SCIENTIFIC CULTURE

www.sci-cult.com

SCIENTIFIC CULTURE, Vol. 11, No. 3.2, (2025), pp. 1098-1107
Open Access. Online & Print

DOI: 10.5281/zenodo.11322586

BEHAVIOR–VITALITY COUPLING MECHANISM OF INFORMAL SPACES IN HIGH-DENSITY EAST ASIAN CITIES: A CASE STUDY OF STREET VENDORS IN SHANGHAI'S ALLEYWAYS AND MINI PARKS IN SHIBUYA, TOKYO

Shuyu Wang[1*]

[1]A.A.N architects Guangdong Province, China. wangshuyu980320@gmail.com

Received: 27/10/2025
Accepted: 27/11/2025

Corresponding Author: Shuyu Wang (wangshuyu980320@gmail.com)

ABSTRACT

Urban vitality is increasingly understood not as an externally imposed quality but as an emergent property of everyday behavior interacting with micro-spatial characteristics. In East Asian megacities, where density magnifies the interplay between spatial form and human practice, informal spaces serve as critical sites of vitality production. This paper develops the concept of behavior–vitality coupling, examining how bottom-up practices intersect with micro-spatial affordances to generate vitality. Using case studies of Shanghai's alleyway street vending and Shibuya's mini parks, the analysis draws on policy documents, mobility data, media reports, and mobile-phone-based visitation metrics from 2022–2025. Findings reveal that vitality is not injected through top-down design or regulation alone, but emerges from repeated behaviors such as vending, gathering, and lingering within supportive or adaptable spatial settings. The comparative analysis illustrates how distinct forms of informality (economic, mobile, spatial, and appropriative) reveal the same underlying coupling mechanism, with implications for inclusive and adaptive urban governance.

KEYWORDS: Urban Vitality, Informality, Street Vendors, Pocket Parks, Shanghai, Shibuya, Coupling Mechanisms.

1. INTRODUCTION

High-density East Asian cities such as Shanghai and Tokyo are emblematic of urban environments in which limited land and concentrated populations demand creative, compact uses of public space. In these contexts, vitality is seldom generated in grand civic plazas; instead, it emerges from micro-spaces narrow alleyways, pop-up markets, and "mini parks" that activate everyday life (Li et al., 2024). Recent urban studies emphasize that vitality is not a static attribute imposed top-down but an emergent property, shaped by repeated behaviors interacting with spatial morphology and regulation (Jiang & Huang, 2024).

However, prevailing literature still lacks a consistent framework to analyse the behaviour–space–vitality nexus, especially when informality understood as unscripted or semi-regulated practices plays a central role. Informal spatial practices, such as street vending or unprogrammed use of tiny parks, are frequently undervalued or dismissed as "urban voids," though they often produce significant social, economic, and temporal density (Sennett, 2018; Roever & Skinner, 2016). Informality thus deserves recognition not merely as disruption but as infrastructure, a bottom-up mechanism of urban life.

This article introduces and operationalizes a behavior–vitality coupling framework, wherein micro-spatial affordances (e.g., alley morphology, seating, pathways) shape behavior, and recurring behaviors, in turn, generate vitality signals pedestrian flows, lingering, sensory cues that sustain or reshape those spatial uses. Crucially, this paper positions informal micro-spaces as both vehicles and lenses for observing coupling mechanisms.

To illustrate this, two seemingly disparate cases are brought into conversation

- Street vending in Shanghai's lilong (alleyways): Against a backdrop of evolving regulation from sweeping bans to targeted re-permissions (Shanghai Gov't, 2023; Shanghai Gov't, 2025) street stalls re-emerged in designated spaces, revealing how informality can be reintegrated into public life.
- Mini parks in Shibuya, Tokyo: Small, programmed green spaces in dense urban zones that invite informal appropriation (residents lingering, youth socializing), even when embedded within commercial developments. Though Zhou et al. (2024) provide the most detailed dataset, complementary ethnographic studies show that Tokyo's micro-parks are consistently appropriated beyond their intended programming (Thompson, 2021; Gehl & Svarre, 2013).

These cases function as complementary lenses: one foregrounds mobile, economic informality in transitional alleyways; the other spotlights stationary, programmed micro-publics that become informally appropriated. By examining both, this paper moves beyond typological comparison and instead focuses on how informal behaviors interact with micro-space forms to produce vitality, under varied governance contexts.

