

Industrial Heritage and Local Identity

Comparative Insights from Colomadu and Zhujiadian

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Abstract – This study aims to examine the role of industrial heritage conservation in shaping local identity through a comparative analysis of two industrial sites: Colomadu in Indonesia and Zhujiadian in China. Using a qualitative approach, data were collected through archival research, field observations, and stakeholder interviews. The findings reveal that adaptive reuse has contributed to economic growth by attracting tourism and investments while fostering a blend of modernity and tradition. However, commercialization poses challenges to maintaining the authenticity of these heritage sites. In Colomadu, the transformation into a cultural and heritage center reflects regional pride and integration with modern tourism. Meanwhile, Zhujiadian's as a cultural hub has revitalized local economies but raised concerns about preserving historical integrity. This study underscores the importance of a balanced approach to heritage conservation, honoring authenticity while addressing contemporary economic and lifestyle needs.

Keywords: *authenticity, economic impact, heritage conservation, industrial heritage, modernity.*



I. INTRODUCTION

Heritage conservation has long been recognized as essential in preserving cultural identity, historical significance, and communal memory. While much attention has been paid to conserving monumental and religious heritage, preserving industrial heritage such as factories and production sites remains relatively underexplored, particularly in Southeast and East Asia (Smith, 2006; Ashworth, 2011). Industrial heritage sites, which often represent pivotal periods of economic transformation, tell the story of a community's industrial past and contribute to contemporary identity formation, linking the past to the present (Pendlebury, 2015; Xie, 2015).

This study examines how industrial heritage conservation influences local identity through a comparative analysis of two case studies: Colomadu in Indonesia and Zhujiadian in China. The research

investigates the processes and challenges involved in adapting industrial heritage sites for contemporary uses, explores the role of these sites in shaping local identity and fostering community engagement, and identifies best practices for balancing the preservation of historical authenticity with modern economic and lifestyle demands (Timothy & Boyd, 2014).

The Colomadu sugar factory, located in Central Java, Indonesia, was built in 1861 during the Dutch colonial period and became a symbol of Indonesia's early industrialization in the sugar industry. Following its closure in 1998, the site was revitalized and transformed into a cultural and heritage complex, representing a significant shift from its original function. Today, it serves as a reminder of Indonesia's colonial industrial past and a site of cultural engagement, tourism, and economic development (Fajarwati & Wulandari, 2020). Similarly, Zhujiadian, a former brick factory in China's industrial heartland, has undergone significant conservation efforts to preserve its historical structures. Once a key player in China's rapid industrialization, Zhujiadian has been reimagined as a cultural hub, symbolizing the blending of industrial history with modern creative spaces (Chen et al., 2016; Niu et al., 2018).

Despite their different national contexts, both Colomadu and Zhujiadian demonstrate how industrial heritage conservation can contribute to local identity and community belonging while remaining economically viable and relevant to contemporary lifestyles. Recent studies have highlighted the role of adaptive reuse in heritage conservation, focusing on balancing economic demands with historical preservation (Graham & Howard, 2012; Zhang, 2024).

This paper seeks to answer the following research questions: How do heritage conservation efforts at Colomadu and Zhujiadian reflect broader trends in preserving industrial sites? In what ways do these sites influence local identity and foster community engagement?

I. LITERATURE REVIEW

Industrial heritage sites, often remnants of abandoned industrial facilities, are increasingly recognized for their cultural and economic potential. These sites can be transformed into tourist attractions, contributing to local development (Hashimoto & Telfer, 2017; Jones & Munday, 2001). However, managing industrial heritage presents challenges, including balancing conservation with development and addressing competing stakeholder interests (Oevermann & Mieg, 2014). Sustainable management of these sites requires long-term strategic planning and community involvement (Landorf, 2009). The definition and recognition of industrial heritage vary across countries, with some lacking official definitions or legislation for protection (Tipnis & Singh, 2021). Identifying and inventorying industrial heritage sites is crucial for their preservation and potential reuse (Iqbal et al., 2022). Factors influencing the registration of industrial heritage include building characteristics, historical significance, and economic potential (Aydın et al., 2022). Effective management of industrial heritage resources involves careful planning, interpretation, and engagement with various constituencies (Alfrey & Putnam, 2003).

