as the city transforms into a global metropolis.

The results of this study offer a comprehensive understanding of Singapore's maritime heritage within the context of conservation and City Authenticity. By combining findings from literature and fieldwork, this section highlights the critical role of maritime spaces in shaping urban and national identity. Maritime heritage, often overlooked in favor of urban-centric development, represents a vital cultural and historical connection to Singapore's roots as an island nation.

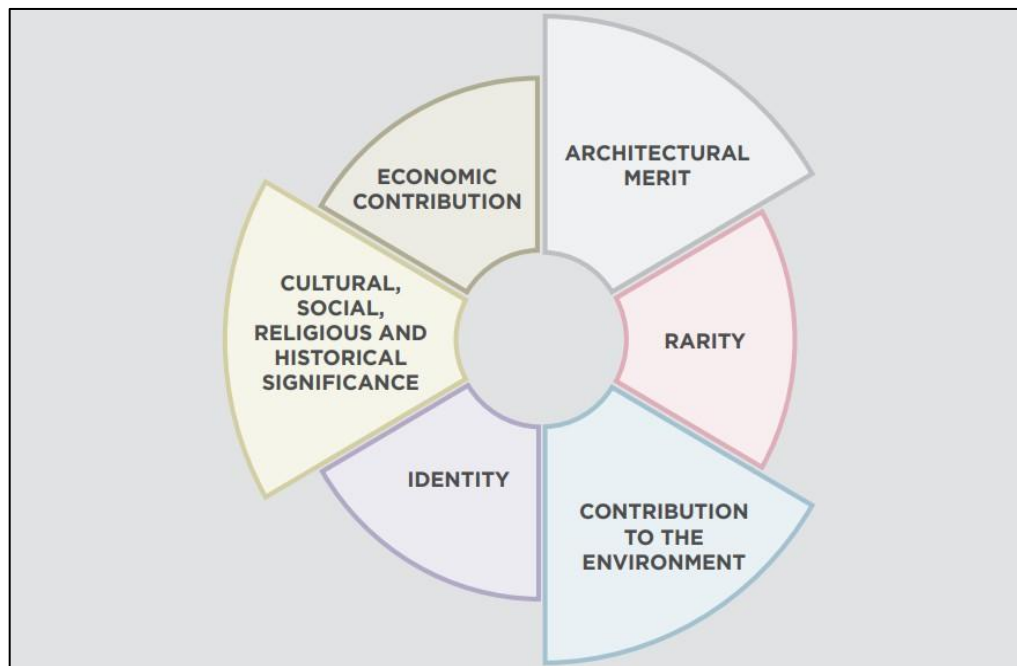


Fig. 2. The six criteria for conservation
(Guo, 2016)

Fig. 2 illustrates the Six Criteria for Conservation, which serve as a foundational framework for evaluating heritage sites in Singapore. These criteria include architectural, historical, social, cultural, economic, and aesthetic values, which are used to assess the significance of built heritage. However, this framework has been primarily applied to land-based urban structures, often overlooking maritime spaces like jetties, harbors, and kelongs. The visual representation highlights the structured approach used to determine the heritage value of urban spaces, emphasizing a comprehensive evaluation process that ensures conservation decisions are both systematic and justifiable.

Despite the robustness of this framework, the findings in this study reveal a significant gap in its application to maritime heritage. While the Six Criteria provide a strong foundation for land-based conservation, their limited consideration of marine-specific elements—such as ecological value, coastal resilience, and intangible cultural significance—creates a disconnect in the conservation of maritime spaces. For example, sites like Clifford Pier or kelongs embody not just historical and aesthetic values but also communal and ecological roles that are underrepresented in current frameworks. This shortcoming underscores the need for an expanded, marine-specific adaptation of the Six Criteria that addresses the unique characteristics and challenges of maritime heritage conservation.

