

A Diversity- and Resilience-Oriented Strategy for the Renewal and Transformation of Macau's NAPE Commercial District

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Keywords	ABSTRACT
urban renewal; casino-tourism city; urban resilience theory; industrial niche; cultural capital conversion; Macau NAPE	NAPE (Zona Nova de Aterros do Porto Exterior), Macau's first central business district, formed through land reclamation in the 1980s and 1990s, is undergoing a structural crisis triggered by institutional change. The 2022 revision of the Law on the Operation of Games of Chance in Casinos stipulates that Macau's distinctive "satellite casino" operating model must be fully phased out by the end of 2025. Because NAPE has the highest concentration of satellite casinos in Macau, this policy shift will directly affect more than a dozen satellite casinos and thousands of associated jobs, as well as hundreds of small and medium-sized businesses in the district, turning the area's transformation needs from gradual improvement into a matter of structural survival. Existing research on old commercial district renewal and casino-tourism city transformation has largely focused on Las Vegas-style, large-capital-driven pathways, or has remained at the level of macro-level discourse on Macau's moderate economic diversification, with little systematic analysis of

Keywords

ABSTRACT

transformation pathways for old sub-core commercial districts facing institutional shocks. To address this gap, this study integrates urban resilience theory, industrial niche theory, institutional change theory, and cultural capital conversion theory to construct an analytical framework for diagnosing challenges, defining positioning, and generating strategies, drawing primarily on policy documents, government planning materials, and media reports to conduct a qualitative case study of NAPE. The study finds that NAPE's decline is rooted in a compounded mismatch across three dimensions: institutions, industry, and space. Based on this, the study proposes a transformation pathway centered on the vision of "Macau NAPE+" and the target positioning of a differentiated "third pole of urban function," integrating four mutually reinforcing core strategies—functional diversification, human-centered space design, cultural branding, and intelligent management—supported by a phased implementation roadmap and a public-private collaborative governance framework. The theoretical contribution of this study lies in proposing an integrated analytical framework transferable to the transformation of sub-core commercial districts in other casino-tourism cities; at the practical level, it provides an actionable policy toolkit for the Macau SAR Government and relevant stakeholders.

1. Introduction

Profound shifts in the global economic landscape and intensifying regional competition are driving the Macau Special Administrative Region to accelerate its transformation. To achieve moderate economic diversification and sustainable development, the Macau SAR Government has put forward the "1+4" development strategy—consolidating the integrated tourism and leisure industry ("1") while prioritizing the development of four industries ("4"): big health, modern finance, high technology, and convention, exhibition, trade and culture and sports. This top-level design requires the various functional districts within the city to reposition themselves accordingly, and NAPE—Macau's first modern central business district, built through land reclamation in the 1980s and 1990s—stands at the core of this adjustment.

As a former symbol of urban modernization, NAPE has in recent years faced a compounding of dual pressures. On one hand, the large-scale integrated resorts of Cotai have continuously diverted its customer base and commercial vitality through an experience that integrates shopping, entertainment, conventions, and accommodation. On the other hand, long-accumulated problems within the district itself—aging building facades, poor-quality public spaces, homogenized commercial formats, and internal traffic congestion—have further eroded its urban competitiveness. More critically, the 2022 revision of the Law on the Operation of Games of Chance in Casinos stipulates that Macau's distinctive "satellite casino" operating model must be fully terminated by the end of 2025. Since NAPE has the highest concentration of satellite casinos in Macau, this institutional change will directly impact satellite casino operations, employees' livelihoods, and affiliated small and micro enterprises in the district (see Table 1). This event has abruptly shifted NAPE's transformation from "gradual improvement" to a matter of "cliff-edge survival," a level of urgency rarely seen in cases of old-district renewal in casino-tourism cities.

