Mission-Oriented Innovation Districts

Towards challenge-led, place-based urban innovation

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Review

Mission-Oriented Innovation Districts: Towards challenge-led, place-based urban innovation

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ABSTRACT

In recent years, there has been rapidly growing interest in Innovation Districts (ID) in urban policy and practice. IDs are touted as catalysts for innovation and economic development involving a wide range of stakeholders often in under-performing neighbourhoods or precincts. Despite the appeal, critique is forming around their linear understanding of innovation, the narrow focus of economic goals and lack of directionality in addressing grand societal challenges. This paper proposes the concept of Mission-Oriented Innovation Districts (MOID). MOID are thought to help design, shape and drive transformative change from a place-based perspective. Methodologically, this paper conceptually reviews antecedents of and draws on a structured search and scoping review of the two popular but disjointed literatures on ID and Mission-Oriented Innovation (MOI). Drawing on an analysis of 99 journal articles, this paper seeks to provide a better understanding about differences and common grounds of the two strands of literature. Five analytical categories are developed and applied to assess and interpret insights from existing publications: (1) understandings, definitions, and objectives; (2) theoretical-conceptual underpinnings; (3) analytical and methodological approaches; (4) evaluation; and (5) governance. We find that there is ample opportunity for cross-fertilization of insights across these two literatures. Based on this in-depth analysis, the contours of a new concept of MOID are outlined through a formal definition of MOID and insights from the analysis are translated into future research questions to inform a transformative agenda for innovation policy.

1. Introduction

Policy-makers, business leaders and academics are reminded regularly of how indispensable innovation is for economic growth and development, much so that it has become a leitmotif of policy decisions and institutional design (Pfotenhauer and Jasanoff, 2017). Innovation has been at the heart of most, if not all, COVID-19 recovery programs around the world, providing a pathway not only for rebuilding the economy but doing so in greener and more socially inclusive ways. On the flip-side of this innovation imperative, there is a risk that inflationary use of the concept will lead to a hollowing out and devolving of 'innovation' into nothing more than a vacuous buzz-word. Morgan (2004) has warned early-on of a tendency in (regional) innovation studies to collapse levels of abstraction into simple narratives to render them digestible for politicians and policy-makers.

Scholars in innovation and innovation policy have derived substantial legitimacy (and funding) for their research on account of being relevant for society. Many ideas, concepts, theories, findings and methodologies from innovation research have found their way into policy-making. Examples include the appeal of innovation systems as a

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general framework across both policy and analysis (Borrás and Edquist, 2019), the popularity of smart specialization in guiding local, regional and national innovation strategies (Foray, 2015) and the ubiquity of missions in many industrial policy programs around the world (Mazzucato, 2018). Being close to policy-making provides certain advantages but implies also a number of risks.[1]

As expectations on innovation policy to serve multiple goals and constituencies (Schot and Steinmueller, 2018), and to be increasingly reflexive (Stilgoe et al., 2013), are growing, an increase in hybrid science-policy concepts is likely to be part and parcel of the normative turn in innovation policy (Uyarra et al., 2019). Unpacking the assumptions and underpinnings of such concepts helps not only to better understand their performativity but also offers concrete insights for innovation policy.

In this paper we juxtapose two well discussed but disconnected concepts that have emerged in recent years from the science-policy interface in innovation studies. These concepts are 'Innovation Districts' (ID) and 'Mission-Oriented Innovation' (MOI). Both concepts mushroomed at more or less the same time as prominent policy mobilities readily deployed across a range of policy levels. On the one hand, they offer novel, compelling and future-minded imaginaries for policymakers while at the same time mobilizing well-known ideas and proven concepts from longer-term research traditions. While 'Missions' (and related notions such as 'transformative innovation' and 'challenge-led innovation') have received relatively more attention (and scrutiny) primarily by virtue of EU and national policy-makers, 'Innovation Districts' have quickly become 'the next big thing' primarily at the urban and local level. Besides growing case study evidence in published literature (e.g. Pique et al., 2020; Davidson et al., 2023), the Global Institute of Innovation Districts' currently has 23 innovation districts joining from particularly North America, Europe and Australia, which reportedly is a selection of an estimated collection of over 100 innovation districts globally (https://www.giid.org).