The discussion seeks to bridge the theoretical insights from the literature with empirical observations to address key research questions. While existing scholarship underscores the significance of maritime heritage in fostering cultural continuity, it also reveals critical gaps in policies and public engagement. Field observations and interviews corroborate these findings, exposing the limited visibility and recognition of maritime spaces in both conservation efforts and urban narratives.

This section unfolds in thematic layers, beginning with the importance of maritime heritage to Singapore's identity, followed by an examination of the challenges in its conservation, and concluding with its potential to enhance City Authenticity. By synthesizing these perspectives, the discussion underscores the urgency of integrating maritime heritage into Singapore's urban conservation frameworks. This integration is vital not only for preserving the past but also for ensuring a balanced and authentic future urban narrative.

3.1 *The role of maritime heritage in Singapore's identity*

The preservation of maritime heritage sites in Singapore plays a pivotal role in shaping the nation's cultural identity by linking its historical maritime activities with contemporary narratives. These efforts go beyond safeguarding physical artifacts, serving to enrich Singapore's cultural landscape and deepen the public's understanding of its historical interactions and trade routes. Through integration into educational initiatives and community activities, maritime heritage becomes a dynamic contributor to cultural identity formation, connecting past and present.

Maritime archaeology in Singapore has uncovered critical historical artifacts, such as the shipwrecks of the *Binh Thuan* and *Wanli*, which provide a glimpse into the region's seventeenth- and eighteenth-century history. These findings illuminate Singapore's historical role in global trade networks, revealing intricate connections with other cultures and regions (Flecker & Sim, 2021). By incorporating these discoveries into school curricula, students gain a greater appreciation for the nation's seafaring past and its influence on modern Singapore. Educational programs tied to maritime archaeology not only foster historical awareness but also create a sense of identity rooted in Singapore's long-standing maritime connections (Flecker & Sim, 2021).

Community engagement further strengthens the preservation of maritime heritage by encouraging public participation in cultural heritage activities. Initiatives such as walking tours in historically significant areas like Queenstown and Geylang emphasize local involvement in heritage preservation, fostering a bottom-up approach to nation-building (Nguyen, 2022). Digital tools have also become invaluable in safeguarding intangible cultural heritage, such as the preservation of *Kubor Kassim*. These tools act as "memory insurance," ensuring that cultural narratives are not lost to urban development pressures (Konstantopoulos, 2023).

Singapore's approach to heritage management reflects a balance between centralized government oversight and grassroots involvement, creating a flexible system for conservation. This decentralized-centralized model enables effective preservation efforts while promoting public engagement (Qian, 2024). For instance, the adaptive reuse of sites like the townhouse at 141 Neil Road into heritage conservation laboratories showcases how Singapore integrates social, cultural, and technological dimensions into its dynamic approach to conservation (Wei et al., 2024).

Despite the successes in preserving maritime heritage, Singapore faces significant challenges, including urbanization and space constraints. These pressures necessitate innovative conservation strategies, such as digital preservation, to balance development with heritage conservation. By integrating traditional practices with modern technology, Singapore ensures that its maritime heritage remains an enduring component of its cultural identity, connecting future generations to the nation's seafaring legacy.

Maritime heritage plays a critical role in shaping Singapore's identity, yet its significance is often underrepresented in conservation and urban development narratives. Scholars such as Kong (2011) and Lee et al. (2016) emphasize the importance of heritage as a foundation for national identity (Kong, 2011; Lee et al., 2016), serving as a repository of cultural memory and a tool for fostering a shared sense of belonging. In Singapore's case, its history as a maritime hub—marked by harbors, jetties, and *kelongs*—has profoundly influenced its economic and cultural development.

Fig. 3, depicting the 1502 Cantino Chart, serves as a visual representation of historical maritime trade routes and their significance in shaping regional interactions and cultural exchanges. This map illustrates Singapore's strategic position as a key node within global trade networks during the early modern period, highlighting its historical role as a maritime hub long before its development into a modern city-state.