Table 1 Direct Impact of Satellite Casino Closures on NAPE

Indicator	Data
Number of affected satellite casinos	11 (the most concentrated area of satellite casinos in Macau)
Employees directly involved	Approximately 5,600
Affiliated small and micro enterprises	Approximately 320 (Macau Business Observer, 2024)

Existing literature on old commercial district renewal and casino city transformation has largely focused on Las Vegas-style, large-capital-driven, one-stop diversification pathways (Schwartz, 2003, 2019), or has remained at the level of macro-level discourse on Macau's "1+4" moderate economic diversification (Liu & Lin, 2024) and analyses of the Cotai integrated resort model (Zandonai, 2025). Research on how an old sub-core commercial district like NAPE can systematically transform in the face of institutional shocks remains largely absent. To address this gap, this study seeks to answer four interrelated questions: what specific bottlenecks does NAPE face across the four dimensions of industrial structure, spatial environment, social function, and brand image, and how will the closure of satellite casinos intensify these contradictions; what lessons can be drawn from the transformation experiences of comparable international commercial districts; in light of Macau's "1+4" strategy, what differentiated role should NAPE play within the urban functional network of "the Historic Centre—NAPE—Cotai"; and what governance structure and implementation pathway should be built to translate strategy into practice. Guided by these questions, this study aims to systematically identify the internal and external challenges facing NAPE, draw on international urban renewal experience to construct a theoretical analytical framework suited to the transformation

of sub-core commercial districts in the post-gaming era, propose a comprehensive transformation strategy that is both forward-looking and locally grounded, and translate this into concrete policy recommendations for the Macau SAR Government and relevant stakeholders. In doing so, the study aims to theoretically enrich urban renewal models under structural shocks in casino-tourism cities, provide practical reference for the revitalization of NAPE, and offer lessons for other old central business districts or tourism commercial districts worldwide that face a singular industrial structure and an urgent need for functional reinvention.

The subject of this study is Macau's NAPE commercial district, geographically bounded by Avenida da Amizade to the east, Avenida Dr. Sun Yat-Sen to the south, Sin Tak Lai Street (仙德麗街) to the west, and Avenida Dr. Rodrigo Rodrigues to the north. It encompasses the district's major hotels, former satellite casinos, office buildings, commercial facilities, and public spaces, and involves diverse stakeholders including government departments, gaming enterprises, small and medium-sized merchants, office workers, local residents, and visitors to Macau.

2. Literature Review and Theoretical Framework

2.1 Urban Commercial District Renewal and Casino-Tourism City Transformation

Early research on the renewal of old commercial districts focused largely on physical spatial transformation; Jacobs (1961) championed human-scaled streets and mixed-use neighborhoods, criticizing the damage that functionalist planning inflicted on urban vitality. Subsequent research gradually shifted toward more comprehensive dimensions: placemaking theory emphasizes community participation in the co-design and management of public space to enhance a place's distinctiveness and sense of belonging (Project for Public Spaces, 2007); and business improvement districts, as a public-private governance model that levies additional charges on property owners to fund public services such as environmental beautification, security, and marketing, are considered effective in enhancing the competitiveness of commercial districts (Ramirez, 2024; Suresh et al., 2024).

In the field of casino-tourism city transformation, scholars have widely focused on the economic vulnerability created by a singular industrial structure. Las Vegas's evolution from a pure "gambling town" into the "entertainment capital of the world"—achieved by developing non-gaming elements such as conventions, large-scale live entertainment, upscale dining, and shopping—diversified its customer base and optimized its revenue structure (Schwartz, 2003, 2019). However, other scholars have noted that this large-capital-led transformation model may exacerbate social stratification and crowd out small and medium-sized enterprises (Grinols, 2004). By contrast, existing research on Macau has largely concentrated on the macro-level pathway of "1+4" moderate economic diversification (Liu & Lin, 2024) or analyses of the Cotai integrated resort model (Zandonai, 2025); research specifically addressing how an old sub-core commercial district such as NAPE can systematically transform, particularly under the institutional shock of satellite casino closures, remains scarce. This study seeks to fill this gap by integrating the concepts of placemaking, public-private collaboration, and industrial ecosystem reconstruction.