The economic valuation of heritage assets is a complex but crucial process for sustainable cultural tourism and development. Various methods have been employed to assess the value of these non-market goods, including Contingent Valuation, Travel Cost, and Analytic Hierarchy Process (Muryani, 2019; Porter, 2004; McLoughlin et al., 2006). These techniques can capture economic and cultural values, helping policymakers balance preservation with economic benefits (Throsby, 2012; Basu & De, 2021). Studies have shown that cultural heritage significantly influences destination choices and local economies, contributing to tourism and retail dynamics (van Loon, 2014). However, challenges persist in quantifying cultural and social heritage values, particularly in areas with low socioeconomic levels or lack of political will (Demirbag et al., 2021). Despite these difficulties, valuing heritage assets is essential for promoting tourism, local economic development, and preserving cultural identity (Nyawo & Mashau, 2019). Integrating economic valuation into heritage management can lead to more informed decision-making and sustainable preservation strategies.

Industrial heritage tourism offers economic revitalization and cultural preservation opportunities in post-industrial areas. Research highlights the importance of authenticity in visitor experiences and local community perceptions (Guerra et al., 2022; Firth, 2011). Adaptive reuse of industrial sites can create meaningful tourist attractions while preserving heritage value (Alonso et al., 2010; Samadzadehyazdi et al., 2018). Studies emphasize the need to consider tangible and intangible aspects

of heritage sites, including local memories and cultural significance (Chatterjee & Dupré, 2019; Wang et al., 2015). Authenticity in heritage tourism is multifaceted, encompassing both the physical site and visitors' personal experiences (Yi et al., 2017). Awe and authenticity experiences play crucial roles in shaping visitors' perceptions of industrial heritage sites (Yan et al., 2022). Effective interpretation and community involvement are key factors in developing successful industrial heritage tourism destinations that balance conservation, authenticity, and economic benefits (Firth, 2011; Guerra et al., 2022).

Heritage conservation has evolved into a multidisciplinary field that integrates historical preservation with contemporary social, economic, and cultural dynamics. The adaptive reuse of industrial heritage sites has garnered increasing attention due to its potential to balance conservation goals with modern development needs (Timothy & Boyd, 2014). Scholars have emphasized the importance of framing industrial heritage as a physical entity and a cultural and economic resource that contributes to identity formation and local engagement (Loulanski & Loulanski, 2011).

Thematic analysis has emerged as a key method in qualitative research, particularly in studies involving complex, multi-stakeholder perspectives. Braun and Clarke (2006) highlight the flexibility of thematic analysis in identifying patterns across diverse datasets, making it an ideal approach for examining stakeholder narratives in heritage conservation (Braun & Clarke, 2006). The process involves coding data to uncover themes reflecting respondents' shared and contrasting perspectives. This approach ensures that the findings are grounded in the lived experiences of those directly involved in or affected by the conservation process (Searle et al., 2017).

In industrial heritage conservation, themes such as adaptive reuse, community engagement, and economic impact have frequently emerged as focal points in recent studies (Graham et al., 2016; Kee, 2019). Adaptive reuse, for instance, is often cited as a practical strategy for maintaining the relevance of industrial sites by transforming them into spaces that cater to contemporary cultural and economic demands (Davies et al., 2024; S. Yan et al., 2024). Meanwhile, community engagement plays a crucial role in ensuring the sustainability of conservation efforts, as local participation fosters a sense of ownership and strengthens the connection between heritage and identity (Wondirad & Ewnetu, 2019).

This study draws on these theoretical insights to structure its thematic analysis of Colomadu and Zhujiadian. Combining archival research, interviews, and field observations, the research identifies recurring themes that encapsulate the challenges and opportunities inherent in industrial heritage conservation. The findings contribute to a broader understanding of how conservation strategies can balance historical authenticity with economic and social viability, a topic increasingly explored in Southeast and East Asia (Du Cros & McKercher, 2020).

