Policy Optimization for Empowering Urban Renewal through Cultural and Tourism Industries Based on the PMC Index Model Analysis

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Abstract. As Chinese cities transition from incremental expansion to stock optimization, integrating cultural tourism with urban renewal has become a pivotal national strategy. However, systematic policy deficiencies con-strain the efficacy of this integration. This study employs the Policy Model-ing Consistency (PMC) index model to quantitatively evaluate 12 munici-pal policies from Beijing, Shanghai, Chengdu, and Hangzhou. Nine prima-ry variables and 34 secondary indicators assess policy nature, perspective, duration, type, objectives, instruments, intervention stages, safeguards, and evaluation quality. Results indicate an average PMC score of 6.77 (Good level), with 33% of policies rated Excellent and 67% rated Good. While policy perspective ($*X*_2 = 1.00$) and evaluation rigor ($*X*_9 = 0.958$) demonstrate notable strengths, critical weaknesses emerge in binding force ($*X*_1 = 0.583$), temporal planning ($*X*_3 = 0.468$), and policy hierarchy ($*X*_4 = 0.46$). The analysis reveals that current frameworks rely excessive-ly on guidance-oriented instruments while lacking regulatory enforcement, balanced short-to-long-term planning, and high-authority legislative in-struments. Policy implications include strengthening mandatory standards, diversifying temporal frameworks, and elevating policy typologies to en-hance urban renewal outcomes through cultural tourism.

Keywords: cultural tourism, urban renewal, policy optimization, PMC index model

1 Research Background and Significance

1.1 Research Background

Global urbanization is shifting from incremental expansion to stock optimization through urban renewal. In China, this transition was institutionalized in the 14th Five-Year Plan and reinforced by the 20th Party Congress mandate for livable, resilient, and smart cities. [1] The 2024 Measures on Creating New Consumption Scenarios further directed the development of cultural-commerce-tourism integrated spaces.

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Cultural tourism, as a sector combining economic and cultural functions, has become instrumental in driving growth, preserving heritage, and improving quality of life. Rising consumption demands have diversified tourism experiences, creating new opportunities for urban regeneration. [2]

The integration of cultural tourism with urban renewal represents a synergistic trend: cultural tourism revitalizes cities by leveraging historical assets to enhance cultural soft power and economic sustainability, while urban renewal provides spatial platforms for tourism innovation. However, this integration faces systemic constraints including fragmented policy frameworks, capital shortages, insufficient resource exploitation, and inadequate format innovation.

1.2 Research Significance

Theoretical. Existing scholarship predominantly examines urban renewal and cultural tourism as discrete domains. [3]This study advances integrated theoretical frameworks by analyzing policy requirements, deficiencies, and optimization pathways, illuminating the interaction mechanisms between sectoral development and urban construction.

Practical. This research provides empirical foundations for evidence-based policymaking. By evaluating policy effectiveness and identifying implementation challenges, it enhances policy specificity and operability to foster synergistic development. The analysis of best practices offers actionable guidance for urban renewal project planning and operation, mitigating risks and improving success rates in sustainable urban transformation.

2 Theoretical Framework

2.1 Urban Renewal Theory

Urban renewal encompasses comprehensive transformation of aging districts and obsolete industrial zones, targeting four integrated dimensions: (1) Urban Planning—coordinating transportation, infrastructure, and public services with overall city layout; (2) Economic Development—driving industrial upgrading and employment growth; (3) Socio-Cultural Preservation—protecting heritage assets and revitalizing them through creative industries; and (4) Environmental Ecology—deploying green technologies and expanding ecological space to enhance carrying capacity.

2.2 Policy Instrument Theory

Originating in the 1980s with Hood's systematic analysis, policy instrument theory frames tools as bridges between governmental objectives and governance outcomes. This study adopts Rothwell and Zegveld's supply-environment-demand typology: supply-side instruments (education, funding, infrastructure) address factor shortages; environmental instruments (planning, tax incentives, regulations) resolve institutional bottlenecks; demand-side instruments (procurement, promotion, vouchers) unlock

market potential. Effective urban renewal governance requires dynamic coordination across all three dimensions to ensure policy objectives materialize in complex contexts.