The starting point of this paper is that, so far, the spatial sensitivity of mission-oriented or challenge-led innovation appears to have been underdeveloped in literature, policy and practice. Whereas Innovation District literature has not substantially engaged with the framing that innovation needs to resolve pressing societal challenges, and the implication of this framing for designing innovation policy. Our main proposition is that an integrative approach through the concept of 'Mission-Oriented Innovation Districts' holds promise for a more comprehensive and transformative approach to innovation in local and urban policy while incorporating a more place-based perspective in addressing societal challenges.

Hence, we ask the question how Mission-Oriented Innovation Districts (MOIDs) can be conceptualised, measured and governed? We address this question by first reviewing a number of longer-term research strands that both literatures draw on in order to historically contextualise and embed the more recent contributions. We then continue by reviewing the recent academic literature on Innovation Districts and on Mission-Oriented Innovation (MOI). Through this search process, we identified a total of 99 articles for in-depth analysis. We first briefly sketch the general contours of this literature through a bibliometric analysis identifying the key references that the literature draws on and noting the very minor points of intersection between them. We then qualitatively present results of analysing the literature through the lens of five key aspects: (1) Understandings, definitions and objectives; (2) Theoretical-conceptual underpinnings; (3) Analytical and methodological approaches; (4) Evaluation; and (5) Governance. The analysis is followed by a section that interprets these results from a view to develop the contours of what a Mission-Oriented Innovation District looks like and what new insights for innovation policy this might bring as well as to identify a future research agenda. The paper ends with a brief conclusion.

2. Conceptual backgrounds and antecedents

2.1. Innovation districts

Being essentially a policy and practice concept, the notion of Innovation Districts has been pioneered and popularised by the Brookings Institution, a Washington DC based policy think-tank (Katz and Wagner, 2014). Innovation Districts — or Innovation Precincts[2] — suggest a new urban geography of innovation at the heart of cities and its neighbourhoods. An innovation district is a place-based urban development strategy that aims to regenerate an under-performing centrally located neighbourhood into a desirable location for innovative and creative companies and workers (Morisson, 2020). It should not be confused with the more established, academic notion of industrial districts as used in economic disciplines originally referring dense industrial districts, sometimes with a particular industrial focus. It aligns with the basic premise that innovation emerges from dynamic and collaborative environments facilitated by various forms of proximity in districts like this — where people share knowledge, skills and ideas as they work, meet and socialise together (Boschma, 2005).

In the Innovation District discourse, cities are portrayed as natural sites for the knowledge economy based on clean, green and digital technology, entrepreneurship, start-ups and creativity. Innovation Districts provide a compelling and persuasive logic to help create flourishing, sustainable and attractive cities and have quickly become a global policy mobility for cities wanting to become leaders in the knowledge economy (Oinas et al., 2018). This has been accelerated by popular interest in actual examples: 22@ in Barcelona and Brainport in Eindhoven, for instance. Internationally, innovation districts are mushrooming in many global cities like Berlin, London, Medellin, Melbourne, Montreal, Seoul, Stockholm and Toronto. These districts invoke an imagery that is highly desirable for urban policymakers and politicians where universities, businesses, entrepreneurs, and creatives constitute a dynamic urban eco-system of innovation imbued with a vibrant inner-city life.

Even though the notion of Innovation Districts emerged less than ten years ago, the concept has intellectual antecedents in at least three major streams of literature. First, the concept is rooted in economic geography and spatial economics particularly the broad literature on territorial innovation models (Mouleart and Sekia, 2003), which emphasises local advantages for innovation in spatial agglomerations (Camagni, 1995; Maskell, 2001; Bathelt et al., 2004; Malmberg and Maskell, 2006). One of the fundamental insights in this literature is that localised learning is crucial for firm-based innovation and that such learning and knowledge dynamics is more likely to happen between firms and individuals that share a similar knowledge base (Tavassoli et al., 2022) or benefit from other proximity advantages (Boschma, 2005). Even though the spatial unit of analysis in this literature is typically a large (city) region rather than more granular areas or places in cities, the ID literature has borrowed substantially from this literature when it comes to the mechanisms of and conditions for knowledge generation, knowledge transfer, and knowledge spillover for innovation.

