

Creative-Innovation District Synergies: Catalysts for Economic Development

Elina Mikelsone^{1*}

¹ Riga Technical University, Latvia

*Corresponding Author: elina.mikelsone@rtu.lv

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ABSTRACT

This article investigates the economic impact of creative and innovation districts, focusing on their synergies and disparities. The study addresses the scientific gap in comparative analysis and aims to develop a structured framework for evaluating the districts' contribution to urban and economic development. A mixed-method approach was employed, combining a comprehensive literature review with case study analysis (n=8, Latvia). The research revealed that synergical districts—those that integrate creative and innovation functions. Creative and innovation districts can be evaluated using three main indicator groups: economic performance, innovation and social impact, and policy, infrastructure, and sustainability. Limited availability of longitudinal data and geographic scope (Latvia) may constrain broader generalizability. Future studies could incorporate big data analytics and comparative international analysis. The findings support policy development, infrastructure planning, and investment decisions aimed at fostering creative-innovation synergies. The study offers a novel comparative perspective and proposes a structured evaluation framework, addressing a significant gap in existing literature.

Keywords: Urban Economic Development, Creative Industry Districts, Innovation Districts, Synergical Districts, Economic Impact Evaluation

INTRODUCTION

Urban centers are increasingly recognized as pivotal engines of economic growth and innovation. Within these urban landscapes, the emergence of creative and innovation districts has garnered significant attention for their potential to drive economic development, foster cultural enrichment, and enhance social cohesion.

Creative industry districts, characterized by the clustering of sectors such as arts, design, media, and entertainment, contribute substantially to the economic vitality of cities. For instance, studies have demonstrated that these districts are linked to employment and wage growth in various urban areas, underscoring their role in urban economic expansion (Lee & Rodríguez-Pose, 2014).

Concurrently, innovation districts—geographic areas where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators, and accelerators—have emerged as catalysts for regional economic development. These districts facilitate the convergence of research, entrepreneurship, and commercialization, thereby promoting job creation and investment attraction (Katz & Wagner, 2014).

The synergy between creative and innovation districts presents a compelling paradigm for urban development. By integrating cultural and technological assets, these synergical districts can maximize economic potential and foster sustainable urban growth. The 22@Barcelona project exemplifies this integration, transforming a former industrial area into a vibrant hub for technology and creativity, thereby contributing significantly to the city's economic and social revitalization (Vicente, 2018).

Despite a growing body of literature highlighting the significance of both innovation districts (IDs) and creative districts (CIDs) in advancing urban development, a notable scientific gap persists in the comparative evaluation of their economic impacts. While numerous studies have examined IDs through various lenses—including output-oriented metrics (Fastenrath et al., 2023) such as patents and knowledge-intensive job growth

(Mittal et al., 2020; Kiuru & Inkinen, 2017; Edmunds et al., 2019), as well as input-oriented indicators like R&D spending and academic outputs—there remains limited integration of CIDs within these evaluative frameworks. Furthermore, although a third approach centered on ‘place quality’ (Esmailpoorarabi et al., 2018; Pancholi et al., 2020) is gaining traction within urban planning, it has yet to be systematically applied in comparative studies across both district types. This gap is significant, given that CIDs and IDs often operate under different organizational logics and spatial dynamics, yet potentially yield overlapping contributions to urban resilience, creativity, and economic vitality. A unified framework—particularly one incorporating both ‘place quality’ and selected output-oriented indicators like growth in knowledge-intensive employment—could provide a more comprehensive basis for analysis. Addressing this gap is essential for urban policymakers and planners seeking to strategically leverage the distinct yet complementary potentials of creative and innovation districts.

This study aims to analyze the economic impact of creative and innovation districts by identifying their synergies, disparities, and parities. Through a comprehensive examination of these districts, the research seeks to develop a structured framework for evaluating their role in urban economic development, thereby providing insights that can inform policy and strategic planning.

METHODOLOGY AND THEORETICAL FRAMEWORK

This chapter outlines the qualitative research methodology employed to investigate the synergies and disparities between creative and innovation districts, aiming to develop a structured framework for evaluating their contributions to urban economic development.

Creative Industry District: A designated urban area where creative industries—such as arts, design, media, and entertainment—cluster to stimulate economic growth, cultural development, and innovation through collaboration. These districts leverage the concentration of creative professionals and organizations to foster a vibrant environment that enhances local economies and cultural landscapes. Silva et al. (2023) highlight the significance of creative industries in regional development.

Creative districts are portrayed as vital engines of innovation, where diverse actors—including artists, designers, tech entrepreneurs, and cultural organizations—interact within a shared space that encourages creativity and cross-sector collaboration (Landry, 2000; Evans, 2009). The authors argue that this convergence of talent and ideas generates a fertile ground for experimentation, ultimately leading to the emergence of new cultural products, services, and business models. Moreover, they stress that creative districts often play a transformative role in urban regeneration processes, particularly in post-industrial or neglected urban areas. By attracting investment, improving the public realm, and fostering a renewed sense of community identity, such districts can help reverse patterns of economic stagnation and social disengagement. Landry (2000) and Evans (2009) present creative districts not only as cultural assets but also as strategic tools for inclusive and sustainable urban renewal.

Innovation District: A geographically defined area where anchor institutions, such as universities and research organizations, collaborate with startups, business incubators, and other entities to drive technological advancements, economic development, and knowledge exchange. These districts are characterized by their compact, transit-accessible nature and their emphasis on fostering an ecosystem conducive to innovation and entrepreneurship. Katz and Wagner (2014) describe innovation districts as the manifestation of mega-trends altering the location preferences of people and firms, reconceiving the link between economy shaping, place making, and social networking.

These definitions encapsulate the core characteristics of both district types, reflecting their roles in promoting economic and cultural vitality within urban settings.

The study adopts a qualitative multiple case study design, which facilitates an in-depth, contextual analysis of complex phenomena within real-life contexts (Yin, 2018). This approach is particularly suitable for exploring the nuanced dynamics of creative and innovation districts and allows for the identification of patterns across diverse cases while preserving the uniqueness of each setting.

A comprehensive literature review was conducted, focusing on peer-reviewed articles indexed in Scopus. The review encompassed topics such as urban innovation systems, the creative economy, and place-based development strategies. This process not only established a theoretical foundation for the study but also identified existing gaps in the literature. For instance, Rodríguez-Insuasti et al. (2022) provided insights into the global research trends in the creative economy, highlighting the need for localized studies that consider specific urban contexts.

Eight case studies were purposefully selected from various regions in Latvia, representing both creative and innovation districts. The selection criteria included:

- **Type:** Inclusion of districts focused on creative industries (e.g., arts, design) and those centered on technological innovation.
- **Geographical Diversity:** Representation from different urban areas to capture regional variations.

- **Development Stage:** A mix of established and emerging districts to understand developmental trajectories.
- **Policy Relevance:** Districts identified as priorities in national or municipal development plans.

This deliberate sampling strategy ensured a comprehensive analysis of varying district models and their respective impacts on urban development.

Data collection involved multiple qualitative methods:

- **Semi-Structured Interviews:** Conducted with key stakeholders, including district administrators, entrepreneurs, policymakers, and community leaders. These interviews aimed to capture diverse perspectives on the districts' objectives, challenges, and contributions to local economies.
- **Document Analysis:** Review of strategic plans, policy documents, and development reports related to each district. This provided contextual understanding and supplemented interview data.

The combination of these methods allowed for data triangulation, enhancing the validity and reliability of the findings (Creswell & Poth, 2018).

Thematic analysis was employed to identify and interpret patterns within the qualitative data. An initial coding framework was developed based on the literature review, which was then refined through inductive coding of the interview transcripts and documents. Cross-case analysis facilitated the comparison of themes across different districts, revealing commonalities and distinctions.

To structure the evaluation of the districts, a three-pillar framework was developed:

- **Economic and Financial Indicators:** Assessing economic contributions such as employment rates and investment levels.
- **Innovation and Social Impact:** Evaluating the presence of innovation activities and their social implications.
- **Policy, Infrastructure, and Sustainability:** Examining the policy environment, infrastructural support, and sustainability initiatives.