Within the context of the discussion, Fig. 3, underscores the foundational importance of Singapore's maritime heritage in shaping its national identity and economic growth. As the study examines challenges in maritime heritage conservation, this historical perspective provides a crucial reminder of the deep cultural and economic connections tied to maritime

activities. By acknowledging these historical roots, conservation efforts can ensure that maritime heritage sites are not just preserved as static relics but are actively integrated into urban narratives, reinforcing Singapore’s identity as an island nation with a rich maritime legacy. However, conservation efforts have historically focused on land-based monuments and urban structures, sidelining maritime spaces (Ashworth, 2014). This land-centric focus reflects broader global trends, where urban heritage is often prioritized for its aesthetic appeal and potential to drive tourism (Zukin, 2009). Maritime heritage, in contrast, is perceived as utilitarian and less glamorous, which limits its inclusion in policies and public discourse.

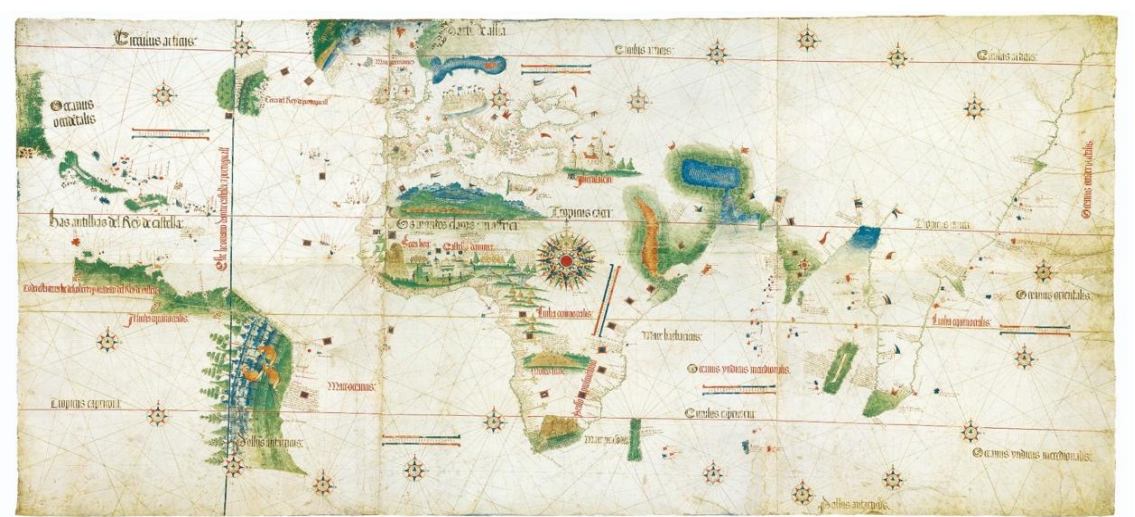


Figure. 3. Cantino Chart from 1502
(*Early Maps of Singapore*, n.d.)

Field observations and interviews reveal a similar undervaluation of maritime heritage among Singaporeans. Sites like Clifford Pier and Sembawang Jetty, while acknowledged as historically significant, are largely viewed through a utilitarian or recreational lens rather than as cultural landmarks. Many respondents associated these spaces with activities such as fishing, sightseeing, or leisure rather than recognizing their historical and cultural contributions to Singapore’s development as a maritime hub. The generational disconnect further complicates the situation. Younger Singaporeans, in particular, displayed limited awareness of the historical significance of maritime sites. Instead, their understanding of heritage is often framed by iconic inland landmarks such as shophouses and urban monuments, which dominate educational curricula and public outreach programs. This lack of engagement poses a threat to the preservation of maritime heritage as a meaningful component of Singapore’s identity.