II. METHODOLOGY

A. Data Collection

Data were collected through three primary methods: archival research, field observations, and semi-structured interviews. Archival research involved examining historical records, government documents, and relevant literature used to trace both sites' industrial history and conservation efforts. This was complemented by field observations conducted at Colomadu and Zhujiadian, where detailed notes were taken on architectural features, conservation techniques, and integrating modern functions into heritage spaces (Yin, 2018).

Semi-structured interviews were conducted with key stakeholders, including local historians, conservation experts, government officials, and community members. The interviews explored themes such as the cultural significance of the sites, the challenges of maintaining authenticity, and the impact of conservation on community engagement and economic development. A purposive sampling strategy was employed to ensure that participants represented diverse perspectives, including those directly involved in conservation efforts and members of the local communities (Bryman, 2016).

B. Data Analysis

Thematic analysis was used to process and interpret the data. This approach involved identifying recurring patterns and themes related to heritage conservation and local identity. Data from interviews were transcribed and coded using software to ensure systematic analysis. The themes were cross-referenced with findings from archival research and field observations to strengthen the validity of the

results. Particular attention was paid to the balance between preserving historical authenticity and adapting to modern economic and lifestyle needs, as highlighted in recent studies on heritage conservation (Brown et al., 2020; Suryani, 2024).

C. Rationale for Case Selection

Colomadu and Zhujiadian were selected as case studies due to their significance as industrial heritage sites in Southeast and East Asia. Colomadu represents Indonesia's colonial industrial legacy, having transitioned from a sugar factory to a cultural hub. Zhujiadian, a former brick factory, illustrates China's efforts to blend industrial history with creative cultural spaces. Both sites highlight the potential of adaptive reuse to link industrial heritage with contemporary community identity and economic viability (Kee, 2019; Cudicio & Gardella, 2024).

This methodology provides a comprehensive framework for understanding industrial heritage conservation processes, challenges, and outcomes in distinct cultural and geographic contexts. By integrating multiple data sources and adopting a comparative approach, this study contributes to the broader discourse on sustainable heritage management and adaptive reuse (Rivero Moreno, 2020).

III. RESULTS AND DISCUSSION

The analysis of the collected data provides profound insights into how industrial heritage conservation catalyzes local identity formation in both Colomadu and Zhujiadian. This section synthesizes the findings from archival research, field observations, and stakeholder interviews to discuss the key themes identified in the study. By comparing these two sites, we explore the effectiveness of adaptive reuse strategies, the level of community engagement, and the socioeconomic impacts of conservation efforts. The discussion also delves into the challenges faced during the preservation processes and evaluates the role of governmental policies in facilitating or hindering heritage conservation initiatives.

The qualitative analysis of the interviews conducted with key stakeholders from both Colomadu (Indonesia) and Zhujiadian (China) reveals several important themes related to the conservation of industrial heritage sites. The interviews, involving local historians, conservation experts, government officials, and community members, provided valuable insights into the unique challenges and opportunities in preserving these historical industrial sites. Using thematic analysis, we identified six key themes that encapsulate the main issues and perspectives shared by the respondents. These themes include Heritage as an Identity Marker, Adaptive Reuse, Community Engagement, Conservation Challenges, Government and Policy Support, and Economic Impact.

Table 1 below presents the coding of interview responses, providing a detailed analysis of how various stakeholders perceive the conservation efforts at Colomadu and Zhujiadian. Each respondent contributed distinct perspectives systematically coded to identify overarching themes. These themes offer valuable insights into the processes of preserving and reimagining these industrial heritage sites, highlighting their significance in cultural, economic, and community contexts.

The data presented in Table 1 highlights how each group of stakeholders—local historians, community members, conservation experts, and government officials—approaches the issue of industrial heritage conservation from different yet interconnected perspectives. For instance, Colomadu respondents frequently emphasized the site's importance as an identity marker that links the community to its colonial and industrial past. This theme aligns with the community engagement seen through cultural events and local participation in site activities. Meanwhile, respondents from Zhujiadian often focused on the challenges of adaptive reuse and balancing modern functionality with historical preservation.