3 Research Design

3.1 Content Analysis Framework

Sample Selection. Four representative cities were selected: Beijing (capital status, world heritage concentration, Central Axis conservation, "culture+technology" innovation); Chengdu (Shu civilization heritage, Park City philosophy, East Suburb Memory adaptive reuse); Hangzhou (Yangtze Delta hub, G20/Asian Games visibility, comprehensive tourism infrastructure); and Shanghai (spatial restructuring demands, complete industrial system, substantial economic capacity). Policies were screened for keyword frequency (≥3 mentions of "cultural tourism," "urban construction," "renovation," or "renewal"), currency, and relevance across all document types. [4]

Policy Instrument Dimensions. [5] Following Rothwell and Zegveld's typology, instruments are categorized as: (1) Environmental (financial support, strategic measures, tax incentives, legal regulation); (2) Supply-side (technology and information, infrastructure, funding, land policy, human capital training); and (3) Demand-side (private market, social organizations). This framework enables systematic analysis of how governments configure resources, shape institutional environments, and stimulate market demand.

Coding and Reliability. Policy clauses served as analysis units coded as "policy number-clause-subclause." Reliability was ensured through literature-based classification, inter-coder consistency verification (90%+ agreement), and intra-coder stability testing (90%+ consistency upon recoding).

3.2 PMC Index Model

Based on Ruiz Estrada's Omnia Mobilis assumption, the PMC index quantitatively evaluates policies through text mining and binary variable balancing. The analytical procedure comprises: (1) policy collection and screening; (2) variable establishment; (3) multi-input-output table construction; (4) index calculation and visualization; (5) result interpretation and optimization recommendations.

4 Research content

4.1 PMC Model Construction

Sample Selection. From 47 policies across Chengdu, Hangzhou, Beijing, and Shanghai, 12 high-quality texts were selected for PMC analysis, including Chengdu's 14th Five-Year Tourism Plan (P1–P3), Beijing's Urban Renewal and Sub-center Plans (P4–P6), Hangzhou's West Lake and Modern Service Industry Policies (P7–P9), and Shanghai's Riverside and Tourism Development Plans (P10–P12).

Variable System. ROSTCM6 software processed policy texts for high-frequency keyword extraction. Nine primary variables and 34 secondary variables were established: X1 Policy Nature (predictive, regulatory, advisory, guiding), X2 Policy Perspective (macro, micro), X3 Policy Duration (long, medium, short-term), X4 Policy Type (plan, program, measure, opinion, notice—weighted 1.0 to 0.2), X5 Policy Objectives (industry cultivation, market consumption, economic development), X6 Policy Instruments (environmental, supply-side, demand-side), X7 Intervention Stages (ex-ante, during, ex-post), X8 Safeguards (leadership, talent, institutions, publicity, funding, assessment), and X9 Policy Evaluation (clarity, rationale, planning, substance). Binary coding (0/1) was applied based on textual presence.

Multi-Input-Output Table. A 9×6 matrix integrated all variable scores for systematic comparison(see Table 1).

Table 1. Multi-input-output table

Primary variable	Secondary variable					
X_1	$X_{1:1}$	$X_{1:2}$	$X_{1:3}$	$X_{1:4}$	/	/
X_2	$X_{2:1}$	$X_{2:2}$	/	/	/	/
X_3	$X_{3:1}$	$X_{3:2}$	$X_{3:3}$	/	/	/
X_4	$X_{4:1}$	$X_{4:2}$	$X_{4:3}$	$X_{4:4}$	$X_{4:5}$	/
X_5	$X_{5:1}$	$X_{5:2}$	$X_{5:3}$	/	/	/
X_6	$X_{6:1}$	$X_{6:2}$	$X_{6:3}$	/	/	/
X_7	$X_{7:1}$	$X_{7:2}$	$X_{7:3}$	/	/	/
X_8	$X_{8:1}$	$X_{8:2}$	$X_{8:3}$	$X_{8:4}$	$X_{8:5}$	$X_{8:6}$
X_9	$X_{9:1}$	$X_{9:2}$	$X_{9:3}$	$X_{9:4}$	/	/

PMC Calculation. Primary variable scores were averaged (X4 used assigned weights directly). The composite PMC index was computed as the mean of nine primary variables. Rating tiers: Perfect (9.00–10.00), Excellent (7.00–8.99), Good (5.00–6.99), Acceptable (3.00–4.99), Poor (0–2.99). Three-dimensional surface mapping visualized policy strengths and weaknesses(see Table 2).