Table 1. Maritime heritage sites in singapore and their historical significance

Site Name	Type	Historical Role	Current Use	Challenges
Clifford Pier	Jetty/Pier	Gateway for immigrants and goods	High-end dining space	Loss of historical focus
Sembawang Jetty	Jetty	Fishing, community bonding	Recreational space	Physical deterioration
Kubor Kassim	Burial site	Indigenous cultural heritage site	Limited public access	Urban development pressures
Kelongs (Pulau Ubin)	Offshore platform	Traditional fishing practices and trade	Declining due to privatization	Loss of accessibility and use

Table 1, highlights key maritime heritage sites in Singapore, their historical roles, current uses, and associated challenges. Sites such as Clifford Pier and Sembawang Jetty, which once served as gateways for trade and community activities, have been repurposed primarily for recreational or commercial purposes. While adaptive reuse has brought new life to these spaces, it often risks erasing their historical narratives. The decline of *kelongs*, traditional offshore fishing platforms, further illustrates how privatization and urban pressures threaten Singapore's maritime heritage. Addressing these challenges requires a balanced approach that preserves the historical and cultural significance of maritime spaces while integrating them into contemporary urban uses.

The findings underscore the importance of repositioning maritime heritage as a cornerstone of Singapore's identity. Maritime spaces, such as *kelongs* and jetties, serve as tangible reminders of the nation's past as a fishing village and *entrepôt*. These spaces carry emotional and symbolic significance, functioning as "anchors of memory" that connect Singaporeans to their historical roots (Harvey, 2001). To bridge the gap between public perception and the historical importance of maritime heritage, there is a need to shift conservation efforts beyond mere preservation of physical structures. Public education and engagement initiatives are critical to fostering a deeper appreciation for these spaces. Integrating maritime heritage into urban narratives can enhance Singapore's identity as a city-state that balances modernity with cultural continuity, reinforcing its distinctiveness on the global stage. By recognizing the integral role of maritime heritage in national and urban identity, conservation policies can evolve to include these overlooked spaces. This alignment between heritage and identity is essential for fostering a sense of City Authenticity, where both past and present coexist to shape a more inclusive urban future.

3.2 Challenges in maritime heritage conservation

Maritime heritage conservation faces significant challenges due to climate change, development, and lack of comprehensive management strategies. Coastal and underwater cultural resources are at risk from rising sea levels, erosion, and human activities (Daly et al., 2022; Flatman, 2009). The value of maritime cultural heritage is often underestimated, leading to resource loss and missed socioeconomic opportunities (Claesson, 2011). Integrating maritime heritage into Maritime Spatial Planning frameworks could help balance conservation with sustainable development (Noon, 2020). Community involvement is crucial for documenting and preserving endangered maritime heritage (Shotton & Prizeman, 2023). Museums play a vital role in showcasing artifacts and educating the public (Mustapa, 2005). Maritime heritage contributes to identity formation and community building (Andrews, 2012). Efforts to improve maritime preservation include the National Maritime Initiative, which aims to create inventories, establish preservation standards, and increase representation in national heritage programs (Delgado, 1991).

The conservation of maritime heritage in Singapore faces significant challenges, rooted in policy gaps, urban development priorities, and a lack of public engagement. These challenges are compounded by the overwhelming focus on land-based heritage, which tends to prioritize iconic architectural landmarks and urban monuments over the preservation of maritime spaces. Existing conservation policies, such as Singapore's Six Criteria for Conservation, are heavily skewed towards buildings and urban typologies, leaving maritime spaces like jetties, harbors, and *kelongs* outside the scope of heritage preservation efforts. Scholars such as Kong (2011) and Ashworth (2012) argue that this bias reflects global trends, where conservation frameworks often align with economic imperatives and tourism potential, rather than addressing intangible cultural and communal values associated with maritime spaces (Kong, 2011; Ashworth, 2014).

Field observations and interviews highlight the disconnection between conservation policies and public engagement in maritime heritage. Maritime spaces, though historically significant, are not widely recognized by the general public as integral parts of Singapore's heritage. For instance, Clifford Pier is viewed primarily as a modernized commercial and recreational site, rather than a cultural landmark tied to Singapore's maritime past.