2.2 Resilience, Niche, Institutions, and Cultural Capital: An Integrated Analytical Framework

To diagnose NAPE's predicament and generate transformation strategies, this study integrates four complementary theoretical perspectives. Urban resilience theory, rooted in ecology, refers to a city system's capacity to maintain core functions, adapt, and reorganize in the face of chronic stress and acute shocks; achieving this depends on economic structural diversification, governance flexibility, and social capital cohesion (Holling, 1973; Blečić & Cecchini, 2024), and this capacity for adaptation and reorganization must ultimately be grounded in the actual well-being and livelihood reconstruction of workers and community residents (Pauleit, Beckmann, & Kellmann, 2024). For NAPE, the concentrated closure of satellite casinos represents a classic acute shock, while long-term dependence on the gaming industry constitutes its chronic stress; Detroit's experience of achieving economic structural diversification after the collapse of the automobile industry—through the "Detroit Future City"

framework, developing urban agriculture, green infrastructure, and attracting tech start-up communities (Detroit Future City, 2012; Gallagher, 2010)—offers a reference point for NAPE's resilience-oriented transformation.

Industrial niche theory draws on the biological concept of "niche," positing that market actors seek differentiated positioning in order to survive, thereby forming an industrial ecosystem of mutual interdependence that avoids homogeneous competition (Hannan & Freeman, 1977). Within Macau's urban configuration, the Historic Centre occupies the "cultural tourism" niche by virtue of its World Heritage status, while Cotai occupies the "large-scale entertainment" niche through its integrated resorts. For NAPE to transform successfully, it must find a distinctive position in fields such as modern finance, boutique conventions and exhibitions, and cultural and creative industries that is offset from these two existing niches—a pattern corroborated by the experience of Germany's Ruhr region, which achieved industrial structural differentiation by cultivating diverse and complementary niches in industrial tourism, environmental technology, and higher education through the "IBA Emscher Park International Building Exhibition" (Ganser, 2007).

Institutional change theory, proposed by North (1990), distinguishes between "mandatory change" driven top-down by government and "induced change" arising bottom-up from market actors. NAPE's transformation is precisely triggered by the mandatory change of the revised Gaming Law, but its success will depend more on whether institutional designs—such as establishing dedicated funds, streamlining approvals, and introducing business improvement districts—can induce enterprises and citizens to voluntarily participate in renewal. Amsterdam's "night mayor" system, which replaces mandatory regulation with industry self-discipline and negotiation—thereby stimulating nighttime economic vitality while reducing governance conflict—exemplifies this kind of induced institutional innovation (Mahmoud & Zmysłony, 2024).

Cultural capital conversion theory, proposed by Bourdieu (2011), holds that

cultural capital—such as knowledge, taste, and local memory—can, under certain conditions, be converted into economic capital. Although NAPE lacks the deep historical heritage of the Historic Centre, the urban memory it carries as Macau's first CBD, together with intangible assets such as its Grand Prix culture, has the potential to be activated as a district brand. Seoul's Bukchon Hanok Village offers an instructive path in this regard, having successfully converted the cultural capital of a traditional neighborhood into economic capital and tourist appeal through protective restoration and the transformation of cultural experience spaces (Oh, 2024).

In sum, these four theoretical perspectives constitute the integrated analytical lens of this study: urban resilience theory sets the target state of transformation, industrial niche theory indicates the strategic direction, institutional change theory reveals the driving mechanism, and cultural capital conversion theory provides the tool for achieving differentiated positioning. The four are nested within one another rather than independent: institutional shock releases both the necessity and the space for industrial restructuring; the repositioning of an industrial niche requires a differentiated cultural narrative to achieve brand recognition; and the conversion of cultural capital, in turn, becomes an important source of the social capital cohesion emphasized by urban resilience theory. This integrated lens jointly underpins the analytical logic of this study's diagnosis of NAPE's challenges and generation of strategies.