Table 2. Policy evaluation grading standard table

PMC Index	0~2.99	3.00~4.99	5.00~6.99	7.00~8.99	9.00~10.00
Rating Level	Poor	Acceptable	Good	Excellent	Perfect

4.2 Quantitative Results

The 12 policies averaged PMC 6.77 (Good). Four policies (33%) reached Excellent: P9 Hangzhou West Lake Plan (8.08), P5 Beijing Sub-center Plan (7.52), P3 Chengdu Cultural Tourism Plan (7.31), and P1 Chengdu Music Capital Plan (7.16). Eight policies (67%) rated Good, with P8 Hangzhou Legal Publicity List scoring lowest (6.03)

4.3 Key Findings

Strengths. Policy perspective (X2 = 1.00) and evaluation quality (X9 = 0.958) performed optimally. Instrument diversity (X6 = 0.858), intervention coverage (X7 =

0.887), and safeguard mechanisms (X8 = 0.873) demonstrated strong implementation frameworks. [6]

Weaknesses. Three critical deficits emerged: policy nature (X1 = 0.583) revealed soft-law dominance—100% guidance-oriented but only 41.7% regulatory and 16.7% predictive; policy duration (X3 = 0.468) showed medium-term fixation with only 25% long-term and 16.7% short-term planning; policy type (X4 = 0.46) indicated hierarchical flattening through overuse of low-authority opinions and notices versus statutory plans.

4.4 Implications

Current frameworks rely excessively on voluntary guidance instruments while lacking binding enforcement, temporal balance, and legislative weight. Optimization requires strengthening mandatory standards, diversifying planning horizons, and elevating policy typologies to enhance urban renewal outcomes through cultural tourism.

5 Research conclusion

5.1 PMC Model Construction

Policy nature constitutes the cornerstone of effectiveness. While advisory and guiding provisions achieve 100% and 75% coverage respectively, regulatory and predictive dimensions exhibit critical gaps—41.7% and 83.3% of policies omit these elements entirely. This guidance-oriented ecosystem, exemplified by Shanghai's *14th Five-Year Riverside Development Plan* (P10), articulates compelling visions ("industrial rust belt" to "lifestyle show belt") yet lacks mandatory standards and entry thresholds. The PMC surface depression at X_1 visually manifests this deficit in foresight and enforcement capacity, enabling selective implementation, inadequate resource allocation, and inconsistent standards that ultimately erode policy efficacy. [7]

5.2 Temporal Planning Imbalance ($X_3 = 0.468$)

Scientific temporal architecture serves as the navigation system for policy implementation. Current frameworks demonstrate universal alignment with medium-term planning horizons (1–5 years), yet short-term (<1 year) and long-term (>5 year) coverage plummet to 16.7% and 25% respectively. This "medium-term dependency syndrome" generates implementation drift. Hangzhou's *Legal Publicity Responsibility List*, despite establishing 2030 visionary targets, fails to decompose macro objectives into measurable annual or quarterly milestones, rendering execution progress opaque and feasibility questionable. The X_3 depression in PMC surfaces reveals this temporal unidimensionality. Absent short-term mechanisms, policies cannot rapidly respond to market dynamics; lacking long-term layouts, industries fail to secure sustained endogenous momentum—ultimately causing misalignment between immediate effects and strategic objectives.

5.3 Hierarchical Deficit in Policy Typology ($X_4 = 0.46$)

Policy output format directly determines strategic altitude and influence. The evaluation system assigns planning documents maximum weight (1.0), substantially exceeding notices (0.4) and other categories (0.2). Nevertheless, municipal outputs disproportionately comprise reactive notices addressing holiday promotions and safety inspections, while systematic planning documents remain scarce. Although exemplars like Chengdu's *14th Five-Year Cultural Tourism Development Plan* provide top-level design, policy formulation predominantly persists in passive "symptom-treatment" modes. This fragmented supply prevents integrated resource coordination and phased implementation, undermining the cohesive framework necessary for high-quality, sustainable cultural tourism ecosystems.

5.4 Summary

In summary, this study focuses on breaking the policy bottlenecks of enabling urban renewal through the cultural and tourism industry, revealing the policy logic of the integrated development of the cultural and tourism industry with urban renewal, and clarifying the target points of policy tools such as land supply, financial support, and industrial guidance; through the PMC index model analysis method, it conducts an analysis of the policy effectiveness of urban renewal in the cultural and tourism industry, exploring how the cultural and tourism industry can optimize and empower urban renewal through policy tools.

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