Similarly, kelongs, which once symbolized the island's fishing traditions, are now increasingly privatized or abandoned. This disconnect has created a generational gap, where younger Singaporeans, in particular, struggle to relate to maritime spaces that are either inaccessible or perceived as irrelevant to contemporary urban life.

Table 2. Public perception of maritime heritage (survey results)

Question	Most Common Responses	Percentage
Have you visited maritime heritage sites in Singapore?	Yes	35%
What do you associate with maritime heritage?	Fishing, waterfronts, leisure spaces	60%
Are you aware of the historical significance of these sites?	No	72%
What would make these sites more attractive?	Interactive exhibits, educational programs	65%
Should maritime heritage be integrated into urban planning?	Yes	80%

Table 2 above, presents survey results on public perceptions of maritime heritage in Singapore, revealing a significant gap in awareness and engagement. While 35% of respondents have visited maritime heritage sites, 72% were unaware of their historical significance, indicating a need for greater public education. The findings also show strong support (80%) for integrating maritime heritage into urban planning, with respondents suggesting interactive exhibits and educational programs to make these spaces more attractive. These results emphasize the importance of enhancing public engagement and awareness to ensure maritime heritage is valued as a critical part of Singapore's cultural identity.

Urban development priorities present another major challenge to maritime heritage conservation. Singapore's rapid modernization has placed immense pressure on land and coastal areas, with many maritime spaces being repurposed or redeveloped to accommodate commercial and infrastructural needs. The transformation of Clifford Pier into a high-end dining and leisure venue exemplifies this tension. While adaptive reuse can be a valuable conservation strategy, it often prioritizes commercial viability over cultural authenticity. In some cases, these developments have erased the historical narratives associated with maritime spaces, further diminishing their value in the public eye.

Environmental factors, such as rising sea levels and coastal erosion, also pose threats to the preservation of maritime heritage. Many structures, such as old jetties and piers, are vulnerable to physical deterioration due to exposure to harsh marine conditions. Combined with a lack of dedicated maintenance efforts, these environmental challenges contribute to the gradual loss of Singapore's maritime heritage. Additionally, the privatization of certain maritime spaces has limited public access, reducing opportunities for community engagement and education about their historical significance.

Table 3. Conservation challenges of maritime heritage sites

Challenge	Description	Examples
Policy Gaps	Lack of explicit inclusion of maritime spaces in conservation frameworks	No specific policies for jetties
Urban Development Pressures	Redevelopment of maritime areas for commercial or infrastructural needs	Clifford Pier
Generational Disengagement	Younger generations unaware of maritime heritage significance	Limited school programs
Physical Deterioration	Structural issues due to aging and exposure to environmental conditions	Sembawang Jetty
Environmental Factors	Rising sea levels, coastal erosion impacting maritime structures	Kelongs

Table 3, outlines the key challenges facing the conservation of maritime heritage in Singapore, ranging from policy gaps to environmental threats. The lack of explicit policies addressing maritime spaces has left sites like jetties and kelongs vulnerable to neglect, while urban development pressures prioritize commercial and infrastructural needs over cultural preservation. Generational disengagement and limited educational initiatives further exacerbate the issue, as younger Singaporeans remain unaware of the historical significance of these spaces. Environmental factors, such as rising sea levels and coastal erosion, compound these challenges, emphasizing the need for a comprehensive and adaptive conservation strategy.

Addressing these challenges requires a fundamental shift in how maritime heritage is perceived and valued. Conservation policies must move beyond physical preservation to include intangible cultural dimensions and communal engagement. Public outreach and educational initiatives are essential for raising awareness about the importance of maritime heritage, particularly among younger generations. Furthermore, a more balanced approach to urban development is needed, one that integrates maritime spaces into the city's broader conservation and urban planning strategies. By tackling these challenges, Singapore can ensure that its maritime heritage remains a vibrant and meaningful part of its national and urban identity.