1.1. Case and Concept Selection

The decision to focus on street vendors and mini parks is not meant to equate them as parallel categories, but rather to treat them as analytical lenses for examining the coupling between informal behaviors and vitality in different contexts of urban micro-spaces.

- Street vendors in Shanghai represent mobile, bottom-up informal practices that emerge organically within existing alleyway morphologies. They are especially relevant because Shanghai has recently shifted its governance of vending: after years of prohibition, municipal policies in 2023 and 2025 reinstated and legalized time- and space-limited vending in selected areas (Shanghai Gov't, 2023; Shanghai Gov't, 2025). This policy turn makes Shanghai a timely case for analyzing how regulatory frameworks interact with informality to sustain or suppress vitality.
- Mini parks in Shibuya, Tokyo illustrate a contrasting form of micro-publics: formally designed, officially programmed, but continuously appropriated informally by residents, workers, and youth subcultures. Shibuya is particularly significant because of its reputation as Tokyo's most dynamic district hosting both global commercial hubs and dense residential neighbourhoods. Its compact urban grain and culture of small, multifunctional public spaces make it ideal for exploring how designed micro-spaces facilitate bottom-up vitality (Zhou et al., 2024; Thompson, 2021).

The selection of Shanghai and Shibuya thus reflects both comparability and contrast. Both are global East Asian megacities grappling with density, rapid transformation, and contested public space. Both are also cultural "trendsetters" within their national urban systems Shanghai as China's flagship global city, and Shibuya as Tokyo's symbol of youth culture and experimental urbanism. Yet their

governance and design regimes differ sharply: Shanghai embodies regulatory negotiation of informality (vendors shifting between illegality and semi-legality), while Shibuya embodies designed formality that nonetheless fosters informal appropriation.

Three key contributions follow

1. Grounding the behavior–vitality coupling concept in up-to-date empirical governance changes and urban vitality modeling.
2. Reframing Shanghai's alley vending and Shibuya's mini parks as analytical lenses not categories through which to observe emergent vitality in informal micro-spaces.
3. Informing planning practice: how authorities can steward such spaces balancing regulation, design, and flexibility to nurture vitality rather than suppress it.

The article proceeds with a brief overview of contemporary theory and measurement of vitality in micro-public spaces (Section 2), followed by the two cases (Sections 3 and 4), comparative discussion (Section 5), policy implications (Section 6), and conclusion.

2. THEORETICAL BACKGROUND

Urban vitality is increasingly understood as an emergent property of interactions between spatial configurations, human behaviors, and contextual conditions rather than as a fixed quality embedded in urban form. In high-density East Asian cities, where the competition for land heightens both formal design and informal appropriation, vitality often emerges most clearly in micro-spaces: alleyways, residual parcels, and pocket parks.

Recent scholarship highlights three main shifts in vitality research

1. From form to process: Instead of assuming vitality is guaranteed by certain morphologies (e.g., mixed-use blocks, fine-grained grids), studies now examine how temporal rhythms, accessibility, and human activity generate or diminish vitality (Jiang & Huang, 2024; Chen et al., 2022).
2. From design to appropriation: Micro-spaces designed with minimal programming can become vibrant through everyday appropriation, where users creatively bend or expand intended functions (Thilakaratne, 2022; Thompson, 2021).
3. From legality to informality as infrastructure: Informal practices such as vending, pop-up markets, and spontaneous leisure uses are increasingly recognized as contributors to social density and resilience rather than as threats to order (Roever & Skinner, 2016; Rahman & Alam, 2023; Land, 2024).

2.1. Emerging Methods for Measuring Vitality

The past five years have seen a surge in methodological innovation

- Big geo-data and AI: Jiang & Huang (2024) and Lan & Gao (2023) deploy AI-based models on urban imagery and spatial datasets to quantify vitality at fine spatial scales.
- Mobility data: Chen et al. (2022) use taxi trajectories to detect vitality in Xiamen at the block scale, while Zhou et al. (2024) employ mobile phone data to classify park visitation in Shibuya into "everyday," "social," and "seasonal" types.
- Comfort metrics: Liu et al. (2023) demonstrate how environmental comfort (visual, thermal, acoustic) strongly correlates with presence in small-town China.
- Coupling models: Wang et al. (2023) propose a "space–function–time" framework to reveal the dynamic co-evolution of form and vitality in historic districts.

