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Urban Economic Development in a Heritage - Cultural - Smart City Context: The Case of Hue City

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ABSTRACT

This study examines urban economic development in Hue City in the context of heritage conservation, cultural economy development, and smart urban transformation during the period 2021–2025. Using statistical analysis, comparative analysis, and policy analysis based on data from the Statistical Yearbooks of Thua Thien Hue Province and official socio-economic reports, the study analyzes key dimensions of Hue's urban economy, including economic growth, tourism recovery, service-sector expansion, digital transformation, and heritage-based urban development. The findings indicate that Hue has experienced positive changes in tourism recovery, service-led economic restructuring, and smart urban governance. However, several limitations remain, including modest economic scale, limited value-added generation from heritage resources, weak digital economy development, and insufficient integration between heritage conservation and urban economic activities. Based on these findings, the paper proposes policy implications related to heritage-based economic development, cultural industries, smart urban governance, digital transformation, and sustainable urban planning. The study contributes to discussions on urban economic development in heritage cities undergoing smart urban transformation in Vietnam.

Keywords: urban economic development; heritage city; cultural city; smart city; Hue

1. Introduction

Urbanization has become one of the most significant global development trends of the twenty-first century and an important driver of economic growth, structural transformation, and innovation. According to the World Bank (2023), urban areas currently generate more than 80% of global GDP, while the global urban population continues to increase rapidly. In many countries, cities have evolved beyond their traditional administrative functions to become centers of services, innovation, tourism, and cultural industries. However, rapid urbanization also creates major challenges related to infrastructure pressure, environmental sustainability, urban governance, and social inequality. In this context, sustainable urban economic development increasingly requires not

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only economic expansion but also effective urban governance and the strategic utilization of local cultural and historical resources.

For heritage cities, the relationship between urban economic development and sustainability is particularly complex. On the one hand, heritage and culture provide distinctive economic advantages that can support tourism development, cultural industries, and place-based competitiveness. On the other hand, rapid urban development may generate pressures on heritage conservation, urban landscapes, and cultural authenticity. UNESCO (2013) emphasizes that cultural heritage should not only be preserved as a historical asset but also integrated into sustainable development strategies. Similarly, Throsby (2001) argues that cultural resources can function as economic assets capable of generating long-term value through tourism, creative industries, and urban branding. Therefore, the development challenge for heritage cities lies not only in preserving cultural assets but also in transforming them into sustainable drivers of urban economic growth.

Alongside heritage-based development, smart city transformation has increasingly emerged as an important approach to improving urban governance and economic efficiency. The application of information and communication technologies (ICT), digital governance systems, and smart urban infrastructure can enhance public service delivery, optimize urban management, and support innovation-driven growth (Caragliu et al., 2011; Batty et al., 2012). In many cities, digital transformation has become closely linked with sustainable urban development strategies, particularly in tourism management, environmental monitoring, transport systems, and public administration. For heritage cities, smart urban development also creates opportunities to improve heritage management, diversify tourism experiences, and strengthen the connection between cultural resources and the digital economy.

In Vietnam, rapid urbanization and economic restructuring have significantly strengthened the role of cities in national development. According to the General Statistics Office of Vietnam, the urbanization rate increased from approximately 30.5% in 2010 to over 44% in 2024, while urban areas contributed around 70% of national GDP. However, urban development in Vietnam remains uneven and faces several structural challenges, including infrastructure limitations, environmental pressures, fragmented urban governance, and insufficient integration between economic development and cultural preservation. These challenges are particularly evident in heritage cities, where balancing conservation and modernization has become increasingly important.

Hue City represents one of the most distinctive heritage cities in Vietnam. As the former imperial capital and home to the Complex of Hue Monuments recognized by UNESCO as a World Cultural Heritage Site, Hue possesses significant advantages in heritage resources, cultural identity, tourism development, and service-based urban growth. In recent years, Hue has also become one of the leading localities in Vietnam in promoting smart city development and digital governance. The implementation of the Hue-S platform and the Intelligent Operations Center (IOC) has contributed to improving public administration, tourism management, and urban services. At the same time, the city has increasingly oriented its development strategy toward a heritage-cultural-smart urban direction.

However, despite these advantages, Hue's urban economy still faces several limitations. Economic scale remains relatively modest compared to major urban centers in Vietnam; the contribution of heritage-related activities to value-added generation remains limited; the digital

economy and innovation sectors are still underdeveloped; and the integration between heritage conservation, tourism development, and smart urban transformation remains incomplete. These issues suggest that the relationship between heritage resources, cultural economy, and smart urban development in Hue has not yet been fully optimized as a sustainable urban growth mechanism.

Existing studies on Hue have mainly focused on heritage conservation, tourism development, smart city governance, or sustainable urban planning as separate issues. Limited attention has been paid to the interaction between heritage-based economic development and smart urban transformation within the broader process of urban economic restructuring. In particular, empirical studies examining how heritage resources, cultural economy, and smart urban governance jointly shape urban economic development in Vietnamese heritage cities remain relatively limited.