The conservation challenges were particularly prominent in both sites, with several interviewees highlighting financial constraints and technical difficulties in maintaining the authenticity of industrial structures while meeting contemporary needs. For example, R2 (a conservation expert from Zhujiadian) noted that preserving the brick factory required careful planning to integrate modern cultural uses without compromising the site's historical integrity. Similarly, R7 (a conservation expert from Colomadu) emphasized the significant financial investment required to transform the former sugar factory into a tourism and cultural center.

Table 1. Coding of Interview Responses and Identified Themes

Respondent	Role/Position		Key Quotes/Insights	Theme(s) Identified
	Colomadu	Zhujiadian		
R1	Local Historian (Colomadu)		"Colomadu stands as a reminder of our industrial past, but its current role is more cultural than industrial."	Heritage as Identity Marker, Adaptive Reuse
R2		Conservation Expert (Zhujiadian)	"Preserving the factory was challenging, especially balancing historical value with modern demands."	Conservation Challenges, Adaptive Reuse
R3	Community Member (Colomadu)		"The events here connect us to our history, but we also enjoy the new cultural and modern aspects."	Community Engagement, Heritage as Identity Marker
R4		Government Official (Zhujiadian)	"Our policies prioritizing the preservation of sites like Zhujiadian for cultural and economic reasons."	Government and Policy Support, Economic Impact
R5		Local Historian (Zhujiadian)	"This site represents the labor and industry that built this region and must be protected for future generations."	Heritage as Identity Marker, Conservation Challenges
R6		Community Member (Zhujiadian)	"We are starting to see more cultural activities, but there's still limited community involvement compared to other sites."	Community Engagement, Adaptive Reuse
R7	Conservation Expert (Colomadu)		"Transforming Colomadu into a tourist site was financially demanding, but its potential for economic growth is immense."	Conservation Challenges, Economic Impact
R8	Government Official (Colomadu)		"Colomadu's revitalization is a priority for the region, particularly in terms of tourism and preserving our heritage."	Government and Policy Support, Economic Impact
R9		Cultural Practitioner (Zhujiadian)	"The creative industry has breathed new life into Zhujiadian, showing the site's potential beyond its industrial past."	Adaptive Reuse, Economic Impact

Source: Author, 2024

Government and policy support also emerged as a crucial theme, especially regarding the long-term sustainability of conservation efforts. Respondents such as R4 and R8 (government officials from Zhujiadian and Colomadu, respectively) highlighted the role of local and national governments in prioritizing heritage preservation as part of broader economic and cultural policies. These policies also promote the economic impact of heritage sites, as seen in the growing tourism and creative industries in both locations.

Overall, the coding and analysis of interview data reveal that while Colomadu and Zhujiadian face similar challenges in conserving their industrial heritage, each site's unique historical and socio-cultural context shapes its approach to these challenges. The findings underscore the importance of adaptive strategies that balance historic preservation with modern usage and the need for continued community involvement and governmental support to ensure the sustainability of these heritage sites.

The comparative analysis of the Colomadu sugar factory in Indonesia and Zhujiadian, a former brick factory in China, reveals several key themes central to understanding how industrial heritage sites contribute to local identity and cultural preservation. Through a combination of archival research, on-site observations, and interviews with key stakeholders, six significant themes were identified, each reflecting industrial heritage conservation's multifaceted challenges and opportunities. These themes—ranging from the role of heritage as an identity marker to the economic impact of conservation—serve as the foundation for understanding the broader implications of heritage preservation in Southeast and East Asia.

Table 2 summarises these thematic findings, providing a comparative view of the conservation strategies and their outcomes at each site. Colomadu and Zhujiadian represent industrial legacies reimagined to fit contemporary cultural and economic landscapes. The revitalization of these sites highlights the potential for industrial heritage to serve as both cultural symbols and economic assets, though the pathways to achieving this vary based on the local context (Pendlebury, 2015; Smith, 2006).