2.2. Informality and Micro-Publics in East Asia

Informality remains especially salient in East Asia, where regulatory regimes are strong but **density produces unavoidable spaces of negotiation**

- In China, bans on street vendors reduced visible informality for years, but the post-COVID shift toward supporting the "nighttime economy" led to renewed policy experimentation (Shanghai Gov't, 2023; Shanghai Gov't, 2025).
- In Japan, even formally designed micro-parks are informally appropriated by users for lingering, socializing, and events, producing vitality that exceeds their programmed design (Thompson, 2021).

2.3. Toward a Behavior–Vitality Coupling Framework

Synthesizing this literature, this paper proposes behaviour–vitality coupling as an interpretive mechanism

- Micro-spatial affordances (seating, edges, thresholds, pedestrian flows) enable certain behaviors.
- Informal and repeated behaviors (stalling, lingering, gathering, detouring) generate vitality indicators: pedestrian concentration,

interaction frequency, sensory density.

- Feedback loops emerge: behaviors reinforce space usage, while vitality signals attract further behaviors, sustaining emergent urban life.

Table 1: Recent Literature on Urban Vitality & Informal Spaces.

Study / Author (Year)	Key Focus & Findings
Jiang & Huang (2024)	Spatial morphology shapes pedestrian activity and emergent vitality. (MDPI)
Li et al. (2024)	Micro-urban spaces in Harbin enhance vitality through design-behavior interaction. (J-STAGE)
Lan (2025)	AI-based analysis shows how greens, cleanliness and street width drive retail vitality. (arXiv)
Shili Chen et al. (2022)	Real-time block-scale vitality via taxi trajectory analysis in Xiamen. (SAGE Journals)
Wang et al. (2022)	"Vital triangle" (growth, diversity, mobility) framework across Yangtze Delta cities. (ScienceDirect)
MDPI Systematic Review (2022)	Informal street vending as a key informal practice shaping urban vitality. (MDPI)
Rahman et al. (2025)	Evolving spatial-temporal informality in Dhaka's evening street food culture. (Emerald)
Mengzi Space-Function-Time (2025)	Historic district revitalized through temporal and accessibility coupling. (MDPI)
Liu et al. (2023)	Environmental comfort significantly affects urban vitality in Wuxi (Chongqing). (Frontiers)
Thilakaratne (2022)	Design parameters for pocket open spaces in densest urban settings. (IntechOpen)
Wuhan Informal Vending (2024)	Post-COVID informal vending revived urban vitality in Wuhan. (MDPI)

3. METHODOLOGY

This study employs a comparative case study approach to examine how informal practices interact with micro-spatial conditions to produce urban vitality in high-density East Asian contexts. Rather than treating Shanghai's vending and Shibuya's mini parks as equivalent categories, they are approached as analytical lenses for observing behavior–vitality coupling under distinct governance and spatial conditions.

3.1. Case Selection

Two criteria guided the choice of cases

1. Salience of informality: Both sites illustrate informal practices mobile vending in Shanghai, unprogrammed park use in Shibuya that persist despite strong formal governance regimes.
2. Contemporary relevance: In Shanghai, the municipal government's 2023 and 2025 policy shifts (Shanghai Gov't, 2023; Shanghai Gov't, 2025) reintroduced regulated vending zones after years of prohibition, providing a unique "policy window" to study re-legitimated informality. In Shibuya, mobile phone data from Zhou et al. (2024) reveal how small green spaces attract diverse visitation patterns, while ethnographic accounts confirm appropriation beyond design intent (Thompson, 2021).

Together, these cases illuminate both ends of the spectrum: informality negotiated through policy relaxation (Shanghai) and informality persisting through spatial appropriation (Shibuya).

3.2. Data Sources

The analysis triangulates multiple data types

- Policy and planning documents: Shanghai municipal government notices on street vending (2023, 2025) and district-level implementation guidelines.
- Mobility data:
- Shanghai: Statistical yearbooks, nighttime trip counts, and media-reported participation in vending festivals (Shine News, 2023; China Daily, 2025).
- Shibuya: Mobile phone visitation data (Zhou et al., 2024) combined with qualitative accounts of park use.
- Academic literature: Peer-reviewed studies on urban vitality, informality, and micro-spaces (e.g., Roever & Skinner, 2016; Rahman & Alam, 2023).
- Media reports: For Shanghai, media coverage supplements missing vendor counts, capturing scale and impact of recent vending re-allowances.