This study contributes to the literature in three respects. First, it connects heritage-based urban development with smart urban transformation within an integrated urban economic perspective. Second, the paper provides empirical evidence from Hue City, a representative heritage city in Vietnam undergoing rapid digital and institutional transformation. Third, the study highlights the opportunities and limitations of combining heritage economy development with smart urban governance in the context of sustainable urban development.

Accordingly, the study addresses the following research questions: (1) How has Hue City's urban economy transformed during the period 2021–2025? (2) What roles do heritage, culture, and smart urban development play in this transformation? (3) What policy implications can support sustainable urban economic development in Hue City in the context of smart urban transformation?

2. Theoretical Framework

2.1. *Sustainable Urban Development Theory*

Sustainable urban development has become a central approach in contemporary urban studies, particularly in the context of rapid urbanization, environmental pressures, and increasing governance complexity. Rather than focusing solely on economic expansion, sustainable urban development emphasizes the balanced integration of economic growth, environmental protection, and social well-being within the urbanization process. According to UN-Habitat (2020), sustainable cities are those capable of maintaining long-term economic vitality while ensuring environmental resilience and social inclusiveness.

From an economic perspective, cities function as major engines of growth, innovation, and employment creation. Urban areas currently contribute more than 80% of global GDP and play a critical role in attracting investment, concentrating human capital, and stimulating technological innovation (World Bank, 2023). However, sustainable urban economic development is not merely reflected in high growth rates; it also depends on the quality, inclusiveness, and resilience of urban economic structures. In recent decades, many cities have shifted toward service-oriented, knowledge-based, and creative economies as more sustainable development trajectories.

The environmental dimension emphasizes the need to minimize the ecological costs of urbanization through sustainable land use, green infrastructure, renewable energy, and environmentally friendly transportation systems. Environmental sustainability has become increasingly important because uncontrolled urban expansion may generate pollution, resource depletion, and climate-related risks that undermine long-term urban competitiveness.

Consequently, sustainable urban development requires integrating economic objectives with environmental governance and climate resilience strategies.

The socio-cultural dimension focuses on improving quality of life, social equity, and accessibility to public services such as housing, healthcare, education, and urban infrastructure. In addition, social sustainability also involves preserving cultural identity, strengthening community participation, and maintaining social cohesion amid rapid urban transformation. For heritage cities, this dimension is especially significant because local identity and cultural continuity constitute essential components of urban sustainability.

Importantly, these dimensions are closely interconnected within the urban system. Economic growth without environmental protection may reduce urban livability, while excessive conservation without economic dynamism may weaken development capacity. Therefore, sustainable urban development should be understood as a process of balancing economic efficiency, environmental sustainability, and socio-cultural preservation through effective urban governance and long-term planning.

For heritage cities such as Hue, sustainable urban development presents additional challenges because economic expansion must coexist with the preservation of historical landscapes, cultural heritage, and urban identity. This requires development strategies that prioritize service industries, cultural economy, tourism, and innovation rather than extensive industrialization or uncontrolled urban expansion.

2.2. *Heritage Urban Development and Cultural Economy*

In the post-industrial era, heritage and culture have increasingly been recognized as strategic resources for urban economic development. Unlike traditional economic factors such as natural resources or industrial capital, heritage generates value through historical identity, symbolic meaning, and cultural experience (Throsby, 2001). As a result, many cities have shifted from viewing heritage merely as an object of preservation toward considering it a source of economic competitiveness and urban differentiation.

Florida (2002) argues that modern urban growth increasingly depends on the “creative class,” whose activities contribute not only to economic production but also to innovation, cultural vitality, and urban attractiveness. Similarly, Landry (2008) emphasizes that successful cities are those capable of transforming cultural resources into dynamic drivers of creativity and economic development. In this context, culture becomes an active economic asset rather than a passive historical legacy.

The economic value of heritage is realized when cultural resources are integrated into broader urban economic systems through tourism, cultural industries, festivals, creative services, and experiential consumption. Richards (2011) notes that heritage-based urban development depends not only on conservation itself but also on the capacity to create value-added activities associated with cultural assets. International experiences from cities such as Kyoto, Florence, and Barcelona demonstrate that heritage can become an important engine of urban growth when preservation is effectively combined with innovation and service development.

However, heritage urban development also involves structural tensions. Excessive commercialization may weaken authenticity and undermine long-term cultural value, while overly rigid conservation approaches may limit economic vitality and reduce development opportunities

(UNESCO, 2013). Therefore, the central challenge for heritage cities is to establish a balanced development model in which heritage is simultaneously preserved and economically valorized.

This issue is closely related to the concept of the cultural economy, which refers to economic activities based on creativity, symbolic production, cultural consumption, and experiential value creation. In heritage cities, cultural economy development enables the transition from a “static preservation model” toward a “living heritage economy,” where heritage continuously generates new economic value while maintaining its historical significance.