[1] While some may find the close relationship with policy-making problematic, lending legitimacy to research as being societally relevant is recognised as being increasingly important. Indeed, many concepts in innovation studies originated in a hybrid space between science and policy. This does not necessarily mean they suffer from 'theory led by policy' (Lovering, 1999). Rather it acknowledges that this science-policy interface geared to societal impact is constituted by iterative learning processes, mediated by boundary objects and challenged by various trade-offs (Turnheim et al., 2020).

[2] Innovation Districts is the term mostly used globally, whereas Innovation Precinct is a term most commonly used in Australia. In this paper we predominantly use the term district in our analysis.

Second, the ID concept is influenced by the systems perspective on innovation and particularly the Regional Innovation Systems (RIS) literature (Cooke and Morgan, 1994; Asheim and Coenen, 2005). In particular, the RIS literature emphasises interaction and coordination amongst firms, large and small, universities or research organisations, and government agencies as key factors driving innovation in specific places (Doloreux, 2002). The RIS literature specifically honed in on the role of systems boundaries, relationships and networks and knowledge heterogeneity in shaping knowledge transfer between agents, which in turn has guided many national and regional policy initiatives (Asheim et al., 2011). The ID literature differs markedly from RIS literature in terms of spatial scale and context (similar to the argument about the spatial agglomeration literature discussed above).

Third, the ID concept is informed by creative class and place-making literature that brought the ideas and insights on geography of innovation scholarship into the heart of cities (Florida, 2002). The emphasis here has been on the interrelatedness of technology, talent, and tolerance that can attract members of the creative class to the heart of the city and hence spur innovativeness in the city. Initially, consideration for social cohesion, equality and inclusiveness have been notably missing in the creative class approach and many urban development strategies that it underpinned, inviting criticism regarding the risk for gentrification, spatial and social segregation and furthering socio-economic inequality. In more recent work this has however been acknowledged (Florida, 2017). Following the creative class literature, the knowledge-based urban development (KBUD) literature and architectural design framework (Yigitcanlar et al., 2008) has established links to urban planning theories, for example, through concepts such as smart cities and place making (Heaphy and Wiig, 2020). This stream of the literature has pointed toward the changing spatial location of knowledge-intensive industries from large suburban areas into the heart of cities. Initially introduced by the large tech company IBM, smart cities entail the idea of a technology and innovation-led approach to urban growth, management and planning. Responses in urban studies scholarship have criticised contemporary smart city debates for technological optimism, neo-liberal ideologies and democratic failures and a lack of meaningful citizen and community participation in smart urban governance (Barns, 2018; Evans et al., 2019; De Hoop et al., 2022).

In spite of these theoretical roots, it is worth reiterating that ID is primarily a concept that emerged from practice and a typical case where policy has rushed ahead of many fundamental conceptual, theoretical and empirical questions in academia (for a similar debate on clusters, see Martin and Sunley (2003)). This is illustrated by the following 'definition' by the Brookings Institution (Katz and Wagner, 2014, p. 2): 'Innovation districts constitute the ultimate mash up of entrepreneurs and educational institutions, start-ups and schools, mixed-use development and medical innovations, bike-sharing and bankable investments—all connected by transit, powered by clean energy, wired for digital technology, and fueled by caffeine.'

2.2. Mission-oriented innovation

The turn to 'missions' signals a general trend in innovation policy that moved beyond primarily economically framed rationales and is nowadays increasingly concerned with addressing societal challenges. Governments across the world are re-thinking and re-orientating their rationale for innovation policy and 'new industrial policy'. In order to help realise the UN's Sustainable Development Goals and international climate change targets, governments are redesigning their innovation portfolios, focusing more on the formulation and implementation of a goal-oriented strategy (Wanzenböck et al., 2020). The turn to missions has thus moved directionality to the centre of attention in innovation policy besides rate and propensity of innovation, opening up for more diverse and contested roles and rationales for state action (Borrás and Edler, 2020). The European Union led the way with its Green New Deal (EC, 2021), with specific implications for its Horizon Europe research and innovation program.