3.3 Maritime heritage and city authenticity

The concept of City Authenticity revolves around the preservation of cultural, historical, and social elements that define the unique identity of a city. Maritime heritage, as a cornerstone of Singapore's historical narrative, has the potential to play a pivotal role in fostering a deeper sense of authenticity in the urban landscape. Singapore's development from a fishing village into a global city is intrinsically linked to its maritime roots. However, current urban narratives tend to emphasize modern architecture and economic achievements, sidelining maritime heritage as a less glamorous or utilitarian aspect of the city's identity. This imbalance undermines efforts to present Singapore as an authentic city that reflects its multifaceted history.

Findings from this research reveal a gap between the historical and cultural significance of maritime spaces and their integration into Singapore's urban identity. While sites like Clifford Pier and Sembawang Jetty hold historical value, their role in contemporary urban narratives is minimal. These spaces are often framed as functional or recreational areas, rather than as cultural landmarks that contribute to the city's unique story. This disconnect stems, in part, from the prioritization of land-based conservation efforts and the lack of educational and engagement programs that highlight the importance of maritime heritage. Without this cultural grounding, the narrative of Singapore risks becoming homogenized, focused solely on its modern, land-based achievements.

Table 4. Maritime heritage and public engagement strategies

Engagement Strategy	Target Audience	Examples	Potential Impact
Digital Storytelling and Virtual Tours	General public	Interactive digital exhibits	Increased awareness
School Curriculum on Maritime Heritage	Students	Lessons on historical trade routes	Stronger generational connection
Heritage Walks and Guided Tours	Local communities	Queenstown, Geylang walking tours	Greater community involvement
Adaptive Reuse of Historical Structures	Tourists and locals	Clifford Pier as cultural space	Balancing heritage and tourism
Gamified Mobile Applications	Youth	Maritime-themed educational games	Increased interest in heritage

Table 4 above, outlines various strategies to enhance public engagement with maritime heritage, ranging from digital storytelling and virtual tours to gamified mobile applications

and adaptive reuse of historical structures. These initiatives aim to bridge the gap between public awareness and appreciation, particularly among younger generations. Heritage walks and guided tours in local communities, coupled with the integration of maritime heritage into school curricula, can foster a stronger connection to Singapore’s seafaring past while promoting a sense of ownership among citizens. Adaptive reuse projects, such as transforming Clifford Pier into a cultural space, demonstrate the potential to balance heritage preservation with modern urban needs.

Fig 4 bellow, which depicts the Raffles Town Plan, reinforces the historical interplay between urban planning and maritime spaces in shaping Singapore’s identity. By integrating the engagement strategies highlighted in Table 4 with the broader urban planning narrative shown in Figure 4, Singapore can reimagine its maritime heritage as a dynamic and accessible component of its cultural and urban fabric, ensuring its continued relevance in a rapidly modernizing city.



Fig. 4. Raffles Town Plan
(*Early Maps of Singapore*, n.d.).

Globally, cities such as Venice and Amsterdam have successfully integrated maritime heritage into their urban narratives, demonstrating how water-based histories can enrich City Authenticity. These cities balance modernization with conservation, using canals, docks, and waterfront spaces as dynamic cultural assets that attract both locals and visitors. Similarly, Singapore has the opportunity to position its maritime heritage as a defining feature of its urban identity. By reimagining maritime spaces as cultural and educational hubs, these sites can serve as living testimonies to Singapore’s evolution and uniqueness. For instance, incorporating digital storytelling tools, interactive exhibits, and educational tours can help bridge the gap between historical significance and public relevance.