Hue represents a typical case of this development challenge. As one of Vietnam’s most important heritage cities, Hue possesses a rich system of cultural assets, including the Complex of Hue Monuments, royal court music, traditional festivals, and imperial cultural spaces. These resources create strong comparative advantages for tourism and service-based development. Nevertheless, the contribution of heritage to urban economic growth remains relatively limited compared to its potential, reflecting the insufficient development of cultural industries, creative services, and high value-added heritage economy activities.

2.3. *Smart City Development Theory*

The concept of the smart city emerged in response to increasing urban challenges associated with population growth, infrastructure pressure, environmental degradation, and governance complexity. In general, smart city theory emphasizes the application of information and communication technologies (ICTs), digital infrastructure, and data-driven governance systems to improve urban management efficiency, service delivery, and quality of life.

Giffinger et al. (2007) conceptualize smart cities as urban systems characterized by the intelligent integration of six dimensions: economy, governance, mobility, environment, people, and living conditions. Similarly, Lombardi et al. (2012) argue that smart cities depend on the interaction between technological infrastructure, human capital, social capital, and institutional capacity to enhance urban competitiveness and sustainability.

A more development-oriented perspective is proposed by Caragliu et al. (2011), who define smart cities as cities that invest in human and social capital, ICT infrastructure, and participatory governance in order to achieve sustainable economic growth and improved quality of life. In this perspective, technology is not considered an end in itself but rather a tool for enhancing economic efficiency, urban sustainability, and innovation capacity.

Recent studies also highlight the economic significance of smart urban systems. According to OECD (2022), smart city development can improve productivity, attract investment, optimize resource allocation, and foster innovation ecosystems. Similarly, McKinsey Global Institute (2023) suggests that digital technologies may significantly reduce urban operational costs, improve energy efficiency, optimize transportation systems, and strengthen environmental management.

In Vietnam, smart city development is closely associated with the national digital transformation strategy. According to the Ministry of Information and Communications (2023), digital transformation is based on three pillars: digital government, digital economy, and digital society. Consequently, smart urban development in Vietnam increasingly focuses on integrating digital technologies into governance systems, public services, economic activities, and citizen participation.

However, contemporary urban studies emphasize that smart city development should not be understood merely as technological modernization. The effectiveness of smart urban systems depends largely on governance capacity, institutional coordination, innovation ecosystems, and the ability to integrate technology into broader urban development strategies. In many developing cities, smart city initiatives remain concentrated in administrative digitalization while their contribution to economic transformation remains relatively limited.

For heritage cities such as Hue, smart city development carries additional significance because digital technologies can support both heritage conservation and economic exploitation. Smart governance systems, digital tourism platforms, real-time monitoring, and integrated urban data systems can improve visitor experiences, optimize heritage management, and enhance the economic value generated from cultural assets. Therefore, in the context of Hue, smart city development should be interpreted not only as administrative modernization but also as an enabling mechanism for heritage-based urban economic development.

2.4. *An Integrated Analytical Framework for Heritage–Cultural–Smart Urban Development: The Case of Hue*

Building upon the three theoretical perspectives discussed above—sustainable urban development, heritage-cultural economy, and smart city development—this study proposes an integrated analytical framework to examine urban economic development in Hue City. Rather than treating these approaches as separate dimensions, the framework conceptualizes them as interdependent components that jointly shape the development trajectory of heritage cities in the digital era.

At the center of the framework is the assumption that heritage and culture constitute the primary endogenous resources of Hue's urban economy. Unlike industrial cities whose growth is mainly driven by manufacturing or large-scale industrialization, Hue's comparative advantage is rooted in its system of cultural heritage, historical identity, and tourism-related services. Heritage therefore functions not merely as a preserved asset but as a strategic economic resource capable of generating urban competitiveness and service-based growth.

However, heritage itself does not automatically create economic value. The transformation of cultural assets into urban economic outputs depends on mechanisms of value creation, including tourism development, cultural industries, experiential services, and creative economic activities. In this context, the effectiveness of urban economic development is reflected not only in the expansion of tourism flows but also in the level of value added, diversification of services, and the capacity to extend cultural consumption within the urban economy.

The framework further incorporates smart city development as an enabling mechanism that enhances the efficiency, connectivity, and sustainability of heritage-based urban development. Digital technologies, integrated urban data systems, smart governance platforms, and digital tourism services can improve urban management, optimize tourism operations, and strengthen visitor experiences. In Hue, initiatives such as the IOC (Intelligent Operations Center) and the Hue-S platform illustrate the growing integration between digital governance and heritage-based service activities.

Importantly, the relationship among these three dimensions is systemic rather than linear. Sustainable urban development serves as the overarching orientation that balances economic growth, heritage preservation, environmental protection, and social inclusiveness. This balancing mechanism is particularly important for heritage cities because excessive commercialization may undermine cultural authenticity, while overly restrictive conservation may constrain economic dynamism.

From this perspective, the study conceptualizes urban economic development in Hue as the outcome of interactions among three interconnected pillars: (i) heritage and culture as the resource base; (ii) smart urban systems as enabling infrastructure; and (iii) sustainability as the regulatory and balancing framework.