While in the 1970s–2000s innovation policy was mainly geared towards economic growth, national and regional competitiveness and jobs — today climate change and reduction of inequality, poverty and pollution are considered key challenges and opportunities for innovation policy. Conceptualisations such as 'mission-oriented innovation' (Mazzucato, 2018), 'transformative innovation policy' (Haddad et al., 2022; Schot and Steinmuller, 2018; Steward, 2012), 'mission-oriented innovation systems' (Hekkert et al., 2020) and 'challenge-oriented regional innovation systems' (Tödtling et al., 2021; Trippl et al., 2023) have helped to articulate the scale of this policy trend. However, so far this challenge-led innovation policy thinking has yet to get to terms with its geographical dimensions, spatial context and multi-level governance (Binz et al., 2020; Coenen et al., 2015).

The origins of research on mission-oriented innovation policy can be traced back to two main streams of literature. First, industrial innovation policy (e.g., Ergas, 1987; Freeman and Soete, 1997, Mowery et al., 2010; Foray et al., 2012) and, second, socio-technical transitions (e.g., Geels, 2002; Geels and Schot, 2007). The first stream is strongly linked to the work by Henry Ergas who introduced the 'mission'- terminology by distinguishing between mission-oriented innovation and diffusion-oriented technology policy designs (Ergas, 1987). His work in the 1980s and 1990s looked into national and international public innovation programmes that were aimed at fixing market and system failures through targeted technology-push and direction-setting policies. The identified mission-oriented approaches were described as centralised and concentrated on a limited number of technologies and larger firms in fields such as military technology, agriculture, energy or aviation (Ergas, 1987). Prominent examples of those policies are the cross-country efforts in the context of Airbus or the European Space Agency (ESA). Chris Freeman and Luc Soete have also played a prominent role in conceptualizing and empirically analysing industrial innovation policies that are targeted at specific new technologies. At the same time, critical voices pointed out that the favouring of specific development paths can significantly disadvantage alternative technological trajectories (Cantner and Pyka, 2001).

Over the last few years, a new form of mission-oriented innovation appeared, one that goes beyond a sole market fixing and technology-push approach through public R&D. It focuses on solving grand societal challenges such as climate change, health, and environmental degradation through both a market creation mechanism and scaling-up of successful approaches. This 'new' normative-driven and outcome-oriented approach is strongly linked to Marianna Mazzucato who popularised this new understanding (Mazzucato, 2016, 2018, 2018b). In a series of books (Mazzucato, 2011; Mazzucato, 2021), drawing on progressive economic thinking and revisiting historical cases, Mazzucato proposes a large role for governments creating deliberate, mission-oriented programs to enable experimentation and collaboration across the public and private sector. Despite the growing popularity of Mazzucato's take on the role of public sector actors in providing directionality for innovation policy, there are also critical voices. Wennberg and Sandström (2022) have published an edited book questioning the idea of the 'entrepreneurial state'. The authors argue for a more market-oriented rather than state-led innovation policy and point to the lack of empirical evaluation and evidence for mission-oriented programs for societal challenges, aspects that are also discussed in this paper.

Mission- and challenged-led innovation policy is embedded in a scholarly tradition of research into the relation between innovation and societal challenges and impact (e.g., Geels, 2002; Geels and Schot, 2007; Weber and Rohracher, 2012). As grand societal challenges are often wicked problems, they require systemic transformations beyond a technological fix. Along the heuristic framework of the multi-level perspective (MLP), Geels and colleagues have shown in many empirical examples that socio-technical change is the result of multifaceted pre-conditions and processes that involve the interplay between a variety of stakeholders, institutional arrangements and infrastructural and

technological changes. These assumptions are now reflected for instance in the European Commission's 'missions' towards concrete solutions for challenges such as climate change, health, or urban sustainability issues. For each mission, tailored policy measures, new legislation and a broader involvement of civil society and other actors to achieve measurable goals are incorporated (EC, 2021).