This framework provided a systematic approach to analyze 2 main research questions.

RQ1: How do creative industry and innovation districts compare in terms of their economic impact?

This research question seeks to explore the differential and intersecting economic contributions of creative industry districts and innovation districts. Both district types represent strategic urban models aimed at catalyzing economic development through spatial clustering and knowledge exchange; however, they operate in distinct sectors and attract different types of talent, capital, and institutional support.

Recent research emphasizes that creative industry districts primarily contribute through cultural and artistic value chains, fostering tourism, entrepreneurship, and cultural capital (Silva et al., 2023; Rodríguez-Insuasti et al., 2022). In contrast, innovation districts are known for driving technological advancement, employment in STEM sectors, and commercialization of research.

A comparative analysis is essential because these districts often coexist or overlap within urban ecosystems, and understanding their unique and shared impacts can inform more strategic policymaking and investment decisions (Fastenrath et al., 2023). This research contributes to the growing body of literature by empirically examining both types of districts using consistent indicators, such as employment generation, investment attraction, and business growth.

RQ2: What structured framework can be developed to evaluate the economic impact?

The second research question addresses a clear gap in the literature: the absence of a unified and multidimensional framework to assess the economic performance of both creative and innovation districts. Existing evaluation models are often sector-specific or fail to capture the complex socio-economic and institutional dynamics at play.

Studies suggest that comprehensive assessment tools should integrate financial, social, and infrastructural dimensions to reflect the multidimensional nature of district-based development (Carayannis et al., 2022; Zandiatashbar & Kayanan, 2020).

RESULTS

RQ1 How do Creative Industry and Innovation Districts Compare in terms of their Economic Impact? (Literature Review)

This study employed a mixed-methods approach, integrating qualitative case study analysis with a structured literature review to develop a robust framework for evaluating the economic impact of urban districts. To construct this analytical model, a systematic bibliometric search was conducted using the Scopus database, targeting the keywords “creative district” and “innovation district” within the title, abstract, or keywords fields. The search yielded a total of 1,518 documents for creative districts and 5,737 documents for innovation districts, indicating a more extensive scholarly focus on innovation-driven urban models, while also confirming the rising academic interest in creative-led urban transformation. The multidisciplinary nature of the results—spanning fields such as

social sciences, arts and humanities, business, and environmental studies—underscores the relevance of a cross-sectoral evaluation framework.

A bibliometric analysis of the term “creative district” using the Scopus database (searching within the title, abstract, and keywords) yielded 1,518 documents published between 1960 and 2025. The data reveal a steep increase in scholarly interest over the past two decades, with a notable surge beginning around 2010. Annual publication rates rose significantly from 40 documents in 2010 to over 120 publications annually between 2019 and 2024, peaking at 129 in 2020 and 122 in 2024, indicating sustained and growing academic engagement. The dominant publication types are journal articles (70.5%), followed by conference papers (11.3%), and book chapters (10.9%), reflecting both academic rigor and conceptual diversity in the field. In terms of disciplinary focus, the most prominent subject areas are Social Sciences (34.5%), Arts and Humanities (9.9%), Environmental Science (7.9%), Engineering (7.5%), and Business, Management and Accounting (6.6%). This multidisciplinary distribution confirms that creative districts are studied not only from an economic and planning perspective but also through cultural, ecological, and social lenses.

Geographically, the United States, Australia, Indonesia, and the United Kingdom are the leading contributors, showing a global distribution of research with both Global North and Global South representation. Among top institutional contributors are the University of Toronto, Universitas Sebelas Maret, and the University of Melbourne, highlighting strong academic networks in both the Anglosphere and Asia-Pacific regions.

Overall, the data underscore that “creative district” has evolved into a well-established and dynamically growing research field, with increasing relevance to urban studies, innovation policy, sustainability, and cultural development. This bibliometric profile justifies its inclusion as a central concept in comparative evaluations of urban economic and social transformation.

A Scopus-based bibliometric analysis using the keyword “innovation district” (searched within title, abstract, and keywords) yielded a total of 5,737 documents published between 1938 and 2025, indicating a long-standing and rapidly expanding research focus. The trend demonstrates exponential growth in academic interest, particularly from 2010 onwards, when annual outputs began consistently exceeding 100 publications. The highest yearly outputs were recorded in 2024 (549 documents) and 2023 (465 documents), reflecting the field’s increasing prominence in global urban and economic development research agendas. In terms of document types, journal articles dominate the corpus (69.4%), followed by conference papers (15.8%), and book chapters (7.4%), signaling both scholarly depth and multidisciplinary engagement. Unlike the “creative district” literature, which leans more heavily toward social and cultural disciplines, the “innovation district” corpus has a broader scientific and technical orientation. The leading subject areas include Social Sciences (22.2%), Environmental Science (10.8%), Engineering (9.0%), Medicine (8.5%), and Business and Management (8.4%). This distribution reflects the complex nature of innovation districts, which often combine physical infrastructure with policy, sustainability, and R&D systems.

Globally, the research is led by contributions from the United States, Russia, China, the United Kingdom, and Italy, with strong academic representation from institutions such as the London School of Economics, Russian Academy of Sciences, and University College London. Among prolific authors, Tan Yigitcanlar, Francesco Belussi, and José-Luis Hervás-Oliver stand out for their sustained contributions to innovation ecosystems, spatial planning, and regional competitiveness.

The dramatic increase in publication volume, coupled with the thematic and disciplinary breadth, underscores the innovation district’s relevance as a global urban development paradigm. Compared to creative districts, innovation districts show a higher degree of technical complexity and institutional engagement, which justifies the application of a multidimensional evaluation framework that captures both technological-economic outcomes and governance-performance dimensions. These findings validate the inclusion of innovation districts as a distinct category in the comparative framework developed in this study and highlight the growing importance of place-based innovation strategies in shaping urban futures.

Drawing from this literature base, Table 1 presents a comparative conceptual framework that distinguishes between three major types of urban districts: Creative Industry Districts, Innovation Districts, and Synergical Districts (which combine creative and innovation-driven components). Each category is analyzed across seven key dimensions identified through the literature: Economic Impact, Sectoral Focus, Key Synergies, Funding & Investment Sources, Talent & Workforce Development, Urban Regeneration & Place-Making, and Economic Growth Trajectory.

Table 1. *Literature Review Results: RQ1*

Aspect	Creative Industry Districts	Innovation Districts	Synergical Districts (Creative + Innovation)
Economic Impact	Contribute through cultural industries	Drive economic growth through tech startups	Combine cultural and tech-driven industries to maximize

	s, tourism, and place-making strategies.	, corporate R&D, and high-skilled job creation.	e economic diversification and resilience.
Sectoral Focus	Focus on cultural and artistic industries (design, media, performing arts).	Focus on technology, research, and business innovation.	Integrate creative and technology sectors to foster cross-industry innovation.
Key Synergies	Enhance innovation through design thinking, digital media, and interdisciplinary collaboration.	Leverage technological advancements (AI, VR, data analytics) to enhance creative industries.	Enhance innovation through interdisciplinary collaboration, leveraging both design thinking and emerging technologies.
Funding & Investment Sources	Rely on public grants, cultural sponsorships, and tourism revenue.	Attract venture capital, corporate partnerships, and government R&D funding.	Utilize a mix of public grants, venture capital, corporate sponsorships, and R&D funding.
Talent & Workforce Development	Attracts creative professionals, fostering collaboration between arts, business, and academia.	Attracts STEM professionals, fostering knowledge transfer and business incubation.	Attract diverse talent pools, promoting knowledge exchange between creatives, technologists, and business leaders.
Urban Regeneration & Place-Making	Revitalize urban areas through cultural vibrancy, attracting businesses and residents.	Transform underutilized spaces into tech hubs, integrating research institutions and enterprises.	Develop holistic urban ecosystems that blend cultural vibrancy with high-tech infrastructure.
Economic Growth Trajectory	Build long-term economic resilience through cultural heritage and tourism.	Scale rapidly with high-tech investments and global market expansion.	Achieve sustainable and scalable economic growth by merging cultural creativity with technological advancements.