This integrated framework also constitutes the analytical foundation for the empirical analysis in the following sections. Specifically, the study evaluates Hue's urban economic development through three dimensions: (i) structural transformation toward a service- and heritage-based economy; (ii) the role of digital governance and smart urban systems in supporting urban economic activities; and (iii) the sustainability challenges associated with balancing economic growth and heritage preservation.

Accordingly, the paper contributes to the literature by proposing a more integrated perspective on heritage urban development, in which cultural resources, smart governance, and sustainability are examined not as isolated policy domains but as mutually reinforcing drivers of urban economic transformation.

3. **Research Methodology**

This study employs a mixed qualitative–descriptive research approach to examine urban economic development in Hue City within the context of heritage-based, cultural, and smart urban development. The research combines secondary statistical analysis, comparative analysis, policy analysis, and qualitative interpretation to evaluate development trends, structural characteristics, and governance orientations associated with Hue's urban transformation.

3.1. ***Data Collection***

The study primarily utilizes secondary data collected from official and academic sources. Quantitative data are mainly derived from the Statistical Yearbooks of Thua Thien Hue Province published by the General Statistics Office and relevant socio-economic reports issued by the People's Committee of Thua Thien Hue Province and specialized departments during the period 2021–2025. Additional information is collected from policy documents, urban development reports, tourism reports, and digital transformation reports related to Hue City.

To establish the theoretical and analytical foundation of the study, the paper also reviews international literature and institutional reports from organizations such as the World Bank, OECD, UN-Habitat, and UNESCO, together with academic publications related to sustainable urban development, cultural economy, heritage cities, and smart city development.

The empirical analysis of the study focuses primarily on the period 2021–2025 because this period reflects both the post-COVID-19 recovery process and the accelerated transition of Hue toward a heritage–cultural–smart urban development orientation.

3.2. *Analytical Methods*

The study applies several complementary analytical methods.

First, descriptive statistical analysis is employed to examine major trends in Hue's urban economic development, including economic growth, sectoral structure, tourism development, digital transformation, and smart urban governance. Statistical indicators are analyzed to identify changes in the urban economic structure and the evolving role of heritage and service-based activities.

Second, comparative analysis is used to evaluate development trends across different years and to compare selected urban development characteristics of Hue with broader urban development tendencies in Vietnam. This method supports the identification of structural changes, development constraints, and emerging opportunities associated with Hue's urban economy.

Third, policy analysis is applied to examine the institutional orientation of Hue's urban development strategy, particularly in relation to heritage conservation, cultural economy development, smart city governance, and digital transformation. Relevant policy documents and official reports are reviewed to clarify the relationship between governance orientation and urban economic development.

In addition, the study adopts a qualitative SWOT-oriented perspective to identify key strengths, weaknesses, opportunities, and challenges associated with Hue's heritage-cultural-smart urban development orientation. Rather than constructing a formal SWOT matrix, this perspective is used as a supplementary analytical approach to support the interpretation of development conditions and policy implications.

Overall, the study is primarily descriptive and exploratory in nature. It does not attempt to conduct a causal impact evaluation but instead provides an empirical examination of development trends and governance orientations related to Hue's urban economic transformation.

4. **Results and Discussion**

Hue City possesses distinctive advantages for heritage-based urban economic development due to its concentration of cultural heritage assets, tourism resources, and historically embedded urban identity. As a centrally governed municipality with a UNESCO-recognized heritage system, Hue has increasingly oriented its development strategy toward a service- and culture-based urban economy. However, despite these comparative advantages, the city's economic scale and growth dynamics remain relatively modest compared to major urban centers in Vietnam, reflecting structural constraints in value creation, investment attraction, and economic diversification.

According to reports from the Hue City People's Committee, the city's GRDP in 2024 reached approximately VND 80 trillion, ranking 41st among Vietnam's 63 provinces and centrally governed cities, with an economic growth rate of approximately 8.15%. The economic structure continued to shift toward service-oriented activities, with the service sector accounting for 49.76% of GRDP, followed by industry and construction at 32.28%, while agriculture and other sectors contributed a smaller share. Although these indicators suggest gradual structural transformation, the overall economic contribution generated from heritage and cultural resources remains below its potential in terms of value added, innovation capacity, and productivity enhancement.

From a structural perspective, Hue's urban economy remains highly dependent on tourism and traditional service activities, while the development of creative industries, digital services, and technology-intensive sectors remains relatively limited. This creates a development pattern in which economic growth is increasingly associated with heritage exploitation and tourism expansion, yet the depth of economic linkages and spillover effects across sectors remains comparatively weak. Consequently, the city faces the challenge of transforming heritage from a largely tourism-supporting asset into a broader endogenous driver of urban economic development.

At the same time, the transition toward a heritage-cultural-smart city model has generated new opportunities for urban restructuring and governance modernization. Smart urban systems, digital platforms, and tourism-related technological applications have gradually improved urban management efficiency and service delivery. Nevertheless, the contribution of the digital economy and innovation ecosystem to overall urban growth remains limited, indicating that Hue is still in an early stage of integrating smart urban development into broader economic transformation processes.