3. Methodology

We explore the recent 'Innovation District' and 'Mission-Oriented Innovation' literature by using a structured search for articles (see Fig. 1) (Depraetere et al., 2021). We used two search strings with keywords for identifying relevant publications in Scopus, one of the major bibliometric databases of peer-reviewed academic publications. The keywords needed to appear in titles or keywords or abstracts. A language specification was applied, with all articles being included in the review process being written in English. No restriction was applied to the date of publication - the collected data covers publications until the end of 2020. We excluded irrelevant or highly technical disciplines. Abstracts were screened for relevance in Covidence, a literature review management platform.

The first search string identified published articles related to 'Innovation District' and associated concepts. This search string draws on a recent systematic review of the Innovation District literature (Yigitcanlar et al., 2020). For this study, the following keywords were selected to capture various permutations of innovation district: ("innovation precinct" OR "innovation district" OR "innovation neighbourhood" OR "innovation neighbourhood" OR "innovation cluster" OR "knowledge

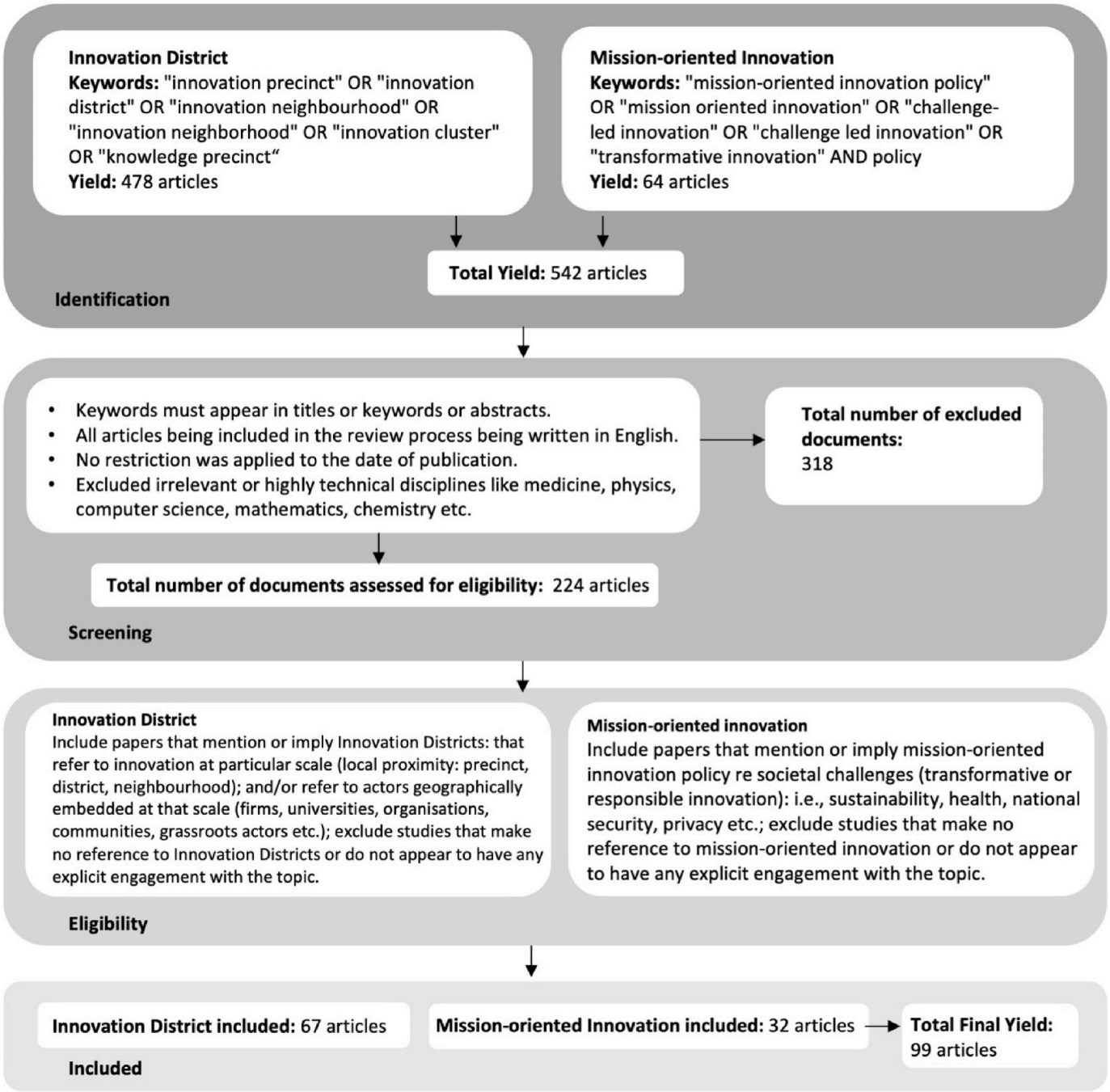

Fig. 1. Overview of the selection process and criteria of the literature review.

precinct"). This search string yielded 478 articles. Next, we extracted basic data from the Scopus search including title, author/s, abstract, year published, journal, and tags. This data was exported as a RIS file and then screened for relevance in Covidence based on explicit reference to Innovation Districts. The selection criteria for scanning title, abstracts and keywords were as follows: include papers that mention or imply Innovation Districts; that refer to innovation at particular scale (local proximity: district, neighbourhood); and/or refer to actors geographically embedded at that scale (firms, universities, organisations, communities, grassroots actors etc); exclude studies that make no reference to Innovation Districts or do not appear to have any explicit engagement with the topic. After the screening, 181 articles that met the selection criteria were fully read by at least two of the researchers. Furthermore, for unclear cases, for example, when two researchers did not come to consensus, we involved a third researcher to assist for reaching consensus. As a result of full paper reading, we further excluded articles that made no reference to Innovation Districts, or did not appear to have any explicit implications for this topic and these do not appear in the results. Following this we were left with 67 articles on the subject of Innovation Districts that matched our inclusion criteria.