Table 2. Key Research Themes in the Comparative Study of Colomadu and Zhujiadian

Theme	Description	Colomadu (Indonesia)	Zhujiadian (China)
1. Heritage as an Identity Marker	How industrial heritage sites contribute to local and national identity formation.	Colomadu represents Indonesia's colonial industrial legacy.	Zhujiadian as a symbol of China's ancient industrialization.
2. Adaptive Reuse of Industrial Sites	Transformation of industrial heritage into modern, functional spaces for tourism and culture.	Converted into a cultural center and tourism site.	Revitalised as a creative cultural hub and cafe
3. Community Engagement	The role of local communities in the preservation and continued use of heritage sites.	High community involvement in cultural events.	Limited community involvement but growing cultural interest.
4. Conservation Challenges	Financial, political, and technical difficulties faced during the conservation process.	Funding and maintenance challenges post-revitalization.	Balancing between preservation and modernization pressures.
5. Government and Policy Support	The role of government policies in facilitating or hindering heritage conservation efforts.	Support from local and national government initiatives.	Firm governmental policy driving cultural preservation.
6. Economic Impact of Heritage Sites	The influence of heritage conservation on local economies is mainly through tourism and business.	Boosted local economy through tourism and events.	Potential for economic growth through creative industries.

Source: Author, 2024

The findings presented in Table 2 illustrate how industrial heritage conservation in Colomadu and Zhujiadian reflects broader regional trends in adaptive reuse and heritage management. For example, both sites demonstrate how industrial structures, once central to economic production, now play significant roles in shaping local identity and preserving communal memory (Yang, 2019). In Colomadu, the sugar factory has been transformed into a cultural hub, with local engagement driving its current use as a venue for events and exhibitions. This aligns with findings from previous studies that emphasize the importance of community participation in heritage conservation (Smith, 2006). On the other hand, Zhujiadian, while embracing adaptive reuse, has focused on developing the site as a creative cultural center driven primarily by external cultural industries rather than grassroots community efforts (Lu, 2020).

One of the recurring themes across both sites is the challenge of balancing conservation with modernization. Both Colomadu and Zhujiadian face financial and technical difficulties in maintaining the authenticity of the sites while ensuring their relevance to contemporary audiences (Tweed & Sutherland, 2007). Furthermore, governmental support is pivotal in both cases, with policies promoting industrial heritage as part of broader cultural and economic development strategies (Qian, 2023). The economic impacts of these conservation efforts, particularly through tourism and creative industries, have also become increasingly significant, with both sites offering opportunities for local economic growth through heritage-led development (Fajarwati & Kurnia, 2021).

The analysis of Colomadu and Zhujiadian's industrial heritage sites reveals a range of key themes central to understanding their conservation processes and impact on local communities. By examining these sites through archival research, field observations, and stakeholder interviews, we identified six prominent themes: Heritage as an Identity Marker, Adaptive Reuse of Industrial Sites, Community Engagement, Conservation Challenges, Government and Policy Support, and Economic Impact of Heritage Sites. Each theme highlights different aspects of preserving, repurposing, and integrating industrial heritage into contemporary society. The following section provides an in-depth exploration of each theme, illustrating how Colomadu and Zhujiadian offer unique yet comparable insights into industrial heritage conservation.

This study provides a novel perspective on industrial heritage conservation by analyzing Colomadu and Zhujiadian transformations as representative case studies. Unlike previous research that broadly emphasizes the importance of adaptive reuse in historical buildings, this study delves deeper

into how these two sites uniquely balance the preservation of historical authenticity with their reinvention as spaces that drive socioeconomic and cultural engagement. The analysis highlights the specific strategies and challenges encountered at each site, offering valuable insights into the evolving conservation paradigm in Southeast and East Asia. By focusing on these distinct examples, the study contributes new knowledge on how industrial heritage sites can simultaneously serve as cultural markers and engines for sustainable development.

A. Heritage as Identity Marker

This theme explores how industrial heritage sites like Colomadu and Zhujiadian uniquely shape local and national identity.