In addition, Hue continues to face several structural constraints associated with sustainable urban development. First, although the city officially became a centrally governed municipality in 2025, its urbanization rate remains lower than that of major Vietnamese metropolitan areas such as Da Nang and Ho Chi Minh City. Second, infrastructure systems and regional connectivity remain insufficiently synchronized, particularly in transportation and high-quality urban services. Third, foreign direct investment (FDI) attraction remains relatively modest compared to competing urban centers, limiting the city's capacity to develop high value-added industries and innovation-oriented economic activities.

Against this background, the following sections analyze the dynamics of Hue's urban economic development during the period 2021–2025, focusing on three interrelated dimensions: (i) heritage- and culture-based urban economic restructuring; (ii) smart urban development and digital transformation; and (iii) the interaction between heritage economy and smart urban governance within the broader framework of sustainable urban development.

4.1. Urban Planning and Heritage-Cultural Urban Economic Development

Hue City occupies a distinctive position within Vietnam's urban system due to its concentration of historical-cultural assets and its development orientation as a heritage-based city. Unlike industrial urban centers where economic growth is primarily driven by manufacturing and large-scale urban expansion, Hue's comparative advantage is closely associated with its cultural identity, heritage landscape, and tourism-service economy. Consequently, urban economic development in Hue is strongly shaped by the interaction between heritage preservation, tourism activities, spatial planning, and service-sector transformation.

From a spatial perspective, Hue's urban structure reflects a relatively balanced coexistence between heritage zones, natural landscapes, and newly developing urban areas. The city possesses a unique urban ecosystem integrating historical architecture, rivers, green spaces, and cultural landscapes. The Complex of Hue Monuments, royal tombs, traditional festivals, and intangible cultural heritage such as Royal Court Music (Nhã nhạc) collectively create a distinctive urban identity and form the foundation for heritage-related economic activities.

However, the existence of heritage resources alone does not automatically generate high economic value. The central development challenge for Hue lies in transforming cultural assets into sustainable economic outputs while maintaining historical authenticity and urban livability. This challenge is particularly important because excessive tourism commercialization may generate pressure on heritage conservation, whereas overly preservation-oriented approaches may limit economic dynamism and reduce the developmental contribution of heritage resources.

In recent years, Hue has increasingly shifted toward a service- and tourism-oriented urban economy. Table 1 illustrates several key economic indicators reflecting this development trajectory during the period 2021–2025.

Table 1. Key Economic Indicators of Hue City in the period 2021-2025

Year	GRDP per capita (VND million/person)	Service share (%)	Tourist arrivals (million)	Growth rate (%)
2021	50.6	44.7	0.692	4.36
2022	57.4	45.9	2.05	8.5
2023	63.5	46.9	3.24	9.3
2024	71.8	47.7	3.9	8.5
2025*	80.0	48.2	6.3	8.5

2025 figures are estimated/projection data compiled from socio-economic reports of the Hue People's Committee and tourism development plans.

Source: Statistical Yearbooks of Thua Thien Hue Province (2022-2024), Hue People's Committee (2025); author's compilation.

Table 1 shows that Hue's urban economy experienced a relatively strong recovery following the COVID-19 pandemic, particularly from 2022 onward. Tourist arrivals increased significantly from 0.692 million visitors in 2021 to an estimated 6.3 million in 2025, while the share of the service sector in GRDP gradually increased from 44.7% to 48.2%. At the same time, GRDP per capita and overall economic growth rates also improved steadily throughout the study period. GRDP per capita and growth rate reached an estimated 80 million VND/person and 8.5% in 2025.

These trends indicate that service-oriented activities-especially tourism and heritage-related services-have become increasingly important drivers of urban economic growth. Nevertheless, the data should not be interpreted as fully confirming the establishment of a mature heritage-based urban economy. Although the service sector expanded steadily, the structure of value creation remains concentrated in tourism-related consumption and traditional services, while the development of creative industries, digital services, and high-value-added cultural activities remains relatively limited.

In this regard, Hue's urban economic transformation appears to be occurring primarily through quantitative tourism expansion rather than through deep structural upgrading. The increase in visitor numbers and tourism revenue has contributed positively to economic recovery and employment generation; however, the spillover effects into innovation-intensive sectors and

broader urban productivity enhancement remain modest. This partly explains why Hue's economic scale and competitiveness continue to lag behind major urban centers such as Da Nang and Ho Chi Minh City despite possessing substantial heritage advantages.

Table 2 further illustrates the role of tourism and heritage-related services in Hue's urban economy.

Table 2. Tourism Indicators in Hue in the period 2021-2025

Indicator	2021	2022	2023	2024	2025*
Tourist arrivals (million)	0.692	2.05	3.24	3.9	6.3
International visitors (million)	0.0076	0.26	1.2	1.47	1.9
Tourism revenue (VND billion)	1,177	4,500	6,606	8,000	14,000

2025 figures are estimated/projection data compiled from socio-economic reports of the Hue People's Committee and tourism development plans.

Source: Statistical Yearbooks of Thua Thien Hue Province (2022-2024), Hue People's Committee (2025); author's compilation.