3. Case Background and Research Methodology

3.1 Research Design: NAPE as a Revelatory Single Case

This study adopts a qualitative single-case study methodology (Yin, 2018), with Macau's NAPE commercial district as the unit of analysis. The case study method is well suited to in-depth examination of contemporary, complex phenomena situated within real-life contexts with blurred boundaries, and is particularly well matched to this study's research question—both explanatory and process-oriented—of why and how NAPE is responding to institutional shock and advancing transformation. The

choice of NAPE as a single case follows the "critical case" sampling logic articulated by Flyvbjerg (2006): the closure of satellite casinos triggered by the 2022 revision of the Gaming Law is a highly exogenous institutional event with a clearly defined timeline and a shock intensity rarely seen in cases of old-district renewal in casino-tourism cities. This makes NAPE, compared with the general commercial districts addressing gradual decline in existing research, a more information-rich "revelatory case" (Yin, 2018). An in-depth analysis of this case is expected to capture the typical mechanisms by which sub-core commercial districts in casino-tourism cities are forced to accelerate transformation when facing structural shocks—closely aligned with the "unusual and information-rich circumstances" that Eisenhardt and Graebner (2007) emphasize as the basis on which single-case studies extend or revise existing theory.

3.2 Data Sources and Collection

Following the principle of triangulating multiple sources of evidence in case study research (Yin, 2018), this study systematically collected and cross-verified three categories of data. The first is official policy documents and planning materials, with the core text being the 2022 revision of the Law on the Operation of Games of Chance in Casinos and its legislative explanatory notes, supplemented by relevant statements on the "1+4" development strategy and moderate economic diversification in the Macau SAR Government's Policy Addresses from 2019 to 2025 (seven in total), used to establish the specific provisions, timeline, and policy intent of the institutional change. The second is secondary academic literature, systematically searched primarily through Web of Science and CNKI using Chinese and English keywords such as "integrated resort," "urban regeneration," "casino city transformation," and "Macau gaming urban renewal," supplemented by snowball tracking of highly cited works; the urban renewal, casino-tourism city transformation, and resilience, niche, institutional, and cultural capital theoretical literature listed in this study's reference list serve as the direct basis for constructing the integrated analytical framework. The third is publicly available media coverage, drawing on local financial media such as

Macau Business Observer and mainstream financial media from the mainland, Hong Kong, and Taiwan, published between the announcement of the 2022 Gaming Law revision and the complete closure of satellite casinos by the end of 2025, used to supplement micro-level quantitative information and first-hand observations regarding employees' livelihoods and small business hardships that official documents do not cover (Macau Business Observer, 2024).

3.3 Data Analysis Procedure

Following the coding procedure proposed by Gioia, Corley, and Hamilton (2013), which balances inductive exploration with theoretical validation, the data analysis in this study proceeds through three successive stages. The first stage is open coding, in which first-order concepts (such as "satellite casino closures," "intermittent street vitality," and "architectural islands") were extracted sentence by sentence from policy texts and media reports, staying as close as possible to the original wording of the source material. The second stage is axial coding, in which first-order concepts were consolidated into several second-order themes and systematically categorized against the four dimensions of SWOT analysis—strengths, weaknesses, opportunities, and threats—forming a structured diagnosis of NAPE's internal and external environment. The third stage is theoretical aggregation, in which second-order themes were further distilled into three overarching dimensions—institutions, industry, and space—and repeatedly compared and reinterpreted within the integrated framework formed by urban resilience theory, industrial niche theory, institutional change theory, and cultural capital conversion theory, generating an abductive analytical logic that moves back and forth between induction and deduction. At the same time, the diagnostic findings were continuously benchmarked against the transformation experiences of comparable international cases—Las Vegas, Detroit, the Ruhr region, Amsterdam, and Seoul's Bukchon—to validate the plausibility and transferability of the vision, core strategies, and implementation pathway proposed in this study.