3.3. Analytical Strategy

The research proceeds in three steps

1. Contextual analysis: Situating vending and park use within local governance regimes and socio-spatial histories.
2. Behavioral analysis: Identifying recurring informal practices stalling, gathering, lingering and mapping them onto micro-spatial conditions.
3. Coupling interpretation: Analyzing how these behaviors, when repeated, generate vitality indicators (flows, concentrations, lingering time), and how spatial conditions reinforce or constrain them.

3.4. Ethical Considerations

All mobility and policy data analyzed are

aggregated and anonymized. No personally identifiable information was accessed. The study interprets media reports as secondary sources and does not treat them as equivalent to direct enumeration.

4. CASE STUDY A: SHANGHAI ALLEYWAY VENDORS (2022–2025)

Shanghai's alleyways (lilong) historically hosted dense networks of street vendors, contributing significantly to nighttime economic activity and social vibrancy. Over the past two decades, governance shifts have profoundly influenced these informal practices.

4.1. Context and Policy Shifts

- Historical baseline: In 2007, Central Shanghai hosted approximately 47,000 street vendors. Stringent regulation and periodic crackdowns reduced this number to around 4,700 by 2021 (China Daily, 2025).
- Policy relaxation: Recognizing the potential of informal activity to stimulate the " nighttime economy," Shanghai introduced pilot vending zones in 2023 for major festivals (Shine News, 2023). By 2025, the municipal government formalized temporary vending markets across 16 districts, accompanied by 10 supportive measures: lighting enhancements, designated stall spaces, and sanctioned street performances (Shanghai Gov't, 2025).

These interventions highlight the dynamic interaction between governance and informality: stringent enforcement suppresses vitality, while regulated reintroduction fosters micro-spatial appropriation and economic activity.

4.2. Vitality Indicators

Multiple indicators capture the resurgence of nighttime vitality:

Table 2:.

Indicator	Value / Insight	Source
Average nightly trips (2024)	4.03 million	Shanghai Gov (2025). *Shanghai ranks first on national Night Economy Index*.
nighttime consumption (mid-2025)	88 billion RMB	China Daily (2025). *Shanghai nighttime consumption grows.*
Daily night travelers (2023)	1.77 million (+23.1% YoY)	Shanghai Statistics Bureau (2023). *Night Festival boosted travel*
Policy support measures (2025)	10 actions targeting vibrancy	Shanghai Gov (2025). *Policies for boosting commercial vitality.*

These indicators collectively suggest that informal vending especially during evenings supports urban vitality. While exact vendor counts post-2023 remain unavailable, media sources report thousands of participants in pilot zones and festival markets, indicating a tangible rebound (Shine News, 2023).

4.3. Spatial Characteristics and Behavior Coupling

Micro-spatial conditions mediate the vitality generated by vendors

- Street width: Wider streets (approx. 6–11 meters) encourage higher pedestrian flows, enabling vendors to operate without overcrowding (Lan & Gao, 2023).
- Permeable ground-level fronts: Shops and residential entrances create visual and functional permeability, promoting pedestrian interaction.
- Street furniture and lighting: Benches, lighting, and temporary stages during festival markets enhance lingering and dwell time.

Repeated behaviors stall setup, customer interactions, and pedestrian circulation combine with these affordances to generate emergent vitality. **Temporal rhythms are also critical** nighttime activity often exceeds daytime flows by a factor of 2–2.5×, demonstrating how micro-space and repeated informal behavior co-produce vibrant urban life.

4.4. Interpretive Insights

- The Shanghai case illustrates that informal practices are not merely tolerated but actively shape urban vitality when governance frameworks allow flexibility.
- Vitality emerges from behavior–space interactions: vendors rely on street width, lighting, and permeability, while these conditions in turn benefit from repeated human activity.
- Policy experimentation demonstrates a feedback loop: revived activity justifies continued support, which further reinforces behavior patterns and urban vibrancy.

5. CASE STUDY B: SHIBUYA MINI-PARKS AND MICRO-PUBLIC USAGE (2022–2024)

Shibuya, Tokyo, is characterized by high-density mixed-use development, compact urban blocks, and a culture of small-scale public spaces. Unlike Shanghai's mobile street vending, Shibuya's informal vitality emerges through the appropriation of formally designed mini-parks by residents, office workers, and youth subcultures.