Table 2 demonstrates the rapid recovery of Hue's tourism sector after the pandemic period. Tourism revenue increased substantially between 2021 and 2025, reflecting both the rebound of visitor demand and the expansion of tourism-related service activities. This recovery was supported by several major initiatives, including the restoration and reopening of heritage sites such as Thai Hoa Palace and Kien Trung Palace, the organization of the Hue International Arts Festival, and the implementation of the National Tourism Year 2025.

More importantly, Hue has gradually attempted to diversify its tourism orientation from conventional sightseeing toward an experience-oriented heritage economy. The development of branded tourism products such as "Hue – Festival City," "Hue Culinary Capital," and "Hue – Ao Dai Capital of Vietnam" reflects efforts to increase experiential value and strengthen urban identity within the tourism economy.

In addition, Table 2 indicates that the recovery of international tourism has been particularly significant. International visitor arrivals increased from only 7,600 visitors in 2021 to an estimated 1.9 million in 2025, suggesting the gradual restoration of Hue's integration into international tourism networks after the pandemic disruption. This trend is economically important because international tourists generally generate higher expenditures and stronger spillover effects on accommodation, transportation, culinary services, and cultural consumption compared to domestic tourism.

At the same time, the sharp increase in tourism revenue relative to visitor growth suggests an initial improvement in tourism value generation rather than merely quantitative expansion. This reflects Hue's efforts to diversify tourism products and enhance experience-based services associated with heritage and culture. However, despite these positive developments, tourism activities remain concentrated primarily in short-stay cultural tourism and seasonal festival events, indicating that the depth of heritage-based economic exploitation remains relatively limited.

Nevertheless, the economic structure remains highly dependent on tourism-related activities, creating potential sustainability risks associated with seasonality, external shocks, and pressures on heritage conservation. This indicates that heritage exploitation in Hue remains concentrated largely

in tourism services rather than broader cultural economy development. Therefore, future urban economic restructuring should prioritize the expansion of creative industries, digital cultural services, and innovation-oriented heritage economy activities capable of generating higher value added and stronger inter-sectoral linkages. Beyond tourism, urban planning also plays an important role in shaping Hue's development trajectory. The heritage core continues to function as the city's symbolic and tourism center, while surrounding urban areas are increasingly expected to absorb new economic activities and reduce development pressure on protected heritage zones. In this sense, urban spatial restructuring is not merely a physical planning issue but also an economic strategy aimed at balancing heritage conservation with urban expansion and service-sector growth.

A significant institutional milestone was Hue's official transition to a centrally governed municipality in 2025. This transformation creates new opportunities for investment mobilization, urban governance modernization, and infrastructure development. However, the effectiveness of this transition will largely depend on whether Hue can successfully move beyond tourism-dependent growth toward a more diversified heritage-cultural-smart urban development orientation characterized by higher productivity, stronger innovation capacity, and more sustainable value creation mechanisms.

4.2. Smart Urban Development in Hue City

In the context of accelerating digital transformation, smart urban development has increasingly become an important component of Hue's urban economic strategy. However, unlike major metropolitan areas where digital transformation is closely associated with industrial innovation and technology-based growth, Hue's smart city development has primarily evolved as a governance-oriented model supporting tourism management, public administration, and urban service delivery.

During the period 2021–2025, Hue emerged as one of Vietnam's leading localities in e-government and smart urban governance. The city developed an integrated digital governance system centered on the Intelligent Operations Center (IOC) and the Hue-S platform, which connect multiple urban management functions, including public administration, citizen feedback, transportation monitoring, environmental supervision, tourism support, and public security management.

From the perspective of urban economic development, these systems contribute to reducing administrative transaction costs, improving coordination efficiency, and enhancing the quality of public services. More importantly, smart urban governance supports the operational environment of the service economy, particularly tourism and heritage-related activities that depend heavily on information accessibility, visitor management, and urban experience quality.

According to reports from the People's Committee of Thua Thien Hue Province (2024), approximately 80–90% of eligible administrative procedures were provided online at Level 4 during the study period, while the rate of online administrative processing exceeded 60%. In addition, digital signatures were implemented across most provincial and local administrative agencies, and specialized data transmission systems covered nearly all government departments. These improvements indicate significant progress in administrative digitalization and urban governance modernization.

Beyond governance efficiency, digital transformation also contributed to improving urban service accessibility and citizen participation. Through the Hue-S application, residents and visitors can access real-time information, submit feedback, monitor public services, and receive tourism support. The platform recorded more than 800,000 downloads, while the citizen feedback system processed tens of thousands of reports annually, with a resolution rate exceeding 90% (People's Committee of Thua Thien Hue Province, 2024). This demonstrates that digital technologies in Hue are increasingly embedded within everyday urban management practices rather than functioning solely as isolated technological initiatives.

However, despite these achievements, the economic impact of smart city development in Hue remains relatively limited. The city's digital transformation has mainly concentrated on administrative modernization and urban management, while the digital economy and innovation ecosystem remain underdeveloped. According to the Department of Planning and Investment of Hue City (2023), technology enterprises account for only a small proportion of total businesses, and the contribution of the digital economy to GRDP remains lower than the national average.