3.4 Research Credibility and Ethical Considerations

To enhance the credibility of this qualitative study, self-verification was

conducted against the four criteria established by Lincoln and Guba (1985). First, credibility is strengthened through cross-verification across the three categories of data sources and horizontal comparison with comparable international cases. Second, transferability is supported by thick description of NAPE's historical trajectory, industrial structure, and spatial form, giving readers a basis for judging the boundaries within which this study's conclusions may be transferred to other sub-core commercial districts in casino-tourism cities. Third, dependability is reflected in the systematic documentation of analytical decisions at each stage of coding and theoretical validation, forming a traceable analytical trail. Fourth, confirmability requires that this study's diagnostic conclusions and strategic derivations be anchored in publicly verifiable policy texts and media materials rather than in the researcher's unchecked subjective judgment. With respect to research ethics, all materials used in this study are publicly available policy documents, academic publications, and media reports; no personal privacy information was involved, and no informed consent procedures for interviewees were required. It should be noted that an evidence base drawn primarily from public secondary sources means that this study's grasp of micro-level matters—such as the operational hardships of small and medium-sized businesses and the psychological experiences of employees—derives mainly from media accounts rather than first-hand interviews. This methodological boundary constitutes an inherent limitation on the credibility of this study and should be borne in mind when interpreting its findings.

4. Diagnosis of Development Challenges Facing the NAPE Commercial District

4.1 Historical Trajectory and Path Dependence

NAPE was born out of large-scale land reclamation works undertaken from the late 1980s through the 1990s, its planning philosophy deeply influenced by the functionalism then in international vogue, with the aim of building an orderly, modern central business district to meet the new demands of Macau's economic takeoff. The

imprint of this planning logic remains clearly visible today: a wide road network that facilitates vehicular movement but fragments the neighborhood; individual buildings standing apart from one another, lacking podium connections, forming "architectural islands" that sacrifice a human-scaled street experience. After the liberalization of Macau's gaming industry, NAPE, with its concentrated stock of hotels and commercial buildings, gradually evolved into the primary hub of the "satellite casino" model, which sustained commercial prosperity in the district during a particular historical period but also entrenched its industrial structure and commercial ecosystem in a path dependence on the gaming industry. The rapid rise of the Cotai "integrated resort" model at the turn of this century—with its greater scale, newer facilities, and more integrated consumption experience—exerted a powerful siphoning effect on NAPE, gradually reducing it from its former status as the core CBD to a problem district with aging functions in urgent need of transformation.

4.2 Comprehensive SWOT Diagnosis

To systematically assess NAPE's internal and external environment, this study applies the SWOT framework to conduct a comprehensive diagnosis (see Table 2). Internal strengths lie in its superior gateway location, its concentrated stock of hotel and commercial properties, and the historical recognition it has accumulated as Macau's first CBD. Internal weaknesses include an industrial structure highly dependent on gaming and ancillary consumption, insufficient street experience and public space, street vitality that is thin outside limited peak and nighttime periods, and inefficient traffic organization. External opportunities arise from policy support under the "1+4" strategy, opportunities for coordinated development within the Greater Bay Area, and rising urban demand for higher-quality, experience-oriented consumption. External threats include the continued diversion of customers to Cotai, competitive pressure from surrounding regions, and NAPE's relatively vague brand image.

Table 2 Comprehensive SWOT Diagnosis of the NAPE Commercial District

Internal Strengths	Internal Weaknesses
Superior gateway location with strong transport accessibility; a concentrated stock of hotel and commercial properties with potential for functional conversion; historical recognition and emotional-memory assets as Macau's first CBD.	An industrial structure highly dependent on gaming and ancillary consumption, with weak risk resistance; functionalist planning resulting in insufficient street experience and public space; thin street vitality outside peak and nighttime gaming hours; wide roads but poorly organized intersections and inadequate parking supply.

