

## **Abstract**

Historic districts in China represent invaluable cultural assets yet face intensifying pressures from rapid urban expansion, evolving legislation, and rising socio-economic demands. Existing scholarship has often treated heritage conservation and urban vitality as separate or even conflicting goals, with limited integration between legal-institutional analysis, urban design strategies, and quantitative evaluation of urban life. This dissertation addresses this gap by investigating how historic environments can be revitalised through urban design strategies framed within a transdisciplinary perspective, thereby reconciling conservation imperatives with contemporary urban needs.

The research first clarifies the definition of historic districts by synthesising international charters and China's legislative trajectory, then theorises street vitality as a measurable indicator of conservation-led revitalisation. From the urban design literature and current practice, six strategy variables are operationalised for empirical testing: street length, street width, accessibility, greenery ratio, public space ratio, and point-of-interest diversity. Building on this conceptual framework, the study integrates legislative reviews, historical documentation, and comparative assessments with spatial and statistical analysis. This multi-layered methodology connects institutional evolution with urban morphology and street-level dynamics, allowing for a more holistic understanding of conservation outcomes.

To implement this framework, multiple historic districts in Guangzhou are examined as empirical cases, chosen for their diversity of conservation approaches and urban transformation pressures. Street vitality is established as the dependent variable, systematically related to the six design dimensions alongside socio-economic controls. Both within-case and cross-case comparisons are undertaken to capture contextual variations and to test the robustness of results.

The findings reveal robust patterns across modelling strategies. Accessibility consistently shows a strong positive association with street vitality, underscoring the role of fine-grained connectivity and transit integration. Street width is uniformly

negative, indicating that excessive carriageway dimensions erode spatial enclosure and pedestrian co-presence. Greenery ratio also demonstrates a stable negative relationship, reflecting trade-offs where landscaped surfaces displace active frontages or usable public realm. By contrast, the effects of public space provision and functional diversity are context dependent. Public space can foster vitality when proportioned and programmed in alignment with surrounding uses yet becomes less effective or even detrimental when overscale or poorly integrated. Functional diversity exerts a strongly positive effect in settings where fine-grain urban fabric supports mixed uses, but its influence weakens or turns statistically insignificant in other contexts, suggesting that diversity's benefits hinge on its spatial compatibility. Street length, meanwhile, remains largely insignificant once other design variables are controlled.

The dissertation makes threefold contributions. Theoretically, it develops a design-measurable framework that links legislation, policy practice, and spatial design to observable urban life, advancing vitality theory in historic contexts. Methodologically, it pioneers a transdisciplinary integration of legislative analysis, urban design theory, and spatial econometrics with big-data vitality metrics, demonstrating how multi-source evidence can be combined for robust evaluation. Practically, it provides evidence-based guidance for conservation governance, emphasising the prioritisation of accessibility, calibration of street widths, treatment of greenery as a complement to active edges, programming of public spaces, and support for fine-grain diversity through adaptive reuse. By situating urban design strategies within a transdisciplinary perspective, the study not only deepens the theoretical understanding of vitality in historic environments but also offers transferable insights for planners, policymakers, and designers engaged in conservation-led revitalisation in China and beyond.