The second search string identified published articles related to 'mission-oriented innovation' and associated concepts: ("mission-oriented innovation policy" OR "mission oriented innovation" OR "challenge-led innovation" OR "challenge led innovation" OR "transformative innovation" AND policy). This search string yielded 64 articles. We also used a combination of the two search strings (alternative search string for mission-oriented innovation policy). This search did not produce any results, which indicates that the debates on Innovation Districts and debates on Mission-Oriented Innovation are entirely separated in academic literature. We followed the same extraction process for the Mission-Oriented Innovation literature. The selection criteria for scanning title, abstracts and keywords were as follows: include papers that mention or imply mission-oriented innovation policy re societal challenges, searching for keywords such as sustainability, health, national security, privacy; exclude studies that make no reference to Mission-Oriented Innovation or do not appear to have any explicit engagement with the topic. After the screening, 43 articles that meet the selection criteria were fully read. As a result of full paper reading, we further excluded articles that made no reference to mission-oriented innovation, or did not appear to have any explicit implications for this topic and these do not appear in the results. Following this we were left with 32 articles on the subject of Mission-Oriented Innovation that matched our inclusion criteria.

The literature resulting from this search process was then analysed in two different ways. First, we used basic bibliometric analysis to sketch the general contours by identifying (1) the main references that both literatures draw on; and (2) the points of intersection between both literatures. For this, we downloaded the bibliometric information of each article in the two subsets, i.e., 32 for Mission oriented innovation; and 67 for Innovation Districts, including the author keywords and references from the Scopus database. In order to glean into the most influential scholarly works in each subset, we cleaned, counted and ranked the cited references. Sources with multiple editions, like books, were counted as one.

The points of intersection between ID and MOI were located using the author keywords. Author keywords are the keywords that are determined by the authors of their own articles, thereby showing the essential topics from researchers directly. Co-occurrences of keywords were identified and counted for the entire corpus of both ID and MOI articles. We then earmarked author keywords that were used by both the ID literature and the MOI literature as points of intersection and depicted these relationships in a co-occurrence network graph.