External Opportunities	External Threats
Policy support from the "1+4" strategy; opportunities for the relocation of high-end producer services arising from coordinated development in the Guangdong-Hong Kong-Macao Greater Bay Area; sustained growth in demand from local residents and visitors for high-quality, experience-rich urban consumption.	Continued diversion of customers by Cotai's integrated resorts; intensifying competition in finance and MICE from the Hengqin Guangdong-Macao In-Depth Cooperation Zone and other Greater Bay Area cities; a vague, low-recognition brand image for NAPE compared with landmarks such as the Ruins of St. Paul's and The Venetian.

4.3 Compounded Challenges: A Triple Mismatch of Institutions, Industry, and Space

Taken together, the challenges currently facing NAPE can be summarized across three interrelated dimensions, rather than as isolated technical problems. First, at the institutional level, the revision of the Gaming Law places the symbiotic chain of

"satellite casino–hotel–surrounding businesses," on which the district has depended for survival, at risk of collapse as its "chain leader" exits—exposing deeper problems such as a short industrial ecological chain, a lack of endogenous growth drivers, and weak appeal to high-end talent. Second, at the spatial level, the fragmentation of buildings and streets rooted in functionalist planning leaves NAPE with abundant physical "space" yet a severe lack of the sense of place needed to draw people together (Project for Public Spaces, 2007); interwoven with this is a planning paradox—road networks designed for automobiles have fallen into an inefficient cycle due to poorly designed intersections and inadequate parking supply, constraining the district's accessibility. Third, at the image level, NAPE has lost the aura of a top-tier commercial district while lacking both the cultural depth of the Historic Centre and the entertainment impact of Cotai; its vague, dated brand image directly constrains the inflow of high-value visitor traffic in a tourism-dependent city where "attractiveness" is paramount, forming a vicious cycle of sustained decline. These three mismatches compound and reinforce one another, constituting a core proposition that NAPE's transformation must address simultaneously rather than in isolation.

5. Transformation Strategy Framework

5.1 Vision and Target Positioning

Based on the diagnosis above, this study proposes reshaping NAPE around the transformation vision of "Macau NAPE+"—that is, achieving comprehensive value-added upgrading on its existing foundation, moving beyond the functional positioning of a single CBD or gaming-ancillary district toward an around-the-clock hub of vitality that integrates modern business, cutting-edge art, smart technology, and green ecology. Following the logic of industrial niche theory (Hannan & Freeman, 1977), its specific target positioning is to serve as a "third pole" within Macau's urban functional configuration, distinct from the Historic Centre ("cultural experience and historical tourism") and Cotai ("one-stop mass entertainment and large-scale

conventions"), focusing on high-value-added industries such as modern finance, boutique conventions and exhibitions, and digital cultural and creative industries—forming a tripartite, functionally complementary urban structure and becoming the city's reception hall showcasing the achievements of Macau's "1+4" strategy.

5.2 Functional Diversification and Human-Centered Space

To address the challenge of a fragile industrial ecosystem, functional diversification is a core practice of urban resilience theory (Holling, 1973), aimed at reducing the district's dependence on a single industry by introducing a diverse mix of high-value-added formats. Specifically, existing office building stock can be leveraged to introduce modern financial formats such as family offices, wealth management, and fintech laboratories; boutique small- and medium-sized conventions and exhibitions in medicine, art trading, and design—distinct from Cotai's large-scale events—can be developed; a "first-store economy" can be used to introduce international designer brands and immersive cultural experience formats to raise commercial floor efficiency; and the nighttime economy can be upgraded toward higher-quality cultural experiences. Among these, a Cantonese stand-up comedy brand rooted in local language and lived experience could fill a market gap left open by Cotai's internationalized performing arts, forming a distinctive format that carries the dual significance of cultural capital conversion (Bourdieu, 2011) and niche differentiation.