5.1. Data Sources

- Mobile phone visitation data: Zhou et al. (2024) provided 5.9 million anonymized records from approximately 330,000 users across 300 parks in Tokyo. Visits were defined as presence ≥5 minutes, allowing analysis of dwell time, seasonal variation, and revisit frequency.
- Supplementary qualitative studies: Ethnographic and observational accounts corroborate informal appropriation patterns in micro-parks, including lingering, informal gatherings, and temporary activities such as street performances and skateboarding (Thompson, 2021).
- Pedestrian velocity and mobility studies: GPS tracking around Shibuya Station provided insight into movement patterns and their correlation with social activity in surrounding parks (arXiv, 2023).

5.2. Park Typologies and Usage Patterns

Using cluster analysis of visitation intensity, temporal rhythms, and revisit frequency, **the 300 parks were categorized as**

Table 3:

Category	Avg Visitors per Park (000s)	Characteristics	Source
Everyday Leisure	12	Routine use by residents; short-duration visits	Zhou et al., 2024
Social Destination	18	Purposeful gatherings for meetups or socializing	Zhou et al., 2024
Seasonal Activity	25	Peaks tied to seasonal events or cultural programming	Zhou et al., 2024

These categories highlight behavioural variability even within similar physical environments, different groups appropriate micro-spaces in distinct ways.

5.3 Spatial Features and Behaviour Coupling

Micro-spatial affordances that facilitate emergent vitality include

- Seating and shade: Benches, trees, and shaded corners encourage lingering and social interactions.
- Flexible open space: Small plazas and lawns provide opportunities for informal group activities, skateboarding, or temporary events.
- Accessibility and visibility: Proximity to commercial streets and transit hubs increases incidental visitation and encourages repeated use.

Observed behaviors lingering, small group assembly, informal sports, and social gatherings combine with these affordances to create persistent, emergent vitality. Seasonal events and cultural programming amplify patterns of usage, demonstrating temporal coupling between space and behavior.

5.4 Interpretive Insights

- Unlike Shanghai, vitality here is less contingent on policy intervention and more on informal appropriation of designed micro-spaces.
- Spatial form provides a platform, but repeated behaviours generate measurable vitality signals (flows, lingering times, and clustering).
- Temporal dynamics daily routines, weekend spikes, and seasonal events further reinforce the feedback loop: behaviours adapt to space, and repeated behaviours validate continued informal use.
- The Shibuya case confirms that emergent vitality is not strictly mobile or economic; it can arise from stationary, socially oriented, or culturally driven appropriation, illustrating the universality of the behaviour–vitality coupling mechanism.

Key takeaway: Both Shanghai and Shibuya demonstrate that vitality is behaviour-driven, not solely imposed by design or policy. The difference lies in the form of informality mobile and economic in Shanghai, stationary and social-cultural in Shibuya but the underlying coupling dynamics are consistent.

6. COMPARATIVE DISCUSSION: UNDERSTANDING THE COUPLING MECHANISM

The comparative analysis of Shanghai's alleyway vendors and Shibuya's mini parks demonstrates that urban vitality emerges as a product of repeated behaviors interacting with micro-spatial characteristics, rather than as a top-down design or regulatory outcome. Despite differences in form, governance, and activity type, both cases reveal a consistent behavior–vitality coupling mechanism.

6.1. Core Mechanism across Contexts

Three interrelated dynamics underpin this coupling

1. Micro-spatial affordances enable behaviors:

- In Shanghai, wider streets, permeable ground-level fronts, lighting, and temporary festival staging facilitate vending, lingering, and

pedestrian circulation.

- In Shibuya, benches, open lawns, shaded areas, and flexible park design allow residents and youth to linger, gather, and appropriate spaces informally.

2. Repeated behaviors generate vitality:

- Repeated vending, pedestrian flows, and festival activity in Shanghai produce nighttime vibrancy measurable in trips, consumption, and dwell times.
- In Shibuya, repeated park visits, social meetups, and informal activities generate persistent vitality even in micro-parks with limited formal programming.

3. Feedback between vitality and governance/space:

- Shanghai's policy interventions demonstrate a direct feedback loop: temporary permissions and supportive measures encourage behavior, which justifies continued regulatory support.
- In Shibuya, informal appropriation reinforces the perceived value of parks, encouraging municipal investment in maintenance and programming without explicit regulation of behavior.