Second, we deployed qualitative analysis of the literature through structured reading, coding and interpretation of the material. All 99 articles were read in full by at least two researchers and a manual concept driven coding approach was used to extract data that appeared in the included articles. The following common information (Table 1) was sought and extracted for all included publications guided by the objectives of the study and the research questions.

These categories for analysis were chosen for two reasons: firstly, the reading of the literature indicated that these were key themes of interests to researchers who were examining one or the other of Innovation Districts or Mission-Oriented Innovation; and secondly, they emerged as key ideas that would shape the conceptualization of Mission-Oriented Innovation Districts. Clearly, the different orientation of the two kinds of Innovation Policy meant that current examples provided quite different responses. Scale alone meant that the theoretical framing of missions was quite distinct from the focus on dynamic knowledge-oriented partnerships that was at the heart of Innovation District development. However, developing a coherent framework for MOID would require a bridging of the prior parallel concepts.

Two limitations to this approach need to be noted. Firstly, there is a considerable amount of work published outside of peer-reviewed journals. In particular consideration of these issues in books is not included in our analysis, nor is grey literature. Secondly, peer-reviewed papers can be published up to 2 years after the substantive research was undertaken. That is generally an issue for scoping reviews because they are reporting on the state of knowledge that is possibly two years old. This is an issue for this work in particular, given that both fields are relatively young.

The results are reported according to the framework set out in the previous section.

4. Results

4.1. Characterising the literatures: knowledge-bases and points of intersection

Over the last years there has been a rapid uptake of publication on ID (see Fig. 2). The large majority of articles (about 75% of the 67 articles) were case study-based publications. Most of them report on success stories of single or multiple ID, often based on an anecdotal or other qualitative research design approach. In contrast, the majority of MOI articles were of a theoretical-conceptual nature, followed by papers with theoretical sections informed by case studies or examples, and papers with a stronger empirical/analytical lens.

Table 2 and Table 3 show the 8 most cited references in both MOI and ID literature. These tables confirm the initial view from section 2 that both literatures are drawing on a range of longer-standing scholarly debates, with different strands of literature underpinning both subsets. Another notable observation is that many of the MOI references are published in Research Policy, whereas ID literature tends to be more

Table 1
Analytical categories and related research questions.

Analytical categories	Innovation Districts	Mission-oriented Innovation
Understandings, definitions and objectives	How are IDs understood and defined? What are the underlying logics?	How is MOI understood and defined? What are the underlying logics?
Theoretical-conceptual underpinnings	What theories and frameworks are used discussing IDs	What theories and frameworks are used discussing MOI?
Analytical and methodological approaches	How are IDs (empirically) explored?	How is MOI (empirically) explored
Evaluation	What is considered to matter in terms of inputs, outputs, societal challenges in IDs?	What is considered to matter in terms of inputs, outputs, societal challenges in MOI?
Governance	Who is governing IDs and what are the key processes?	Who is governing MOI and what are the key processes?

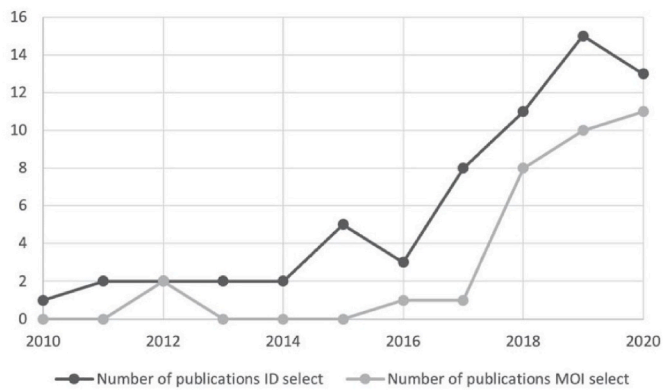

Fig. 2. Overview of the publications selected for this study (identified publications, 2010–2020).

Table 2
Most cited reference in the MOI literature.