To address the problems of spatial fragmentation and the absence of a sense of place, the human-centered space strategy is guided by placemaking theory (Project for Public Spaces, 2007; Jacobs, 1961), shifting the design focus from vehicular traffic and individual buildings toward human activity and experience. Core measures include: building a new generation of "eco-art skywalk" system that uses light, transparent materials and integrates vertical greenery with small-scale art and commercial nodes, replacing conventional footbridge proposals that have stalled due to their obstruction of streetscape views; implementing time-based pedestrianization

and widening sidewalks along secondary roads; revitalizing waterfront spaces to create a public leisure belt integrating slow-traffic systems and outdoor activities; and using incentive policies to promote vertical greening and the reuse of rooftop space on existing buildings. These two strategies correspond respectively to the rebuilding of industrial resilience and the regeneration of physical place, together forming the renewal skeleton for NAPE's economic base and spatial fabric.

5.3 Cultural Branding and Intelligent Management

The cultural branding strategy is a concrete application of cultural capital conversion theory (Bourdieu, 2011), aimed at converting intangible assets—such as NAPE's urban memory as Macau's first CBD and its Grand Prix culture—into a perceptible, consumable district brand asset. Pathways include establishing an annual light-and-art festival hosted within its modern architectural clusters, undertaking integrated artistic redesign of public facilities, and telling NAPE's urban narrative—from tidal flat to CBD to transformation—through online content curation and offline micro-tour systems.

The intelligent management strategy extends institutional change theory (North, 1990) into the technological dimension, lowering the transaction costs of running the district by introducing new technology platforms and management rules, thereby providing technical support for the three preceding strategies. Specific measures include developing a "NAPE+" one-stop service app that integrates merchant information, an events calendar, parking navigation, and AR guided tours, and deploying big-data- and IoT-based smart traffic signals and parking guidance systems to relieve internal traffic bottlenecks. The four strategies are not independent of one another but instead perform the respective functions of "strengthening the bones" (functional diversification), "building the body" (human-centered space), "forging the soul" (cultural branding), and "empowering" (intelligent management); only through their coordinated advancement can the systemic revival of NAPE be achieved.

6 Implementation Pathway and Governance Model

6.1 Phased Implementation Pathway

NAPE's transformation should follow a step-by-step implementation logic, starting with low-cost demonstration projects, gradually moving toward the construction of key infrastructure, and ultimately consolidating and deepening brand and governance outcomes. The specific pathway is set out in Table 3.

Table 3 Phased Implementation Pathway for NAPE's Transformation

Phase	Core Measures
Short term (Years 1–2)	Pilot a "Street Activation Program" on selected demonstration streets; hold the first light-and-art festival in a "small but beautiful" format; introduce time-limited investment incentives for fintech and cultural-creative enterprises; establish a cross-departmental task force.
Medium term (Years 3–5)	Complete Phase I of the elevated skywalk project; extend street renovation and waterfront promenade construction to major streets across the district; launch the core functions of the "NAPE+" smart app; cultivate emerging industrial clusters of initial scale.
Long term (Beyond 5 years)	Extend the skywalk network to cover major nodes; elevate the light-and-art festival into an internationally recognized event brand; iterate the smart city system based on operational data; establish a dynamic evaluation and adjustment mechanism.

6.2 Governance Structure and Policy Tools

The successful transformation of NAPE depends on a diversified, collaborative governance structure centered on public-private partnership. This study recommends establishing a "NAPE Renewal and Development Authority," modeled on London's

Docklands Development Corporation, and granting it cross-departmental powers over planning approval, investment promotion, and marketing coordination. At the same time, the business improvement district model should be promoted, allowing property owners and merchants within the district to voluntarily form non-profit organizations that levy additional charges to fund value-added services such as environmental improvement, commercial promotion, and security patrols. This is a typical application of "induced change" in institutional change theory (North, 1990; Ramirez, 2024; Suresh et al., 2024), effectively combining government-led top-down renewal with market-driven bottom-up revitalization.

In terms of specific policy tools, this study proposes corresponding tool combinations across three dimensions—planning and land, fiscal and taxation, and administrative approval—as shown in Table 4.