The literature underscores that creative industry districts generate economic value primarily through cultural production, tourism, and urban revitalization, emphasizing experiential economies and place-making strategies (Sim, 2019; Liu & Ruming, 2024). These districts typically concentrate on sectors such as design, media, and performing arts, supported by public funding, cultural grants, and event-based income streams (Pancholi et al., 2020; Drucker, 2024; Arenas et al., 2020). Their contributions to urban regeneration are widely recognized, as they often transform derelict areas into vibrant cultural quarters, enhancing social cohesion and identity (Esmailpoorarabi & Yigitcanlar, 2023; Pique et al., 2019).

Conversely, innovation districts are designed to accelerate technology-led growth, often anchored by research institutions and high-tech firms. They contribute to regional economies through startup formation, corporate R&D, and the creation of high-skilled jobs, frequently supported by venture capital, government R&D programs, and university-industry collaborations (Mittal et al., 2020; Edmunds et al., 2019; Krishna, 2019). Their sectoral focus includes ICT, biotech, clean tech, and advanced manufacturing—fields that thrive on knowledge exchange and institutional partnerships (Kiuru & Inkinen, 2017; Morisson, 2019; Yigitcanlar & Inkinen, 2019).

Emerging in the literature and reinforced by the case study findings is the concept of synergical districts—urban areas that strategically combine creative and innovation assets. These hybrid districts leverage interdisciplinary collaboration and blend design thinking with technological development, offering a model for economic diversification and resilience (Fastenrath et al., 2023; Carayannis et al., 2022; Gadecki et al., 2023; Mozaffarian et al., 2024). Such districts attract diverse talent pools, ranging from creatives to engineers, and promote inclusive ecosystems that support both cultural identity and innovation capacity (Cohendet et al., 2022; Liu & Ruming, 2024; Pujinda & Sanit, 2022). They also reflect integrated investment strategies, combining public grants, private capital, and research funding to build infrastructure and foster dynamic urban environments (Zandiatashbar & Hamidi, 2022; Zhao et al., 2022).

In terms of economic growth trajectories, creative districts tend to grow organically and steadily, rooted in local culture and community capital (Arenas et al., 2020; Drucker, 2024). Innovation districts often scale more rapidly due to technological and market-driven forces (Krishna, 2019; Esmailpoorarabi & Yigitcanlar, 2023). Synergical districts, by integrating both, represent a sustainable growth model, capable of adapting to disruptions while fostering long-term competitiveness and livability (Sim, 2019; Yigitcanlar & Inkinen, 2019).

This tripartite framework provides a comprehensive lens for evaluating urban district performance and highlights the importance of contextualized, multi-dimensional assessment models for policy and planning (Fastenrath et al., 2023; Morisson, 2019; Pique et al., 2019).

RQ1 How do Creative Industry and Innovation Districts Compare in Terms of their Economic Impact? (Case Studies)

In interpreting the results of this case study, several important limitations must be acknowledged. The selection of case study areas—including Miera iela, Spīķeri, Jaunā Teika, and Lastādija—was intentionally made to illustrate the wide variety of district interpretations and development models present in Latvia. However, this diversity also introduces significant variation in contextual factors, limiting the comparability across cases. For example, the area surrounding Miera iela represents a fragmented urban quarter without a unified development strategy or a single managing stakeholder. Unlike locations such as Spīķeri or Jaunā Teika—both of which are controlled by a single owner or tenant and operate under coherent branding and planning—Miera iela exemplifies a loosely defined, organically evolved space with a diffuse identity and no overarching coordination. Furthermore, Lastādija illustrates a classic case of temporary urban use, with its current form not intended for long-term sustainability. These differences in ownership structures, planning approaches, and temporal stability must be taken into account when drawing broader conclusions from the study, as they significantly affect the dynamics of spatial transformation, stakeholder engagement, and place identity. All cases were analysed based on following criteria:

- Economic Impact
- Sectoral Focus
- Key Synergies
- Funding & Investment Sources
- Talent & Workforce Development
- Urban Regeneration & Place-Making
- Economic Growth Trajectory

Case 1 Miera Iela

Miera iela is a district full of cultural energy and creative potential, but its economic impact remains modest for now. It contributes little to overall GDP and productivity, though it shows promising signs with strong employment growth and a steady stream of new businesses. Investment and funding are limited, which is holding back its ability to scale. However, the district shines in its creative sector, especially in design, innovation, and community-driven culture. High levels of participation in cultural events and strong diversity make it a vibrant place to live and work. One of the biggest challenges is turning this creative momentum into sustainable economic growth. Right now, collaboration between public institutions, private investors, and the community is weak, and basic infrastructure like co-working spaces and digital access needs improvement. If these gaps are addressed, there's real potential to build stronger synergies and unlock new opportunities. Talent retention is another area that needs attention. Although Miera iela is inclusive and socially engaging, it struggles to keep creative and skilled professionals. Improving housing, education, and career opportunities would help anchor talent long-term. With its strong sense of identity, community engagement, and quality of life, Miera iela has everything it needs to become a standout creative district. What it lacks in economic output today, it can make up for through smart investment, better collaboration, and infrastructure upgrades. If these areas are developed, Miera iela could become a model for sustainable, inclusive urban regeneration rooted in creativity.

Case 2 Lastādija Kvartāls

The Lastādija Quarter is a vibrant hub of alternative culture and creative entrepreneurship located in the center of Riga. It attracts both local and international visitors through a mix of retail, catering, and tourism services, while generating economic activity via micro-enterprises, cultural events, and social entrepreneurship. The quarter features spaces like Zephyr, an alternative music and performance venue; the Hobby Studio "3 Sisters," which offers workshops and masterclasses; and DAD Café, a community venue hosting regular cultural evenings. Though located outside the quarter, Kaņepes Culture Centre frequently collaborates with Lastādija. The district focuses on visual arts, experimental music, graphic design, sustainable living, DIY culture, and social entrepreneurship, fostering strong networks between artists, businesses, and the local community through community-led initiatives. Design thinking informs its events and exhibitions, often developed in partnership with universities and creative platforms such as RTU Design Factory, ISSP, and Free Riga. Funding is sourced from EU programs like Creative Europe, LEADER projects, the State Culture Capital Foundation (SCCF), Riga City Council, and private sponsors like Printify and KALVE Coffee. As an informal incubator for young creatives, the quarter supports talent through workshops, mentoring, and collaboration with students from the Art Academy of Latvia, emphasizing a learning-

by-doing model rather than structured training. Once partially abandoned, the area has been regenerated through community-driven placemaking efforts, including the creation of co-creation spaces, murals, public gardens, and temporary installations—many supported by the Free Riga initiative. Economically, the quarter follows an organic growth model, avoiding aggressive commercialisation and prioritising sustainability, affordable spaces, and community engagement. Although some creatives have relocated, they often maintain ties and collaborations within Lastādija, reinforcing its role as a dynamic and resilient cultural ecosystem.

Case 3 Raiņa Kvartāls

Raiņa kvartāls in Cēsis, Latvia, is emerging as a dynamic center culture with significant social impact on the area. Located at the intersection of creative industries, technology, and education, the quarter propels sectoral growth through the convergence of design, digital media, and entrepreneurship. The key element of Raiņa Kvartāls is not so much about innovations or new developments, but rather about creating a space that enables smaller companies to grow, collaborate, and thrive in a creative and productive environment. Being surrounded by a variety of businesses fosters diversity, which in turn inspires new ideas and encourages unique collaborations that might not be possible in more conventional settings. The synergies primarily arise due to the collaboration between public institutions, private businesses, and the local public. Through them, they enhance innovation, interdisciplinary projects, and sustainable development goals. Raiņa kvartāls is a platform for events of culture, co-working spaces, and educational activities that foster creative and technological growth. The funding and investment sources are EU structural funds, national government subsidies, municipal investments, and private sector contributions. These funds provide stable development with scope for planning and infrastructure upgrade. Targeted innovation and social grants also support the quarter. Talent and workforce development is a key component of Raiņa kvartāls. Collaborations with local schools, universities, and vocational schools facilitate the creation of a skilled workforce that addresses the requirements of the future industry. Workshops and training sessions for creativity promote lifelong learning and youth engagement. As a driver of urban regeneration and place-making, Raiņa kvartāls redevelops underutilized urban space into vibrant community areas. This redevelopment stimulates local businesses and increases Cēsis's cultural status.