- Colomadu: The Colomadu sugar factory embodies Indonesia's colonial industrial legacy, particularly in the sugar industry, which was pivotal during the Dutch colonial period. Its transformation into a cultural center has revitalized the site and redefined its role as a monument of historical and cultural significance. This transformation reflects integrating historical elements with contemporary uses, fostering a strong sense of local identity and pride. Beyond its architectural preservation, Colomadu has become a symbol of regional resilience, linking its colonial past with modern cultural and economic aspirations (Fajarwati & Kurnia, 2021).
- Zhujiadian: The former brick factory in Zhujiadian represents China's rapid industrialization and the labor-driven development that defined the region's growth during the industrial boom. However, its adaptive reuse into a cultural and creative hub reveals a deeper narrative. Zhujiadian not only preserves the industrial structures but also incorporates modern creative industries, making it a space that bridges historical significance with contemporary innovation. This dual role underscores the importance of balancing industrial heritage with new cultural expressions, offering a dynamic model of industrial conservation in rapidly modernizing societies (Liu et al., 2019).

By analyzing these two sites, this study identifies the distinct ways industrial heritage can simultaneously serve as a reminder of historical legacies and as a platform for contemporary socio-cultural evolution. The comparative synthesis reveals Colomadu emphasizes cultural pride through historical reflection, while Zhujiadian demonstrates innovation by integrating historical structures into modern cultural economies.

B. Adaptive Reuse of Industrial Sites

Adaptive reuse refers to repurposing old or obsolete industrial buildings for new uses while preserving their historical significance. Both Colomadu and Zhujiadian have undergone adaptive reuse to maintain their relevance in modern times.

- Colomadu: The site has been successfully transformed into a multipurpose cultural and tourism complex, hosting events, exhibitions, and performances. This shift from an industrial site to a cultural hub is a prime example of how adaptive reuse can reinvigorate a community's connection to its past while providing new economic opportunities (Pendlebury, 2015). See Fig. 1 below.



Fig. 1. The Adaptive Reuse of Colomadu Sugar Factory as a Cultural and Tourism Hub.
Photos by Author, 2023.

- **Zhujiadian:** Zhujiadian has been revitalized as a creative and cultural center (see Fig. 2). Although it retains its industrial aesthetics, the site now serves as a space for the arts, fostering innovation and cultural activities. The shift from industrial production to creative industries reflects China's broader efforts to integrate heritage into the modern economy (Lu et al., 2020).



Fig. 2. Revitalization of Zhujiadian Brick Factory as a Creative and Cultural Center.
Photos by Tun Tan Cheng Lock Center for Asian Architectural for Urban Heritage.

C. Community Engagement

Community engagement refers to the involvement of residents and stakeholders in the conservation and ongoing use of heritage sites. It is essential for the success and sustainability of heritage conservation projects.

- **Colomadu:** The community is highly involved in Colomadu's transformation. The local community actively participates in cultural events and activities at the site, reinforcing their emotional and cultural connection to the factory. This engagement ensures the site remains relevant and well-integrated into the community's cultural life (Smith, 2006).
- **Zhujiadian:** Colomadu. The revitalization and revitalization of Zhujiadian have been largely driven by external stakeholders, such as cultural and creative industry professionals, rather than grassroots community initiatives. However, there is growing interest among locals as the site becomes more integrated into the region's cultural landscape (Qian, 2023).

D. Conservation Challenges

Both sites face various challenges in their conservation efforts, including financial, technical, and political obstacles.

- **Colomadu:** The transformation of Colomadu was financially demanding, requiring significant investment to convert it into a modern cultural space while preserving its historical integrity. Moreover, the site must continuously balance attracting tourism and maintaining its cultural and historical authenticity (Purnomo et al., 2022).
- **Zhujiadian:** Zhujiadian faces technical challenges in preserving the brick factory's original structures. Adapting the site for modern use while retaining its industrial character has been a delicate process. Additionally, ongoing pressure to modernize the area could threaten the long-term preservation of its historical elements (Lu et al., 2020).

E. Government and Policy Support

Government support is crucial for the successful preservation and promotion of heritage sites. Policies that promote heritage conservation can ensure both financial backing and regulatory frameworks for protection.