Table 4 Policy Toolkit for NAPE's Transformation

Policy Category	Specific Tools
Planning and land policy	Formulate a legally binding "NAPE District Detailed Plan"; introduce a floor-area-ratio bonus mechanism to incentivize property owners to participate in renewal (Kayden, 2000).
Fiscal and taxation policy	Establish a dedicated urban renewal fund; provide time-limited tax relief for newly established enterprises aligned with the "1+4" industry orientation.
Administrative approval policy	Establish a one-stop approval window within the Renewal and Development Authority; replace sequential approval procedures with parallel approval, shortening project timelines and reducing institutional transaction costs.

7 Conclusion

7.1 Research Conclusions

This study finds that NAPE's decline is rooted in the combined effect of a compounded mismatch across three dimensions—institutions, industry, and space: the institutional shock arising from the revised Gaming Law, industrial fragility resulting from path dependence on the gaming industry, and spatial fragmentation left by functionalist planning reinforce one another, jointly producing a systemic decline in district vitality. Accordingly, differentiated positioning and intensive, quality-driven development represent the only viable path for NAPE's transformation. The "Macau NAPE+" vision and its "third pole of urban function" positioning proposed in this study is precisely industrial niche theory put into practice in a specific context, aimed at finding a development path of complementary symbiosis with the Historic Centre and Cotai rather than homogeneous competition. The four-in-one strategic framework of functional diversification, human-centered space, cultural branding, and intelligent management constitutes the systemic solution for realizing this vision.

7.2 Theoretical and Practical Contributions

The theoretical contribution of this study lies in integrating four theories—urban resilience, industrial niche, institutional change, and cultural capital conversion—into a unified analytical framework, and applying it to explain the transformation dilemma faced by sub-core commercial districts in casino-tourism cities under major institutional shock, thereby offering urban renewal research a multidimensional analytical perspective transferable to other similar contexts. The practical contribution lies in the series of forward-looking and actionable specific strategies and projects proposed in this study (such as the eco-art skywalk, the Cantonese stand-up comedy brand, and the light-and-art festival), supplemented by a phased implementation roadmap and concrete policy tools, providing an actionable framework of reference for the Macau SAR Government and relevant stakeholders.

7.3 Research Limitations and Future Research Directions

The evidence base of this study derives primarily from policy documents, secondary literature, and publicly available reports, and does not incorporate first-hand interviews or surveys of merchants and tourists. This means that micro-level judgments regarding the operational hardships of small and medium-sized businesses and tourist consumption preferences still require more detailed empirical support for verification. At the same time, this study has not conducted input-output analysis or financial feasibility calculations for the economic rationality of large infrastructure projects such as the "eco-art skywalk" and various fiscal incentive policies; the relevant conclusions await further verification by professional engineering and financial teams. In addition, whether the "NAPE Renewal and Development Authority" and business improvement district model proposed in this study can be reconciled with Macau's existing legal system and social governance conventions, and how the interest tensions among diverse stakeholders should be coordinated, remain institutional design questions requiring further elaboration rather than matters that can be settled through theoretical deduction alone.

Looking ahead, dedicated feasibility studies on the financing model, operational management, and socioeconomic benefits of the elevated skywalk system would help translate this study's spatial vision into an executable engineering plan; tracking in depth the specific pathways by which modern finance and digital cultural-creative industries take root in NAPE could provide a basis for precisely targeted industrial policy; and exploring community participation mechanisms in the renewal process could help ensure that the dividends of transformation genuinely benefit local residents and small businesses, rather than remaining confined to the renewal of physical space and brand image alone.

The curtain falling on satellite casinos should not be seen as the closing note of NAPE's decline, but rather as the overture to its movement of transformation. While institutional shock inevitably brings pain, it also offers this reclaimed land—carrying the urban memory of generations of Macau people—a historic opportunity to break free of path dependence and redefine its own value. If the "Macau NAPE+" vision can

be realized step by step, NAPE will ultimately transform from an appendage of the gaming industry into an urban calling card that embodies both resilience and warmth within Macau's "1+4" diversified development strategy. This is not merely about the survival of one commercial district; it also reflects the self-renewal that casino-tourism cities must undergo as they move away from dependence on a single industry toward intensive, quality-driven development.

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