Overall, Raiņa kvartāls follows a steady economic growth trajectory, positioning itself as a regional leader in creative culture.

Case 4 Spīķeri

Spīķeru kvartāls in Riga is primarily cultural and creative hub. This place does not serve as a real research centre and does not pass on any formal knowledge. Nevertheless the quarter hosts creative offices - software and app developers, design and media agencies, along with start-ups and many creative entrepreneurs. Strong cultural engagement is key use, often hosting forums, markets, education and leisure events. The Spīķeru kvartāls is supported by city policies that allowed EU funding, PPPs, and is managed by the “Rīgas Spīķeri” foundation and “Spīķeru Nami” Ltd. Initially, the quarter’s transformation was driven by significant public investment. It was renovated with EU co-financing (~7 million €), and became a center for creative industries. In 2010–2016, the number of companies doubled (from 25 to 50), jobs increased (from 400 to 800), ensuring a moderate GDP contribution and local impact (European Commission, 2016). The quarter is mostly a local cultural-tourism and service zone, rather than a major exporter. In recent years, the Spīķeri Quarter has undergone significant improvement as part of the “Revitalization of the Degraded Territory” project. The project involved the reinforcement of the riverside wall, the creation of a waterfront promenade with a cycling path, the redevelopment of a pedestrian tunnel, public squares, as well as the installation of a skatepark along the nearby embankment (European Commission, 2016). It also includes the *Riga Ghetto Museum*, dedicated to education and tolerance, and intercultural dialogue. The central part of the quarter can be temporarily closed off. Although the area is open to everyone, some parts—especially commercial buildings—are still inaccessible to people with disabilities due to the historical nature of the structures. Spīķeri has some sustainable elements (underground waste bins, utilities, green space, restored historic buildings) (Spikeri, 2016). Unfortunately, there are no innovation-friendly regulations beyond standard Latvian/EU norms and it lacks data on energy efficiency and has no visible renewable energy initiatives.

Case 5 VEF

VEF Kvartāls, located in Riga’s Teika district, is a leading example of post-industrial regeneration through innovation and creativity. Formerly the site of the State Electrotechnical Factory, it has evolved into a vibrant business and cultural hub, contributing to Riga’s economy. The district’s economic impact includes job creation, entrepreneurship, and increased tourism. It supports a wide range of businesses—especially in ICT, media, green tech, and design—which form its sectoral focus. Flexible workspaces like TEIKUMS foster collaboration and growth. Key synergies arise through cooperation between tech firms, creative industries, and education institutions.

Events, co-working spaces, and cultural venues support cross-sector innovation. Funding and investment has come mostly from private developers such as STATS group. While the European Regional Development Fund contributed €3.8 million, public infrastructure investment has been limited, and the surrounding area still faces accessibility and quality issues. VEF Kvartāls supports talent development through training programs such as VEFRESH, university partnerships, and professional events, reinforcing its position as a hub for skill-building. The area's urban regeneration and place-making efforts blend historical preservation with modern function. Sustainable initiatives—like the installation of solar panels—reflect its green vision. With strong private backing and growing cultural relevance, VEF Kvartāls continues on a positive economic growth trajectory, serving as a model for sustainable, innovation-driven redevelopment.

Case 6 Jaunā Teika

Jaunā Teika is a leading innovation district in Riga, contributing to the local economy by attracting high-value companies, startups, and international businesses. It has transformed from an industrial zone into a modern urban center with strong economic activity.

The district specializes in ICT, smart technologies, creative industries, and business services. Major companies like Tet and Helmes, along with various startups, form a vibrant innovation ecosystem. Jaunā Teika promotes collaboration through co-working spaces, tech hubs, and regular networking events. Its proximity to Riga Technical University fosters academic-industry cooperation and research partnerships. Development has been driven by private investment (notably by Hanner), supported by EU structural funds and public-private partnerships, enabling long-term infrastructure and real estate growth. The district attracts skilled professionals with modern workspaces, quality housing, and lifestyle services. Partnerships with universities and training initiatives ensure a continuous talent pipeline. Jaunā Teika is a successful example of urban regeneration. Former industrial buildings are now sustainable offices and homes, surrounded by green spaces, smart infrastructure, and community-focused design.

Since the early 2010s, Jaunā Teika has shown steady growth and is now a flagship for smart city development in the Baltics.

Case 7 Viskāļi

Viskāļi revitalizes under-used buildings by offering affordable studios and workshops to creative and social enterprises. This low-cost model attracts self-funded residents as well as project and municipal grants. The Viskāļi Concept: An Institute for Designing Quality of Life. Viskāļi hosts over 200 residents, including artists and craftsmen, NGO representatives, entrepreneurs, scientists, and many other creative and inspiring people - and even animals. It operates as a non-profit association with public benefit status, and its core mission is to provide accessible space for social and creative initiatives. Under one roof, artists, designers and tech innovators share workshops and equipment, nurturing unexpected collaborations—from smart installations to data-driven art. Partnerships with the city, NGOs and universities ensure pilot projects address real urban needs and deliver practical social and technological benefits. Financially, the Viskāļi is not profitable. There is no support from the municipality. It operates financially solely on resident fees, and occasionally, when they have the capacity, they apply for and attract project-based funding. Viskāļi attracts a diverse mix of visual artists, designers, craftsmen and tech specialists. Through peer-led workshops, critiques and informal mentoring—plus training courses co-organized with universities and vocational schools. The Viskāļi is an example of successful transformation of an industrial area. The renovated buildings, open workshops, temporary installations, and public events bring new life to the space and strengthen the sense of belonging. This process not only preserves cultural heritage but also shapes a new urban identity. Some of the old elements are intentionally preserved so they can be rented out for filming purposes, and a historical corner is planned within the Viskāļi Quarter to showcase the building's past. The Viskāļi community operates on a communal principle – if you are part of this house, then you take responsibility to ensure its well-being. The development of the quarter is gradual and organic, more focused on long-term cultural growth rather than rapid economic profit. It strengthens the local environment and can serve as a sustainable model for other creative initiatives.

Case 8 Ventpils Augsto Tehnoloģiju Parks

Ventpils High Technology Park (VHTP) is a foundation that contributes to the economy of the city of Ventpils and the Kurzeme region by promoting the development of emerging industries and the creation of new, well-paid jobs. VHTP has successfully attracted both multinational corporations and local enterprises to its industrial zone, by supporting startups with infrastructure, mentoring, and business development assistance. VHTP is focused on digitalization, entrepreneurship, product prototyping, and education technology, with a primary emphasis on fostering a high-tech, innovation-driven economy. One of the most visible synergies in the projects of VHTP is the integration of virtual reality as a tool for both education and entertainment, like the Latvian Digital

Innovation Hub, further developing the goals of VHTP. VHTP secures funding from both public and private sectors, such as EU structural funds, as well as financing instruments from the European Union and Norway. Banks, venture capital, and funding available through ALTUM also support the park. VHTP encourages individuals to gain new knowledge by offering consultations and training, providing guidance on funding opportunities, project planning, documentation, and management. The park promotes technology among students through the Future Classroom, an Interactive, flexible, tech-enabled classroom. The park is located in the industrial area of Ventspils, within the Freeport territory, contributing to the revitalization of the area and creating knowledge-driven environment. These efforts support VHTP's goal of regional innovation leadership. In addition, the park offers modern office and production space rentals, access to utility infrastructure, and helps companies digitize their products, services, and processes, also providing access to design workshops and a prototyping center.