- **Colomadu:** The Indonesian government, at both the local and national levels, has played a key role in supporting Colomadu's revitalization. Heritage conservation policies and tourism development initiatives have helped to position the site as a major cultural and economic asset (Purnomo et al., 2022).
- **Zhujiadian:** In China, heritage conservation policies are well-developed, and Zhujiadian benefits from government-led initiatives to preserve industrial heritage. Government backing has been instrumental in balancing conservation efforts with the region's broader economic development goals (Yan et al., 2022).

F. Economic Impact of Heritage Sites

One of the most significant aspects of industrial heritage conservation is its ability to boost local economies, particularly through tourism and creative industries. The economic outcomes of Colomadu and Zhujiadian reflect their respective historical backgrounds and the varying levels of intervention undertaken during their adaptive reuse processes.

- Colomadu: Originally built during the Dutch colonial period as a sugar factory, Colomadu reflects Indonesia's colonial industrial history. Its transformation into a cultural and tourism site involved significant intervention to adapt the space for modern uses, such as event venues and exhibitions. This has positively impacted the local economy by generating revenue through tourism and cultural activities, supporting the site's maintenance and surrounding community. The extensive renovations have maintained its historical core, balancing economic needs with cultural preservation (Pendlebury, 2015).
- Zhujiadian: As a former brick factory, Zhujiadian symbolizes China's industrial boom. Its adaptive reuse has taken a less intensive approach than Colomadu, focusing on integrating creative industries while retaining much of its original structure. The site primarily functions as a cultural hub for local creative economies, fostering investment and promoting community innovation. Although its tourism sector is less developed than Colomadu's, the site has successfully cultivated a space where modern creative industries coexist with historical authenticity, demonstrating a lower level of intervention prioritizing preservation (Yi et al., 2017).

The differences in adaptive reuse approaches between the two sites illustrate how historical context and economic goals shape heritage conservation outcomes. Colomadu's extensive renovation aligns with its cultural and economic hub role, while Zhujiadian's minimalist intervention emphasizes preserving authenticity and fostering creative growth. These distinctions underscore the importance of tailoring conservation strategies to each site's unique needs and histories.

IV. CONCLUSION

This study provides a comparative analysis of the industrial heritage conservation efforts at Colomadu in Indonesia and Zhujiadian in China, highlighting their unique contributions to local identity formation, cultural preservation, and economic development. Although both sites demonstrate the transformative potential of adaptive reuse, their approaches and outcomes differ significantly due to their distinct historical and geographical contexts.

Colomadu, as a site deeply rooted in Indonesia's colonial industrial past, Colomadu underwent extensive structural and functional transformations to become a cultural and tourism hub. These changes have successfully integrated Colomadu into the local community as a center for events and cultural engagement, boosting regional pride and economic development. However, such extensive interventions, including modifications to the original layout and architecture, have raised questions about the legitimacy of the changes and their impact on the site's authenticity. While the functional shift serves modern needs effectively, the trade-off between preserving historical integrity and achieving economic viability remains a key consideration.

Zhujiadian, in contrast, Zhujiadian reflects China's industrial legacy through a more conservative approach to adaptive reuse. The site emphasizes historical authenticity by retaining much of its original structure while gradually integrating creative industries into its function. This minimalist intervention ensures the preservation of its historical essence yet limits its potential to generate significant tourism revenue or community engagement on a large scale. Zhujiadian balances preservation and modern adaptation, but its economic impact remains less pronounced than Colomadu.

The findings suggest that while both sites contribute valuable lessons for industrial heritage conservation, their differing levels of intervention reveal the inherent challenges in balancing authenticity with modern functionality. Colomadu offers insights into the benefits of extensive redevelopment for economic gains, whereas Zhujiadian highlights the importance of minimal interventions in maintaining historical integrity. These examples underscore the need for tailored conservation strategies that respect each site's historical significance and socioeconomic goals. This study emphasizes the role of authenticity in heritage conservation. The degree of change permissible

during adaptive reuse is a critical factor that affects the site cultural and historical value. For future conservation projects, balancing authenticity and adapting to contemporary needs will be essential.

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