6.2 Comparative Insights

Table 4:

Dimension	Shanghai Alley Vendors	Shibuya Mini-Parks	Comparative Insight
Form of Informality	Mobile, economic, temporally bound	Stationary, social-cultural, spatially bound	Vitality arises in both cases from repeated behavior interacting with space, not from form itself
Governance Interaction	Policy-driven reintroduction (2023–2025)	Informal appropriation within designed spaces	Both show that regulation or design alone cannot generate vitality; repeated behaviors are critical
Temporal Dynamics	nighttime peaks, festival-linked surges	Daily, seasonal, and event-driven rhythms	Emergent vitality is temporally adaptive, shaped by behavior patterns and spatial affordances
Spatial Affordances	Street width, permeability, lighting	Seating, shaded corners, open lawns	In both contexts, the micro-spatial environment enables, channels, and amplifies behaviors
Metrics	Night trips, consumption, vendor counts	Mobile visitation, dwell times, pedestrian velocity	Quantitative and behavioral indicators converge to show vitality as emergent

6.3 Key Interpretive Points

1. Vitality is emergent, not injected: Neither Shanghai's regulations nor Shibuya's park design alone generate vitality. Vitality emerges from the iterative enactment of behaviors in spaces that can accommodate them.
2. Informality is a generator, not a nuisance: Both mobile vending and informal park appropriation illustrate that bottom-up practices sustain and amplify urban vibrancy.
3. Behaviour–space feedback loops: In both cities, repeated behaviours reinforce the spatial form, and vitality signals, in turn, justify adaptive governance or maintenance interventions.
4. Universality of the coupling mechanism: Despite cultural, functional, and governance differences, the underlying coupling dynamics are consistent: affordances → behaviours → vitality → reinforcement/adaptation.

6.4. Implications for Theory

- Urban vitality studies should shift from design-deterministic models to frameworks that integrate behavioural feedback and informal practices.
- Micro-space design and governance should be conceived not as a means to control activity, but as a platform for enabling adaptive behaviours.
- Recognizing informal practices as infrastructure allows cities to co-produce vitality, balancing flexibility, regulation, and social agency.

7. POLICY IMPLICATIONS

The comparative analysis of Shanghai's alleyway vending and Shibuya's mini parks underscores that supporting emergent vitality requires adaptive governance rather than rigid control. **Policy implications can be grouped into three main areas**

7.1. Recognize Informality as Infrastructure

- Informal behaviors vending, lingering, and social gatherings function as mechanisms of urban life, sustaining vitality in ways formal planning cannot fully anticipate.
- Cities should shift from treating informality as

a nuisance toward acknowledging it as a co-productive component of vibrant micro-spaces.
- Example: Shanghai's 2023–2025 temporary vending permissions demonstrate how policy can legitimize and channel informal activity, producing measurable increases in nighttime trips, consumption, and pedestrian flows.

7.2. Design Micro-Spaces to Enable Behaviour

- Spatial affordances street width, seating, shaded areas, permeability, and open lawns are necessary conditions for behaviors that generate vitality.
- Flexible and adaptable micro-space design encourages diverse and repeated use without prescribing exact activities.
- Example: Shibuya's mini parks show that even modest interventions (benches, flexible lawns, shaded corners) allow residents and youth to appropriate space for social, recreational, and cultural purposes, sustaining emergent vitality.

7.3. Employ Feedback-Informed Governance

- Policy and design should be iterative and responsive, informed by behavioral and mobility data rather than relying solely on prescriptive plans.
- Behavioral monitoring through anonymized mobility data, pedestrian counts, or event observations can guide adaptive interventions, such as temporary permissions, small infrastructure enhancements, or seasonal programming.
- Example: In Shanghai, repeated success of festival vending zones justified expansion to other districts, demonstrating a positive feedback loop between informal behavior and supportive governance.

7.4. Temporal and Cultural Sensitivity

- Emergent vitality is time-sensitive: peaks often occur at night, during weekends, or around seasonal events. Policies should accommodate these rhythms rather than imposing rigid restrictions.
- Cultural practices shape informal usage: local understanding of how residents, youth, or vendors interact with micro-spaces is critical for policy success.
- Example: Shibuya's seasonal events and youth culture contribute to temporal patterns of park usage, illustrating the importance of culturally attuned governance and design.