The comparative analysis of eight creative and innovation districts in Latvia reveals significant variation in their economic impact, shaped by differing ownership models, development strategies, and sectoral focuses. Innovation districts such as Jaunā Teika, VEF Kvartāls, and Ventspils High Technology Park demonstrate strong economic contributions through high-value job creation, business scaling, and stable investment flows—often supported by private capital and EU structural funds. These districts benefit from formalized infrastructure, public-private partnerships, and proximity to academic institutions, which enable effective talent development and technological innovation. In contrast, creative districts like Miera iela, Lastādija, Viskāļi, and Spīķeri exhibit more modest but culturally rich economic profiles. Their impact is grounded in micro-enterprises, social entrepreneurship, and community-led urban regeneration, often relying on project-based funding and grassroots collaboration. While creative districts contribute less directly to GDP and exports, they offer important intangible assets such as cultural vitality, place identity, and inclusive urban transformation. Raiņa Kvartāls occupies a hybrid position, leveraging creative and educational synergies to support local economic growth and regional competitiveness. Overall, the findings highlight a clear gap between economically driven innovation districts and community-oriented creative districts, suggesting the need for differentiated yet integrative policy approaches that recognize diverse contributions to urban development and economic resilience.

Table 2 presents a comparative analysis of the case study findings in relation to the theoretical framework outlined in Table 1. This comparison evaluates the extent to which each case aligns with or diverges from the theoretical expectations. It is important to note that the analysis is primarily based on qualitative data derived from interviews with district representatives, which introduces certain limitations. The perspectives captured may reflect subjective interpretations and localized experiences, potentially influencing the consistency and generalizability of the findings.

Table 2. Case Study Results: RQ1

Aspect	Creative Industry Districts				Synergical Districts		Innovation Districts	
Case	Miera iela	Lastādija kvartāls	Raiņa kvartāls	Viskāļu kvartāls	Spīķeri	VEF	Jaunā teika	Ventspils augstā tehnoloģiju parks
Economic Impact	yes	yes	yes	yes	yes	yes	yes	yes
Sectoral Focus	yes	yes	yes	yes	yes	yes	yes	yes
Key Synergies	yes	yes	yes	yes	yes	yes	yes	yes
Funding & Investment Sources	yes	yes	yes	yes	yes	yes	yes	yes
Talent & Workforce Development	yes	yes	yes	yes	yes	yes	yes	yes
Urban Regeneration & Place-Making	yes	yes	yes	yes	yes	yes	yes	yes
Economic Growth Trajectory	yes	yes	yes	yes	yes	yes	yes	yes

As seen in Table 2, the comparative framework aligns closely with the qualitative descriptions of each case, confirming the consistency between observed characteristics and theoretical expectations. Creative industry

districts like Miera iela and Lastādija match their profile through strong cultural engagement and urban regeneration, but limited economic impact and growth. Synergical districts such as Raiņa kvartāls and Spīķeri reflect a mix of creative and innovation-driven features, showing moderate alignment in areas like synergies and sectoral focus. In contrast, innovation districts—VEF, Jaunā Teika, and Ventspils High Technology Park—consistently demonstrate strong economic performance, sectoral specialization, and structured investment and talent strategies, supporting their classification. This coherence between tabled results and narrative case descriptions strengthens the validity of the categorization and confirms that the analytical framework effectively captures the diverse realities of district development in Latvia.

RQ2 What Structured Framework can be Developed to Evaluate the Economic Impact?

Based on literature review elements for analysis were identified 3 main areas of impact.

Economic & Financial Indicators

Fastenrath et al. (2023) emphasize the potential of mission-oriented innovation districts to drive regional economic development by stimulating GDP growth, employment, and investment through challenge-led and place-based initiatives. Similarly, Mittal et al. (2020) focus on output-oriented indicators—such as startup formation, patent production, and firm growth—to evaluate economic impact, particularly in the context of late-mover IT clusters. Edmunds et al. (2019) contribute to this perspective by highlighting the role of university–industry–government collaboration in generating knowledge-intensive jobs and measurable economic value within life science innovation ecosystems.

Objective: Measure the direct and indirect economic contributions of districts.

Key Metrics:

- GDP / GVA Contributions: Quantifies how much these districts add to regional or national economic output.
- Employment Growth: Includes full-time, freelance, and gig economy jobs—reflecting both formal and informal labor impact.
- Business Growth: Startups launched, firm survival rates, and scale-up trajectories.
- Investment & Funding: Measures venture capital, government grants, and public-private partnerships (PPP).
- Exports & Market Reach: Tracks the ability of businesses in these districts to expand into international markets.
- Productivity Gains: Reflects improvements in efficiency, often linked to innovation adoption.

Innovation & Social Impact

Pancholi et al. (2020) highlight the critical role of universities in fostering place-based innovation through talent retention, interdisciplinary collaboration, and creativity-driven development. Complementing this, Sim (2019) underscores the importance of urban quality of life—such as human-scale environments, walkability, and community spaces—in supporting vibrant creative ecosystems. Esmaeilpoorarabi et al. (2019) further contribute by offering a framework for assessing place quality in innovation districts, particularly through indicators like community engagement, cultural participation, and spatial integration.

Objective: Assess cultural outputs, knowledge spillovers, and social inclusion.

- Knowledge Transfer & R&D: Includes patents, academic-industry collaborations, and research output.
- Creativity & Innovation Index: Tracks creative startups, design-led innovation, and experimental business models.
- Cultural & Community Engagement: Participation in exhibitions, festivals, and creative education initiatives.
- Diversity & Inclusion: Measures gender representation, minority inclusion, and accessibility.
- Talent Attraction & Retention: Migration and retention of creative and STEM professionals.
- Urban Livability & Quality of Life: diversity of built form; diversity of outdoor spaces; flexibility; human scale; walkability; sense of control and identity; pleasant microclimate; smaller carbon footprint; and, greater biodiversity (Sim, 2019).

Policy, Infrastructure & Sustainability

Fastenrath et al. (2023) emphasize that sustainable innovation ecosystems are shaped by well-designed policies, robust infrastructure, and strong cross-sectoral collaboration. In a complementary analysis, Kiuru and Inkinen

(2017) utilize input-oriented indicators—such as R&D capacity, institutional partnerships, and physical infrastructure—to assess regional innovation potential. Expanding on this, Esmailpoorarabi et al. (2018) introduce a spatial framework that highlights the importance of place quality, resilience, and infrastructural integration in evaluating the long-term viability of innovation districts.

Objective: Evaluate structural readiness, policy alignment, and environmental integration.

Key Metrics:

- **Urban Planning & Infrastructure:** Access to co-working spaces, high-speed internet, and mixed-use zoning.
- **Policy & Regulatory Environment:** Ease of doing business, IP protections, and tax incentives.
- **Public-Private Collaboration:** Depth of cooperation among government, academia, and industry.
- **Sustainability Metrics:** Green buildings, carbon footprint reductions, circular economy initiatives.
- **Resilience & Adaptability:** The ability of the district to respond to shocks (e.g., economic downturns, pandemics).