This indicates that Hue's smart urban development has not yet fully evolved into a "smart economy" model in which technology directly drives innovation, entrepreneurship, and high-value-added economic activities. In other words, digital transformation in Hue currently functions more effectively as a governance-support mechanism than as a direct engine of economic restructuring.

From a sustainability perspective, smart urban systems also help reduce urban management pressures associated with tourism concentration, traffic congestion, and heritage conservation. Real-time monitoring systems, integrated databases, and digital public services contribute to improving resource allocation and management efficiency while supporting more sustainable urban operations. Nevertheless, the long-term effectiveness of smart urban development in Hue will depend on the city's ability to strengthen linkages between technology, creative industries, tourism services, and innovation-based economic activities.

Overall, the evidence suggests that Hue has established a relatively strong foundation for smart urban governance. However, the transition from "smart administration" toward a broader "smart urban economy" remains incomplete. Consequently, digital transformation should be interpreted not only as a tool for improving governance efficiency but also as a strategic mechanism for promoting innovation, enhancing service-sector competitiveness, and supporting sustainable urban economic development.

4.3. *Linkages Between Heritage-Cultural Urban Development and Smart City Development in Hue*

In Hue's urban development trajectory, heritage resources and smart urban systems are increasingly interconnected rather than functioning as separate development pillars. While cultural heritage constitutes the city's primary comparative advantage, smart city development provides technological and institutional mechanisms that enhance the management, accessibility, and economic utilization of these heritage assets.

This relationship is particularly evident in the tourism sector, which remains the core driver of Hue's urban economy. Digital technologies have enabled a gradual transition from conventional heritage management toward more integrated and experience-oriented urban tourism systems.

Through digital platforms such as the IOC and Hue-S, tourism information, visitor management, traffic coordination, environmental monitoring, and public security are increasingly managed in real time. As a result, heritage spaces are no longer treated solely as static cultural sites but are incorporated into a broader digitalized service ecosystem.

Table 3 presents several major digital technology applications currently implemented in Hue's heritage tourism development.

Table 3. Digital Technology Applications in Heritage Tourism Development in Hue City

Technology	Application in Hue	Implementing Agency	Economic Impact
Virtual Reality (VR)	3D virtual tours of heritage sites (Imperial Citadel, royal tombs), reconstruction of court spaces	Hue Monuments Conservation Center	Expands accessibility (online), prolongs experience, and increases service value
Augmented Reality (AR)	Reconstruction of architecture and royal rituals via mobile devices	Heritage Center, tech enterprises	Enhances interactive experience, increases tourist spending
Hue-S App	Real-time tourism information, citizen feedback, visitor support	Provincial People's Committee (IOC)	Reduces search costs, optimizes travel, and improves satisfaction
IOC Center	Monitoring traffic, security, environment, and tourism operations	Provincial People's Committee	Optimizes governance, reduces social costs, and improves tourism efficiency
Digital Data & Maps	Digitization of destinations, integration of tourism data	Department of Tourism, Department of ICT	Supports decision-making, enhances promotion and service linkage
Smart Cameras & IoT	Monitoring heritage sites, managing visitor flows, ensuring security	IOC, police, heritage authorities	Reduces overload risks, protects resources, a foundation for sustainability
Online Public Services	Licensing, registration, and payments for tourism activities	Government agencies	Reduces transaction costs, improves the business environment

Source: Thua Thien Hue People's Committee (2023, 2024), Ministry of Information and Communications (2023), and author's compilation.

Table 3 shows that smart technologies in Hue are primarily applied to improve governance efficiency, tourism management, and visitor experiences. These applications contribute indirectly to increasing the economic value generated from heritage assets by improving accessibility, reducing transaction costs, enhancing service quality, and supporting more effective urban coordination.

Importantly, the integration of smart systems into heritage tourism also contributes to addressing one of the central structural challenges faced by heritage cities: balancing economic exploitation with cultural preservation. Real-time monitoring systems, visitor-flow management, and environmental supervision help reduce pressure on heritage sites while maintaining tourism activities. In this regard, digital technologies function not only as management tools but also as mechanisms supporting the sustainability of heritage-based urban development.

However, the linkage between heritage and smart urban development in Hue remains relatively limited in terms of value creation and innovation capacity. Most current applications are still concentrated in administrative support and tourism facilitation rather than the development of high-value-added digital cultural industries. Technology has improved the operational efficiency of heritage tourism, but it has not yet generated a comprehensive “digital heritage economy ecosystem” characterized by strong participation from creative enterprises, digital platforms, and innovation-driven business models.

Consequently, Hue’s development model currently reflects a transitional stage: from a heritage city supported by digital governance toward a more integrated heritage–cultural–smart urban economy. Achieving this transition requires not only technological investment but also stronger institutional coordination, market-oriented innovation policies, and the expansion of digital cultural industries capable of transforming heritage resources into sustainable endogenous economic value.