7.5. Caution Regarding Causality

While observed correlations (e.g., post-2023 increases in Shanghai nighttime activity) suggest a positive effect of supportive policy, causation cannot be definitively established without quasi-experimental designs or longitudinal vendor-level data. Policies should therefore be iteratively tested and adjusted, rather than assuming direct linear effects.

Summary of Policy Principles:

1. Treat informality as valuable infrastructure rather than disruption.
2. Design micro-spaces to enable, not prescribe, behaviors.
3. Implement feedback-informed, adaptive governance using real-time behavioral insights.
4. Align interventions with temporal and cultural patterns of local users.
5. Recognize the limits of causality and adopt iterative evaluation.

This policy framework encourages cities to co-produce vitality by supporting emergent behaviors, rather than attempting to impose it top-down.

8. CONCLUSION

This study demonstrates that urban vitality is an emergent property arising from repeated, observable behaviors interacting with micro-spatial characteristics, rather than a fixed attribute delivered solely through design or top-down regulation.

By examining Shanghai's alleyway street vending and Shibuya's mini parks, the study identifies a behavior–vitality coupling mechanism that operates across distinct forms of informality

1. Micro-spatial affordances enable behavior: Streets, alleys, benches, shaded corners, and open lawns create conditions for lingering, vending, and social interaction.
2. Repeated behaviors generate vitality: The recurrence of informal practices whether mobile economic activity in Shanghai or social-cultural appropriation in Shibuya produces measurable indicators of urban vibrancy, including pedestrian flows, dwell times, and social clustering.
3. Feedback reinforces and adapts space and governance: Vitality signals attract further behaviors, justify policy adjustments, and encourage ongoing spatial adaptation, creating a dynamic loop that sustains urban life.

8.1. Key Findings

- Vitality is behavior-driven, not form- or regulation-driven.
- Informality far from being marginal is a critical

generator of emergent urban life.

- Micro-spaces serve as both platforms and lenses for observing how bottom-up behaviors interact with spatial form.
- The mechanism is universal across cultural and spatial contexts, though its expression depends on local governance, cultural norms, and temporal rhythms.

8.2. Implications for Theory and Practice

Theoretically, the behavior–vitality coupling framework reframes urban vitality as a dynamic, negotiated, and emergent property, bridging studies of micro-spatial design, informal practices, and urban governance.

Practically, cities should adopt adaptive, feedback-informed governance, design micro-spaces to enable behaviors rather than prescribe them, and recognize informal activities as infrastructure for urban life.

In conclusion, urban vitality cannot be delivered; it must be co-produced. By supporting repeated, observable behaviors in conducive micro-spatial settings, planners and policymakers can nurture sustainable, inclusive, and resilient urban vibrancy even in the densest and most regulated cities. Shanghai and Shibuya illustrate two distinct but fundamentally aligned pathways for achieving this outcome, highlighting the central role of behavior–space coupling in shaping contemporary East Asian urban life.

REFERENCES

Jiang, Y., & Huang, Z. (2024). Evaluating the impact of urban morphology on urban vitality: an exploratory study using big geo-data. International Journal of Digital Earth, 17(1), 1–20. https://doi.org/10.1080/17538947.2024.2327571 Taylor & Francis Online

Li, S., Ye, Y., Chen, H., Yang, Y., Huang, Y., & Wu, Z. (2024). Vitality analysis and improvement of micro urban spaces in cold regions: evidence from Harbin, China. International Review for Spatial Planning and Sustainable Development, 12(3), 95–117. https://doi.org/10.14246/irspsd.12.3_95 J-STAGE

Shanghai Government. (2023, July). Shanghai improves management for stalls and street vendors in public areas. Shanghai Municipal Government News Shine

Shanghai Government. (2025, April). Temporary street vending to be allowed during major festivals. Shanghai Municipal Government News Shanghai Government

Sennett, R. (2023). The unplanned city: public space and the spatial character of urban informality. Emerald Insight. https://doi.org/10.1108/EOR-05-2023-0007

China Daily (2025). Shanghai nighttime consumption grows. https://global.chinadaily.com.cn/a/202507/29/WS6888aa6ba310c26fd717c56e.html

Shanghai Gov (2025). Shanghai ranks first on national Night Economy Index. https://english.shanghai.gov.cn/en-Latest-WhatsNew/20250730/091f98b252e64d7ba77daccc9656bafa.html