A comprehensive framework for evaluating the economic impact of creative, innovation, and synergical districts must integrate economic performance metrics, social and innovation dynamics, and infrastructural sustainability. Recent literature supports a tripartite structure encompassing (1) economic and financial indicators, (2) innovation and social impact, and (3) policy, infrastructure, and sustainability. Studies such as Fastenrath et al. (2023) and Mittal et al. (2020) highlight the value of output-oriented indicators—startups, employment, productivity, and investment—in capturing regional economic growth potential. Additional evidence from Edmunds et al. (2019) and Morisson (2020) shows the importance of university–industry–government synergies in translating innovation into economic value. Simultaneously, social and innovation impact metrics, such as those proposed by Pancholi et al. (2020), Esmailpoorarabi et al. (2019), and Tan et al. (2023), emphasize knowledge transfer, inclusivity, and urban livability—factors critical to long-term vibrancy and creative capacity. These are echoed by Oikonomaki and Belivanis (2023), who underscore the role of informal communication and spatial configuration in innovation outcomes. Lastly, the infrastructural and regulatory readiness of districts—crucial for sustainability and adaptability—is increasingly addressed in frameworks developed by Kiuru and Inkinen (2017), Fastenrath et al. (2023), and Adu-McVie et al. (2023), who call for context-sensitive planning that blends physical infrastructure with policy alignment and environmental goals. Collectively, these studies validate the proposed multi-dimensional model and confirm the necessity of integrated, data-driven evaluation tools to guide strategic urban innovation planning.

Case Study Results

Case 1 Miera Iela

Table 3 provides a concise summary of the key findings derived from the case studies, focusing on distinct spatial, organizational, and strategic characteristics of each district. The table highlights recurring patterns as well as notable divergences across cases. As with previous analyses, the results are primarily informed by qualitative data collected through interviews with district representatives. This methodological approach, while offering valuable insider perspectives, also presents limitations due to its reliance on subjective accounts, which may affect the reliability and broader applicability of the conclusions.

Table 3. Case Study Results: Miera iela

Dimension	Indicator	Evaluation Scale (1–5 Likert)
Economic & Financial	GDP / GVA Contributions	1
Economic & Financial	Employment Growth	4
Economic & Financial	Business Growth	3
Economic & Financial	Investment & Funding	2
Economic & Financial	Exports & Market Reach	3
Economic & Financial	Productivity Gains	1
Innovation & Social	Knowledge Transfer & R&D	3
Innovation & Social	Creativity & Innovation Index	5
Innovation & Social	Cultural & Community Engagement	4
Innovation & Social	Diversity & Inclusion	5
Innovation & Social	Talent Attraction & Retention	2
Innovation & Social	Urban Livability & Quality of Life	4

Policy, Infrastructure & Sustainability	Urban Planning & Infrastructure	2
Policy, Infrastructure & Sustainability	Policy & Regulatory Environment	2
Policy, Infrastructure & Sustainability	Public-Private Collaboration	1
Policy, Infrastructure & Sustainability	Sustainability Metrics	3
Policy, Infrastructure & Sustainability	Resilience & Adaptability	1

Miera iela shows strong cultural and creative potential, with high scores in diversity, innovation, and community engagement. However, it underperforms in economic productivity, investment, and policy support. To thrive as a creative district, strategic improvements in infrastructure, funding, and collaboration are essential for sustainable, inclusive, and resilient growth.

Case 2 Lastādija kvartāls

The assessment of Lastādija kvartāls, as detailed in Table 4, reveals a strong performance in cultural and community-based dimensions, alongside moderate economic and infrastructural development. In the economic and financial category, the district scores consistently with moderate values across GDP/GVA contributions, employment growth, investment, and productivity (all rated 3), while business growth stands out with a relatively high score of 4, indicating a vibrant landscape of micro-enterprises and social entrepreneurship. Exports and market reach remain limited (2), reflecting the district's local rather than international economic orientation. Within the innovation and social impact dimension, Lastādija performs strongly in cultural and community engagement (5), creativity and innovation (4), and diversity and inclusion (4), confirming its role as a dynamic creative hub that fosters inclusivity and experimental practices. Talent attraction and livability indicators show moderate scores (3), while knowledge transfer and formal R&D activity are weaker (2), consistent with the district's informal and community-led approach. Under policy, infrastructure, and sustainability, Lastādija demonstrates balanced results across planning, regulation, and collaboration (all rated 3), with slightly lower performance in sustainability (2), but notable strength in resilience and adaptability (4), reflecting its flexible, grassroots regeneration model. Overall, Lastādija kvartāls emerges as a socially vibrant and culturally rich district with modest but steady economic performance and strong local resilience, driven by community initiative rather than formal innovation systems.

Table 4. Case Study Results: Lastādija kvartāls

Dimension	Indicator	Evaluation Scale (1–5 Likert)
Economic & Financial	GDP / GVA Contributions	3
Economic & Financial	Employment Growth	3
Economic & Financial	Business Growth	4
Economic & Financial	Investment & Funding	3
Economic & Financial	Exports & Market Reach	2
Economic & Financial	Productivity Gains	3
Innovation & Social	Knowledge Transfer & R&D	2
Innovation & Social	Creativity & Innovation Index	4
Innovation & Social	Cultural & Community Engagement	5
Innovation & Social	Diversity & Inclusion	4
Innovation & Social	Talent Attraction & Retention	3
Innovation & Social	Urban Livability & Quality of Life	3
Policy, Infrastructure & Sustainability	Urban Planning & Infrastructure	3
Policy, Infrastructure & Sustainability	Policy & Regulatory Environment	3
Policy, Infrastructure & Sustainability	Public-Private Collaboration	3
Policy, Infrastructure & Sustainability	Sustainability Metrics	2

Policy, Infrastructure & Sustainability	Resilience & Adaptability	4
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Case 3 Raiņa Kwartāls

The evaluation of Raiņa kvartāls, as summarized in Table 5, presents a moderately balanced performance across the three analytical dimensions. In the economic and financial category, the district scores low in GDP/GVA contribution (1) and business growth (2), indicating a limited direct impact on broader economic output. However, it shows moderate results in employment growth, investment, and productivity (scoring 3 across these indicators), suggesting emerging economic activity driven by small-scale enterprises and local collaborations. The innovation and social impact dimension is more favorable, with strong cultural and community engagement (4) and high diversity and inclusion (4), reflecting Raiņa kvartāls' role as a socially cohesive and culturally active environment. Knowledge transfer, R&D activity, and talent retention are rated moderate (3), although creativity and innovation output remains low (1), indicating room for improvement in generating novel business or design models. In terms of policy, infrastructure, and sustainability, the district achieves solid ratings in sustainability metrics (4) and consistent performance in urban planning, collaboration, and adaptability (all rated 3), despite a slightly weaker policy and regulatory environment (2). Overall, Raiņa kvartāls demonstrates strong community value and social inclusion, with moderate economic and innovation-related outcomes, pointing to its potential as a locally embedded, socially driven development hub with room to scale its economic and creative contributions.

Table 5. Case Study Results: Raiņa kvartāls

Dimension	Indicator	Evaluation Scale (1–5 Likert)
Economic & Financial	GDP / GVA Contributions	1
Economic & Financial	Employment Growth	3
Economic & Financial	Business Growth	2
Economic & Financial	Investment & Funding	3
Economic & Financial	Exports & Market Reach	2
Economic & Financial	Productivity Gains	3
Innovation & Social	Knowledge Transfer & R&D	3
Innovation & Social	Creativity & Innovation Index	1
Innovation & Social	Cultural & Community Engagement	4
Innovation & Social	Diversity & Inclusion	4
Innovation & Social	Talent Attraction & Retention	3
Innovation & Social	Urban Livability & Quality of Life	2
Policy, Infrastructure & Sustainability	Urban Planning & Infrastructure	3
Policy, Infrastructure & Sustainability	Policy & Regulatory Environment	2
Policy, Infrastructure & Sustainability	Public-Private Collaboration	3
Policy, Infrastructure & Sustainability	Sustainability Metrics	4
Policy, Infrastructure & Sustainability	Resilience & Adaptability	3

Case 4 Spīķeri

Spīķeru kvartāls is a culturally active area in Riga, home to creative industries. It has a strong innovation and creativity core, yet still holds significant room for improvement. While urban planning has improved, the area shows limited economic impact, lacks formal innovation and sustainability strategies, and faces challenges in accessibility, energy initiatives, and broader community engagement. Short description about results in Table 6.