Table 5. Comparison of global maritime heritage integration models

City	Heritage Focus	Key Strategies	Lessons for Singapore
Venice, Italy	Canals, trade networks	Adaptive reuse, extensive public tours	Linking water history with tourism
Amsterdam, Netherlands	Maritime trade, shipbuilding	Interactive museums, urban canals	Integrating heritage into urban life
Hong Kong, China	Coastal trade, fishing villages	Conservation policies, eco-tourism	Policies on cultural preservation
Singapore	Jetties, harbors, kelongs	Emerging: digital tools, adaptive reuse	Room for greater public engagement

Table 5 above, compares global approaches to integrating maritime heritage into urban narratives, highlighting best practices from cities like Venice and Amsterdam. These examples demonstrate how adaptive reuse, interactive museums, and eco-tourism can preserve maritime spaces while engaging local communities and visitors. For Singapore, these lessons emphasize the potential of strategies such as digital tools and public engagement programs to better integrate maritime heritage into its urban fabric.

This discussion aligns with the broader argument that maritime heritage can serve as a counterbalance to Singapore's hyper-modern urban identity. By learning from these global models, Singapore has the opportunity to redefine its maritime spaces as dynamic cultural and educational hubs, fostering City Authenticity while addressing the challenges of modernization and conservation.

Furthermore, maritime heritage aligns closely with the principles of City Authenticity by offering a tangible link between the past and present. Authenticity in urban planning is not solely about preserving physical structures but also about maintaining the intangible cultural elements that give a city its character. Maritime spaces like *kelongs* and harbors embody this connection, representing the interplay of natural and human histories that shaped Singapore's identity. Reintegrating these spaces into the urban narrative not only enhances cultural continuity but also strengthens the emotional connection between Singaporeans and their city.

To achieve this, it is crucial to align conservation strategies with the broader objectives of urban authenticity. Maritime heritage can be positioned as a counterbalance to the hyper-modern aspects of Singapore's identity, fostering a more inclusive urban narrative that values both tradition and innovation. This approach requires collaboration between policymakers, conservationists, and communities to ensure that maritime spaces are preserved not only as historical artifacts but as active contributors to the city's cultural landscape. By embracing its maritime heritage, Singapore can redefine itself as a city that values its origins while confidently navigating its future, achieving a richer and more authentic urban identity.

3.4 Towards a maritime heritage conservation framework

The findings from this research highlight the urgent need for a dedicated framework to conserve Singapore's maritime heritage, one that integrates cultural, communal, and ecological values into the broader urban conservation agenda. Existing frameworks, such as the Six Criteria for Conservation, primarily address the preservation of land-based buildings and monuments, often sidelining the unique characteristics of maritime spaces. To address this gap, a Maritime Heritage Conservation Framework must adopt a holistic approach, combining elements of historical preservation, community engagement, and innovative urban planning to ensure the longevity and relevance of these spaces.

A key component of this proposed framework is the recognition of maritime heritage's historical value as a defining aspect of Singapore's identity. Maritime spaces such as Clifford Pier and *kelongs* are not merely functional relics of the past but are deeply intertwined with the nation's evolution from a fishing village to a global entrepôt. The framework should incorporate marine-specific criteria that emphasize the historical and cultural significance of these spaces. For example, *kelongs* represent a way of life that shaped the livelihoods of early Singaporeans, while harbors and jetties played vital roles in the development of trade and migration networks. By assigning greater historical importance to these sites, policymakers can justify their inclusion in conservation priorities.

Equally critical is the role of public engagement in ensuring the sustainability of maritime heritage. Conservation efforts are most effective when they resonate with the community, fostering a sense of ownership and pride. The proposed framework emphasizes interactive and inclusive approaches to engaging the public. For instance, digital storytelling tools, virtual tours, and gamified heritage experiences can make maritime history more accessible and engaging, particularly for younger generations. Educational programs that integrate maritime heritage into school curricula can further bridge the gap between

historical awareness and public interest. These efforts can help shift public perception of maritime spaces from mere recreational areas to cultural landmarks of national importance.