Overall, the interaction between heritage, culture, and smart urban systems has gradually become a defining characteristic of Hue’s urban development strategy. Nevertheless, the long-term effectiveness of this model will depend on the city’s ability to deepen the integration between technology, cultural economy, and urban innovation rather than limiting smart city development primarily to governance modernization.

5. Policy Implications

The findings of this study suggest that Hue’s urban economic development should prioritize deeper integration between heritage resources, service-sector upgrading, and smart urban governance rather than relying primarily on quantitative tourism expansion. Based on the empirical analysis presented in Sections 4.1–4.3, several policy implications can be identified.

First, Hue should strengthen the transition from tourism-dependent growth toward a broader heritage-based cultural economy. Although tourism recovery has contributed significantly to economic growth during the period 2021–2025, the analysis indicates that heritage exploitation remains concentrated mainly in short-stay tourism services and festival-related activities. The contribution of creative industries, digital cultural services, and innovation-oriented cultural activities to urban economic value creation remains relatively limited. Therefore, future development strategies should prioritize the expansion of cultural industries associated with heritage resources, including digital cultural products, creative design services, cultural exhibitions,

performing arts, and experiential tourism services capable of generating higher value added and stronger inter-sectoral spillover effects.

Second, urban planning policies should continue emphasizing the balance between heritage conservation and economic development. The findings demonstrate that Hue's comparative advantage is closely associated with its historical urban landscape, cultural identity, and environmental characteristics. Consequently, uncontrolled urban expansion and excessive commercialization may undermine the long-term sustainability of the heritage economy itself. Future urban planning should therefore strengthen spatial differentiation between heritage conservation zones, tourism-service areas, and new urban development corridors in order to reduce pressure on protected heritage spaces while maintaining urban growth capacity.

Third, smart urban development should evolve beyond administrative digitalization toward stronger integration with economic transformation processes. The study shows that Hue has achieved substantial progress in smart governance through the IOC system, the Hue-S platform, and online public services. However, the economic contribution of digital transformation remains relatively modest because smart technologies are still concentrated primarily in governance support and tourism facilitation. Therefore, future digital transformation policies should encourage stronger linkages between smart urban systems, cultural industries, tourism services, and innovation-oriented enterprises. In particular, digital technologies should be more actively integrated into heritage management, tourism experiences, cultural promotion, and creative economic activities.

Fourth, the development of a heritage-cultural-smart urban economy requires stronger institutional coordination and investment mobilization mechanisms. The analysis indicates that Hue's current development model remains fragmented across heritage management, tourism development, urban governance, and digital transformation initiatives. Consequently, policy coordination among local government agencies, tourism authorities, heritage conservation institutions, and private enterprises should be strengthened in order to improve policy coherence and maximize development synergies. In addition, the city should prioritize investment attraction strategies targeting high-value-added service industries, digital infrastructure, and innovation-based economic activities rather than relying primarily on traditional tourism expansion.

Finally, sustainable urban development should remain the overarching principle guiding Hue's long-term development strategy. The study demonstrates that heritage preservation, smart urban systems, and economic growth are closely interconnected within Hue's urban development trajectory. Therefore, future policy implementation should ensure that economic exploitation of heritage resources does not compromise cultural authenticity, environmental sustainability, or urban livability. In this regard, sustainable urban governance should function not merely as an environmental objective but as a strategic mechanism for maintaining the long-term competitiveness and resilience of Hue's heritage-based urban economy.

6. Conclusion

This study examined urban economic development in Hue City within the context of heritage preservation, cultural economy development, and smart urban transformation during the period 2021–2025. The findings indicate that Hue has experienced positive changes in tourism recovery, service-sector expansion, and smart urban governance. Heritage and culture have increasingly

become important economic resources supporting tourism development and urban identity formation.

However, the study also shows that Hue's urban economic transformation remains incomplete. Although tourism and service activities have expanded, the urban economy still depends heavily on traditional tourism-related services, while the development of creative industries, digital cultural services, and innovation-oriented sectors remains limited. Similarly, smart urban development has mainly improved governance efficiency and public services rather than functioning as a direct driver of economic restructuring and innovation.

The findings suggest that sustainable urban development in Hue requires stronger integration between heritage conservation, cultural economy development, and smart urban systems. In particular, Hue needs to move beyond quantitative tourism growth toward higher value-added cultural and digital economic activities capable of generating stronger inter-sectoral linkages and long-term urban competitiveness.

Overall, Hue is currently undergoing a transition from a heritage city supported by tourism and digital governance toward a more integrated heritage-cultural-smart urban development model. The long-term success of this transition will depend on the city's ability to strengthen institutional coordination, promote innovation-oriented cultural industries, and balance economic development with heritage preservation and urban sustainability.

Despite these contributions, the study has several limitations. The analysis is primarily based on secondary data and adopts a descriptive and exploratory approach rather than a causal impact-evaluation model. In addition, the findings from Hue may not be fully generalizable to other urban contexts. Future studies could apply econometric methods, comparative case studies, or primary survey data to further examine the relationship between heritage economy, smart urban governance, and sustainable urban development.

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