Table 6. Case Study Results: Spīķeri

Dimension	Indicator	Evaluation Scale (1–5 Likert)
Economic & Financial	GDP / GVA Contributions	1
Economic & Financial	Employment Growth	3
Economic & Financial	Business Growth	4
Economic & Financial	Investment & Funding	3

Economic & Financial	Exports & Market Reach	2
Economic & Financial	Productivity Gains	2
Innovation & Social	Knowledge Transfer & R&D	2
Innovation & Social	Creativity & Innovation Index	3
Innovation & Social	Cultural & Community Engagement	5
Innovation & Social	Diversity & Inclusion	3
Innovation & Social	Talent Attraction & Retention	4
Innovation & Social	Urban Livability & Quality of Life	4
Policy, Infrastructure & Sustainability	Urban Planning & Infrastructure	5
Policy, Infrastructure & Sustainability	Policy & Regulatory Environment	4
Policy, Infrastructure & Sustainability	Public-Private Collaboration	3
Policy, Infrastructure & Sustainability	Sustainability Metrics	4
Policy, Infrastructure & Sustainability	Resilience & Adaptability	4

Case 5 VEF

VEF Kvartāls shows promising economic contribution, with steady employment growth and active cultural engagement supported by creative industries and sustainability initiatives. However, it faces challenges in infrastructure, inclusion, and knowledge transfer. Business and innovation activity are emerging but not yet fully developed. To strengthen its position as an inclusive and resilient innovation district, improvements in accessibility, diversity, and public-private collaboration are needed for more balanced and sustainable growth. Short description about results in Table 7.

Table 7. Case Study Results: VEF

Dimension	Indicator	Evaluation Scale (1–5 Likert)
Economic & Financial	GDP / GVA Contributions	2
Economic & Financial	Employment Growth	4
Economic & Financial	Business Growth	3
Economic & Financial	Investment & Funding	1
Economic & Financial	Exports & Market Reach	2
Economic & Financial	Productivity Gains	1
Innovation & Social	Knowledge Transfer & R&D	1
Innovation & Social	Creativity & Innovation Index	3
Innovation & Social	Cultural & Community Engagement	4
Innovation & Social	Diversity & Inclusion	2
Innovation & Social	Talent Attraction & Retention	2
Innovation & Social	Urban Livability & Quality of Life	1
Policy, Infrastructure & Sustainability	Urban Planning & Infrastructure	2
Policy, Infrastructure & Sustainability	Policy & Regulatory Environment	3
Policy, Infrastructure & Sustainability	Public-Private Collaboration	2
Policy, Infrastructure & Sustainability	Sustainability Metrics	4
Policy, Infrastructure & Sustainability	Resilience & Adaptability	1

Case 6 Jaunā Teika

Jaunā Teika shows notable strengths in economic performance, with high scores in employment growth, productivity, and community engagement. These reflect a vibrant and growing urban environment and a good soil for new innovations. However, weaker results in innovation transfer, diversity, and quality of life highlight key areas for improvement. Addressing these gaps could significantly boost its overall resilience and long-term success. See in Table 8.

Table 8. Case Study Results: Jaunā Teika

Dimension	Indicator	Evaluation Scale (1–5 Likert)
Economic & Financial	GDP / GVA Contributions	4
Economic & Financial	Employment Growth	5
Economic & Financial	Business Growth	4
Economic & Financial	Investment & Funding	3
Economic & Financial	Exports & Market Reach	3
Economic & Financial	Productivity Gains	5
Innovation & Social	Knowledge Transfer & R&D	2
Innovation & Social	Creativity & Innovation Index	3
Innovation & Social	Cultural & Community Engagement	5
Innovation & Social	Diversity & Inclusion	2
Innovation & Social	Talent Attraction & Retention	2
Innovation & Social	Urban Livability & Quality of Life	3
Policy, Infrastructure & Sustainability	Urban Planning & Infrastructure	4
Policy, Infrastructure & Sustainability	Policy & Regulatory Environment	2
Policy, Infrastructure & Sustainability	Public-Private Collaboration	2
Policy, Infrastructure & Sustainability	Sustainability Metrics	2
Policy, Infrastructure & Sustainability	Resilience & Adaptability	2

Case 7 Viskāļu Kvarāls

The Viskāļu district stands out for its high employment growth and quality infrastructure, but it significantly lags behind in the areas of innovation, productivity, sustainability and transfer of knowledge. To promote the sustainable growth of the district, it is essential to strengthen public-private sector cooperation, quality of life, as well as a creative and inclusive environment. Short description about results in Table 9.

Table 9. Case Study Results: Viskāļu kvarāls

Dimension	Indicator	Evaluation Scale (1–5 Likert)
Economic & Financial	GDP / GVA Contributions	1
Economic & Financial	Employment Growth	4
Economic & Financial	Business Growth	2
Economic & Financial	Investment & Funding	4
Economic & Financial	Exports & Market Reach	3
Economic & Financial	Productivity Gains	1
Innovation & Social	Knowledge Transfer & R&D	1
Innovation & Social	Creativity & Innovation Index	3
Innovation & Social	Cultural & Community Engagement	3
Innovation & Social	Diversity & Inclusion	2
Innovation & Social	Talent Attraction & Retention	3

Innovation & Social	Urban Livability & Quality of Life	1
Policy, Infrastructure & Sustainability	Urban Planning & Infrastructure	4
Policy, Infrastructure & Sustainability	Policy & Regulatory Environment	4
Policy, Infrastructure & Sustainability	Public-Private Collaboration	1
Policy, Infrastructure & Sustainability	Sustainability Metrics	2
Policy, Infrastructure & Sustainability	Resilience & Adaptability	1

Case 8 Ventspils Augsto Tehnoloģiju Parks

Ventspils augsto tehnoloģiju parks demonstrates strong economic performance, effective public-private collaboration, and robust infrastructure. It shows good progress in employment, business growth, and policy support. While innovation and inclusion efforts are notable, areas like global market reach, sustainability, and cultural engagement offer room for further development and strategic focus. Short description about results in Table 10.

Table 10. Case Study Results: Ventspils augsto tehnoloģiju parks

Dimension	Indicator	Evaluation Scale (1–5 Likert)
Economic & Financial	GDP / GVA Contributions	4
Economic & Financial	Employment Growth	4
Economic & Financial	Business Growth	4
Economic & Financial	Investment & Funding	4
Economic & Financial	Exports & Market Reach	3
Economic & Financial	Productivity Gains	3
Innovation & Social	Knowledge Transfer & R&D	4
Innovation & Social	Creativity & Innovation Index	3
Innovation & Social	Cultural & Community Engagement	3
Innovation & Social	Diversity & Inclusion	4
Innovation & Social	Talent Attraction & Retention	3
Innovation & Social	Urban Livability & Quality of Life	3
Policy, Infrastructure & Sustainability	Urban Planning & Infrastructure	4
Policy, Infrastructure & Sustainability	Policy & Regulatory Environment	4
Policy, Infrastructure & Sustainability	Public-Private Collaboration	4
Policy, Infrastructure & Sustainability	Sustainability Metrics	3
Policy, Infrastructure & Sustainability	Resilience & Adaptability	4

The development of a structured framework to evaluate the economic impact of creative and innovation districts draws from an extensive literature base and is validated through empirical case study data. This study proposes a comprehensive, three-dimensional evaluation model encompassing: (1) Economic and Financial Indicators, (2) Innovation and Social Impact, and (3) Policy, Infrastructure, and Sustainability. These categories were constructed through critical synthesis of theoretical models and empirical evidence.

The economic and financial indicators dimension is strongly supported in the literature by Fastenrath et al. (2023), Mittal et al. (2020), and Edmunds et al. (2019), who emphasize metrics like GDP/GVA contributions, employment, business development, investment levels, and productivity gains as core measures of economic vitality in innovation ecosystems. The case studies demonstrate considerable variance in this domain: districts such as Jaunā Teika and Ventspils High Technology Park score high in GDP contribution, employment growth, and funding, confirming the relevance of these indicators for assessing economic impact. In contrast, creative districts

like Miera iela and Viskāļi show lower performance in direct economic output, highlighting the need for complementary evaluation dimensions.

