



**Politecnico  
di Torino**

## **Honors Thesis**

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**Master's degree Science in Architecture Construction City**

**Abstract**

**Reimagining Informal Markets: A Parametric Framework for Eliava Bazaar's  
Regeneration**

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Informal markets represent complex urban ecosystems that embody social resilience, economic adaptability, and cultural continuity. Despite their vital role in many post-socialist and developing cities, they are often perceived as chaotic, inefficient, and incompatible with contemporary urban planning standards. Conventional regeneration approaches typically impose rigid formal structures that disrupt existing socio-spatial dynamics, resulting in the loss of cultural identity and local economic networks. This thesis challenges such approaches by proposing a parametric and self-organized framework for the regeneration of Eliava Bazaar, one of the most significant informal marketplaces in Tbilisi.

Eliava Bazaar operates as a self-regulated urban organism. Over time, it has evolved through incremental adaptations driven by vendors' needs, material availability, economic pressures, and spatial negotiation. Its morphology is not random but emergent, shaped by localized decisions and continuous micro-transformations. However, the absence of infrastructural coherence, spatial hierarchy, environmental performance, and regulatory integration has limited its urban potential and long-term sustainability. The central research question of this thesis is therefore: How can parametric design methodologies reinterpret and reorganize informal market systems without suppressing their inherent self-organized logic?

The research adopts a multidisciplinary methodology combining urban analysis, morphological mapping, socio-spatial observation, parametric modeling, and systems theory. The study begins with a historical and urban investigation of Eliava Bazaar, examining its formation within the post-Soviet economic transition and its relationship to Tbilisi's broader urban structure. Through spatial mapping and typological classification, the bazaar's internal logic—circulation patterns, clustering mechanisms, material assemblages, and adaptive construction strategies—is identified and translated into generative parameters.

Rather than replacing informality with imposed order, the thesis interprets the bazaar as a bottom-up system governed by dynamic rules. Concepts derived from complexity theory and self-organization are employed to understand how decentralized interactions produce coherent spatial patterns. These principles are then embedded into a parametric framework that operates not as a fixed masterplan but as a responsive design system. The framework integrates variables such as density gradients, circulation intensity, accessibility, environmental exposure, structural modularity, and commercial adjacency relationships.

Using parametric tools, a series of simulations and spatial scenarios are developed to test how incremental interventions can improve environmental performance, spatial legibility, and infrastructural integration while maintaining flexibility. The resulting proposal introduces a layered strategy: infrastructural consolidation at the macro scale, modular adaptability at the meso scale, and vendor-driven customization at the micro scale. This multi-scalar approach ensures that regeneration does not erase informality but reorganizes it into a more resilient and sustainable urban condition.

The thesis contributes theoretically by reframing informal markets as complex adaptive systems rather than planning anomalies. It argues that parametric design, often associated with formal expression, can instead function as an analytical and organizational tool capable of encoding social and economic behaviors into spatial logic. By translating informal growth patterns into adjustable parameters, the proposed framework establishes a bridge between bottom-up urbanism and top-down planning mechanisms.

Practically, the research offers a transferable methodology for the regeneration of informal markets in similar contexts. Instead of applying universal formal solutions, the framework allows site-specific calibration based on local dynamics. It proposes an urban strategy that balances regulation and spontaneity, structure and adaptability, permanence and transformation.

Ultimately, this thesis positions Eliava Bazaar not as a problem to be corrected but as a living urban laboratory. Through a parametric reinterpretation of its self-organized structure, the project demonstrates that informality can be reorganized without being neutralized. The regeneration strategy preserves cultural continuity while introducing spatial coherence, environmental responsiveness, and infrastructural efficiency. In doing so, it proposes a new paradigm for engaging with informal urban systems—one that acknowledges complexity as an asset and design as a mediator between order and emergence.

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