Another core pillar of the framework is adaptive reuse, which allows maritime spaces to remain functional while preserving their historical and cultural integrity. Clifford Pier's transformation into a dining destination demonstrates the potential of adaptive reuse, but such efforts must balance commercial viability with cultural authenticity. The framework should establish guidelines to ensure that adaptive reuse projects honor the historical narratives of the spaces involved. For instance, integrating interpretive exhibits or public art installations that reflect the maritime history of a site can reinforce its cultural significance even as it evolves to meet modern needs.

Environmental sustainability must also feature prominently in the framework, as many maritime heritage sites face threats from rising sea levels, coastal erosion, and urban encroachment. Conservation strategies must address these vulnerabilities by incorporating resilience measures into the preservation process. For example, jetties and piers could be fortified with sustainable materials, and kelong could be reimagined as eco-tourism hubs that highlight Singapore's maritime biodiversity. By aligning conservation efforts with environmental goals, Singapore can preserve its maritime heritage while addressing broader sustainability challenges.

The Maritime Heritage Conservation Framework ultimately aims to re-establish the relevance of maritime spaces within Singapore's urban identity. By integrating historical, communal, and ecological values, this framework can bridge the divide between heritage and modernization, ensuring that maritime spaces are not only preserved but celebrated as vital components of Singapore's cultural landscape. Through collaborative efforts involving policymakers, conservationists, and the community, this framework can pave the way for a more inclusive and sustainable approach to urban conservation, where maritime heritage plays a central role in shaping Singapore's authentic identity as both a modern metropolis and an island nation deeply rooted in its maritime past.

4. Conclusions

This research has highlighted the critical role of maritime heritage in shaping Singapore's national and urban identity, emphasizing its potential to enhance the concept of City Authenticity. Through a combination of literature review, ethnographic observations, and stakeholder interviews, the study underscores the historical, cultural, and communal significance of maritime spaces such as jetties, kelong, and harbors. Despite their deep-rooted importance, these spaces remain underrepresented in Singapore's conservation efforts, which have traditionally focused on land-based urban landmarks. This oversight risks further eroding the nation's maritime identity in the face of rapid modernization and urbanization.

One of the key findings of this study is the disconnection between public perception and policy priorities. Maritime spaces are often viewed as utilitarian or recreational rather than cultural assets. Younger generations, in particular, lack awareness of the historical significance of these sites, highlighting a pressing need for targeted educational and engagement initiatives. The findings also reveal significant gaps in existing conservation frameworks, which fail to address the unique attributes and vulnerabilities of maritime heritage.

The study's most important contribution is the proposed Maritime Heritage Conservation Framework, which seeks to bridge the divide between heritage and modernity. This framework introduces a holistic approach that combines historical preservation, public engagement, and environmental sustainability. It emphasizes the importance of adaptive reuse, digital tools, and community-driven initiatives to ensure that maritime heritage remains accessible, relevant, and celebrated. By integrating marine-specific criteria into Singapore's conservation policies, this framework offers a path toward more inclusive and meaningful preservation practices.

This research demonstrates that conserving maritime heritage is not merely an act of nostalgia but a strategic effort to reclaim Singapore's identity as an island nation. Maritime spaces are not just remnants of the past but living components of the urban fabric that can anchor Singapore's future identity in a globalized world. By aligning maritime heritage with City Authenticity, Singapore has the opportunity to redefine itself as a city that values its historical roots as much as its modern aspirations, creating a balanced and authentic narrative for generations to come.

While the study is limited by its small sample size and focus on specific maritime sites, it opens avenues for future research. Expanding the scope to include additional maritime spaces and exploring the intersection of conservation and tourism could provide deeper insights into the role of maritime heritage in national development. Ultimately, this research serves as a call to action for policymakers, conservationists, and the public to recognize and protect the invaluable maritime legacy that forms the heart of Singapore's identity.

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