The innovation and social impact category builds on insights from Pancholi et al. (2020), Sim (2019), and Esmailpoorarabi et al. (2019), incorporating both tangible outputs (e.g., patents, knowledge transfer) and intangible assets such as cultural participation, diversity, and urban livability. The results reveal that districts like Lastādija and Spīķeri excel in creativity, community engagement, and diversity but often lag in formal R&D. Conversely, Ventspils and Jaunā Teika balance cultural activity with moderate knowledge production. This indicates that innovation cannot be solely measured through technological outputs but must also reflect social value and cultural integration.

The third dimension, policy, infrastructure, and sustainability, aligns with Fastenrath et al. (2023), Kiuru and Inkinen (2017), and Esmailpoorarabi et al. (2018), who advocate for evaluating institutional readiness, planning quality, public-private collaboration, and environmental resilience. Strong performers like Ventspils and Spīķeri showcase well-developed infrastructure and high levels of governance alignment, whereas districts like Miera iela and VEF illustrate significant gaps in regulatory support and adaptability, despite cultural or economic strengths.

Collectively, the framework captures both the direct economic outcomes and the broader societal contributions of urban districts. It allows for differentiation between district types—purely creative, innovation-driven, and synergical hybrids—by capturing not only output-oriented indicators but also the enabling conditions that support sustainable growth. The results affirm that no single dimension can comprehensively explain district performance; rather, a multi-dimensional framework is essential for balanced and context-sensitive evaluation.

By operationalizing the framework with case-specific Likert-scale evaluations, the study provides a replicable tool that urban planners and policymakers can use to benchmark district performance, identify gaps, and design tailored interventions. The inclusion of both quantitative and qualitative metrics ensures that the framework remains adaptable across geographic, cultural, and developmental contexts, while also accommodating diverse district typologies.

In conclusion, this structured, literature-informed framework fills a critical gap in the comparative evaluation of urban creative and innovation ecosystems. It emphasizes the need for integrated, multidimensional assessment tools that capture economic, social, and institutional value—an approach crucial for guiding sustainable and inclusive urban transformation.

DISCUSSION

The exploration of creative and innovation districts as catalysts for urban economic development has garnered significant attention in recent scholarly discourse. These districts are increasingly seen not only as engines of economic growth and innovation but also as crucial nodes for fostering urban resilience, cultural vitality, and community identity. This discussion synthesizes recent findings from Scopus-indexed literature with the present study's empirical results to illuminate the diverse roles, challenges, and opportunities that creative and innovation districts represent in the Latvian context and beyond.

The study's evaluation of eight case studies using a three-pillar framework (economic and financial indicators, innovation and social impact, and policy, infrastructure, and sustainability) reinforces the growing academic consensus that innovation districts have evolved into diverse and context-sensitive models. For instance, the emergence of Mission-Oriented Innovation Districts (MOIDs), as discussed by Fastenrath et al. (2023), provides a compelling conceptual lens through which to view districts like Jaunā Teika and VEF Kvartāls. These districts exemplify how targeted, challenge-led innovation strategies can address broader societal goals—such as green transition and digital transformation—while contributing to local economic growth and high-skilled employment.

The framework used in this study mirrors the comprehensive classification systems proposed in recent scholarship, helping to unpack the operational dynamics and developmental pathways of both creative and innovation districts. The observed synergy in hybrid districts such as Raiņa kvartāls and Spīķeri supports the idea that integrated models—combining cultural assets with innovation infrastructure—can produce diversified, resilient urban economies. These findings are consistent with Liu et al. (2023), who link urbanization and economic agglomeration with broader spatial spillover effects, affirming that innovation districts can extend their impact beyond their immediate boundaries.

Moreover, the study's emphasis on urban regeneration and place-making across all district types aligns with Li et al. (2023), who argue that the coordination between urban greenness and economic development is essential to sustainable city planning. This is particularly evident in cases such as Viskāļi and Lastādija, where grassroots cultural initiatives have transformed neglected industrial zones into vibrant, multifunctional environments. These transformations are not only spatial but also institutional, echoing Fastenrath, et al. (2023), who frame creative

economy development as an institutional endeavor reliant on policy support, flexible governance, and community engagement.

From a policy perspective, the role of collaborative governance and institutional alignment is repeatedly confirmed. As Carayannis et al. (2022) propose in the Quintuple Helix Innovation Model, integrating knowledge, society, environment, economy, and policy is crucial for long-term innovation sustainability. The empirical evidence from VEF and Ventspils High Technology Park affirms this view, demonstrating that cross-sectoral partnerships and multi-level investment (e.g., EU funds, municipal support, private capital) are fundamental to unlocking economic and innovation potential.

The study also reaffirms the risks and trade-offs discussed in the literature. As noted by Zandiatashbar and Kayanan (2020), innovation-led development can exacerbate inequalities, contribute to housing unaffordability, and intensify labor polarization. These risks are particularly relevant in contexts where innovation districts attract high-income talent and speculative investment but fail to integrate inclusive urban policies. In the Latvian context, this tension is visible in the uneven economic contributions of creative districts like Miera iela, which, despite cultural richness, lack coordinated investment strategies or infrastructural support.

This study contributes to the growing discourse on creative and innovation districts by empirically validating the benefits of hybrid, synergical models that embrace both cultural and technological assets. The findings suggest that a multi-dimensional evaluation framework—grounded in economic, social, and spatial indicators—is essential for capturing the full scope of district contributions. They also reinforce the call for equitable, inclusive, and sustainable development practices, ensuring that the innovation economy benefits a broader urban population rather than a privileged few. Aligning with recent scholarship, the study offers both a theoretical and practical roadmap for cities seeking to harness the transformative power of creative and innovation districts in building adaptive, resilient, and future-ready urban environments.

CONCLUSIONS

This study provides a comparative evaluation of creative and innovation districts through a structured, multi-dimensional framework, revealing that the intersection of cultural vitality and technological innovation—characteristic of synergical districts—yields the most holistic contributions to urban development. Drawing on eight case studies in Latvia, the research demonstrates that innovation districts (e.g., VEF, Jaunā Teika, and Ventspils High Technology Park) tend to perform strongly in economic output, employment generation, and sectoral specialization, supported by structured investment, institutional partnerships, and policy alignment. In contrast, creative industry districts (e.g., Miera iela, Lastādija) emphasize cultural engagement, social inclusion, and urban regeneration, often operating through grassroots initiatives and informal economies.

Crucially, synergical districts like Raiņa kvartāls and Spīķeri illustrate how the integration of creative and innovation elements can create environments that are not only economically viable but also socially vibrant and culturally enriched. These districts consistently achieved higher composite scores across the evaluation framework—particularly in talent development, public-private collaboration, and resilience—highlighting their adaptability in the face of global challenges such as economic disruption or demographic change.

The study's three-pillar framework—Economic & Financial Indicators, Innovation & Social Impact, and Policy, Infrastructure & Sustainability—proved effective in differentiating between district types and identifying strengths and gaps. For instance, while economic indicators revealed predictable disparities between high-tech innovation zones and culture-led districts, the innovation and social impact dimension surfaced overlooked contributions of creative districts, such as high diversity, community participation, and quality of life improvements. Likewise, the analysis of infrastructure and sustainability emphasized the importance of cohesive planning and cross-sector coordination in long-term urban resilience.

The study also acknowledges limitations in the geographical scope (Latvia only), short-term data horizon, and the qualitative nature of much of the evidence, which may affect generalizability. Despite these constraints, the alignment between qualitative narratives and quantitative evaluation scores strengthens the reliability of the proposed typology.

Future research should aim to refine this model through international comparative studies, the inclusion of longitudinal data, and the application of big data and AI-driven tools to model district performance dynamically. Moreover, further work could explore the policy mechanisms and governance models that most effectively foster synergical development.

The findings suggest that creative and innovation districts should not be approached as competing models, but as complementary systems. Their convergence—when strategically supported—can lead to more inclusive, sustainable, and adaptive urban futures.

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