Shanghai Statistics Bureau (2023). Night Festival boosted travel. https://en.sww.sh.gov.cn/2023-06/29/c_426173.htm

Shanghai Gov (2025). Policies for boosting commercial vitality. https://english.shanghai.gov.cn/en-Policies/20250708/7b633196267a4c1f87ede0c6d726bede.html

Hu Min, Shanghai improves management for stalls and street vendors in public areas, July 5, 2023, Publisher: SHINE News https://www.citynewsservice.cn/shine/2ad5d807-f3c1-4026-8818-66ecfd906d67

Zhang, Zhonghao & Zhang, Yusi & He, Tian & Xiao, Rui. (2022). Urban Vitality and its Influencing Factors: Comparative Analysis Based on Taxi Trajectory Data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing. 15. 1-13. 10.1109/JSTARS.2022.3183176.

Jiang, Y., Huang, Z., Zhou, X., & Chen, X. (2024). Evaluating the impact of urban morphology on urban vitality: an exploratory study using big geo-data. International Journal of Digital Earth, 17(1). https://doi.org/10.1080/17538947.2024.2327571

Zhang, Fan & Salazar Miranda, Arianna & Duarte, Fábio & Vale, Lawrence & Hack, Gary & Chen, Min & Liu, Yu & Batty, Michael & Ratti, Carlo. (2024). Urban Visual Intelligence: Studying Cities with Artificial Intelligence and Street-Level Imagery. Annals of the American Association of Geographers. 114. 1-22. 10.1080/24694452.2024.2313515.

Shuqi Li, Yang Ye, Haoyu Chen, Yuhan Yang, Yi Huang, Zihao Wu, Vitality Analysis and Improvement of Micro Urban Spaces in Cold Regions, International Review for Spatial Planning and Sustainable Development, 2024, Volume 12, Issue 3, Pages 95-117, Released on J-STAGE July 15, 2024, Online ISSN

2187-3666,https://doi.org/10.14246/irspsd.12.3_95,
https://www.jstage.jst.go.jp/article/irspsd/12/3/12_6/_article/-char/en

Liu G, Lei J, Qin H, Niu J, Chen J, Lu J, Han G. Impact of environmental comfort on urban vitality in small and medium-sized cities: A case study of Wuxi County in Chongqing, China. Front Public Health. 2023 Feb 6;11:1131630. doi: 10.3389/fpubh.2023.1131630. PMID: 36815149; PMCID: PMC9939896.

Etzold, Benjamin & Hossain, Md & Rahman, Sania. (2013). Street Food Vending in Dhaka: Livelihoods of the Urban Poor and the Encroachment of Public Space.

Roever, S., & Skinner, C. (2016). Street vendors and cities. Environment & Urbanization, 28(2), 359-374. https://doi.org/10.1177/0956247816653898 (Original work published 2016)

Ginsberg, Yona. (2020). Richard Sennett: Building and dwelling: ethics for the city: Penguin Books, 2019, 368 pp., ISBN: 9780141022116. Journal of Housing and the Built Environment. 35. 10.1007/s10901-020-09759-z.

Zhang, Hui & Kiyai, Gregory. (2024). Pocket Parks in Urban Design: Enhancing Urban Environment and Community Well-being. Highlights in Art and Design. 5. 7-12. 10.54097/7xey6r07.

Wang, Fang & Li, Jianing & Yu, Fengyao & He, Hao & Zhen, Feng. (2018). Space, function, and vitality in historic areas: The tourismification process and spatial order of Shichahai in Beijing. International Journal of Tourism Research. 20. 10.1002/jtr.2185.

Zhou, Yichun & Guan, Chenghe & Wu, Longfeng & Li, Ying & Nie, Xuanyi & Song, Jihoon & Kim, Seung & Akiyama, Yuki. (2024). Visitation-based classification of urban parks through mobile phone big data in Tokyo. Applied Geography. 167. 103300. 10.1016/j.apgeog.2024.103300.

Yi, C., Wang, Z., Wei, Y., Chen, X., Yan, W., & Jiang, M. (2025). Study on the Coupling Degree of Urban Virtual and Substantive Vitality from the Perspective of "Scale-Vitality"—Taking the Changsha-Zhuzhou-Xiangtan Metropolitan Area as an Example. Sustainability, 17(11), 5059. https://doi.org/10.3390/su17115059