Rank	Authors (Year)	Title	Outlet	Occurrences
1	Mazzucato (2016)	From market fixing to market-creating: A new framework for innovation policy	Industry and Innovation	17
2	Schot and Steinmueller (2018)	Three frames for innovation policy: R&D, systems of innovation and transformative change	Research Policy	15
3	Mazzucato et al. (2020)	The Entrepreneurial State: Debunking the Public vs, Private Myths in Risk and Innovation	Book	14
4	Weber and Rohracher (2012)	Legitimizing research, technology and innovation policies for transformative change. Combining insights from innovation systems and multi-level perspective in a comprehensive 'failures' framework	Research Policy	14
5	Foray et al. (2012)	Public R&D and social challenges: what lessons from mission R&D programs?	Research Policy	11
6	Lundvall et al. (2002)	National Systems of Innovations: Towards a Theory of Innovation and Interactive Learning	Research Policy	11
7	Kivimaa and Kern (2016)	Creative destruction or mere niche support? Innovation policy mixes for sustainability transitions	Research Policy	9
8	Mowery et al. (2010)	Technology policy and global warming: why new policy models are needed	Research Policy	9

influenced by books.

Fig. 3 shows the points of intersection between MOI and ID literature. This visualisation confirms our initial expectation that there is very limited cross-fertilization and debate. Only four keywords act as points of intersection between the two literatures: "innovation ecosystems", "regional development", "regional policy", and "innovation systems".

Table 3
Most cited references in the ID literature.

Rank	Authors (Year)	Title	Outlet	Occurrences
1	Katz and Wagner (2014)	The Rise of Innovation Districts: A New Geography of Innovation in America	Book	25
2	Florida (2002)	The Rise of the Creative Class. And How It's Transforming Work, Leisure and Everyday Life	Book	18
3	Pancholi et al. (2015)	Public space design of knowledge and innovation spaces	Journal of Open Innovation	17
4	Porter (1990)	The Competitive Advantage of Nations	Book	14
5	Porter (1998)	Clusters and the new economics of competition	Book	13
6	Saxenian (1994)	Regional Advantage	Book	12
7	Porter (2000)	Location, competition, and economic development: Local clusters in a global economy	Economic Development Quarterly	10
8	Storper and Venables (2004)	Buzz: Face-to-face contact and the urban economy	Journal of Economic Geography	10

4.2. Understandings, definitions and objectives

Most ID publications analysed in this study unsurprisingly refer to the work by Katz and Wagner (2014) and point to their definition of ID: "Innovation districts bring together leading-edge research institutions and high-tech companies and connect them to start-ups, business incubators and accelerators" (Katz and Wagner, 2014). Universities also play an important role as anchor institutions for ID due to their spatial scale and by placing local activities onto the "global innovation landscape" (Pancholi et al., 2020). The analysis of the MOI literature showed an, equally unsurprising, strong affinity for Mariana Mazzucato's conceptualization and definitions of MOI. While the idea of MOI is not anti-capitalist or neoliberal per se, Mazzucato et al. (2020) points out that some markets need guidance in order to recognise societal goals.

Despite increasing critique of ID's business focus and an implicit neoliberal agenda, as well as unintended consequences such as gentrification processes (Morisson and Bevilacqua, 2019), an important logic of ID remains that they are supposed to stimulate local economic development. The narrative of ID as 'pockets of growth' (Cosgrave et al., 2013) can be found particularly in earlier publications (see also Yigitcanlar et al., 2008). However, the purpose of innovation beyond economic objectives and performance indicators is unclear. Some publications bring together ID and technological innovation within the Smart City debates (for example, Cosgrave et al., 2013; Dezi et al., 2018).

Most authors discuss and understand ID as the result of various networks of stakeholders. In most of the analysed publications aspects around multi-stakeholder involvement play a prominent role. A wide range of actor constellations involved in ID are described and highlighted. A common understanding is that firms embedded in ID rely on close linkages to other firms, research facilities and public sector agencies to exchange knowledge and expertise, and to collaborate.

While the literature is lucid on the objectives of MOI, there is lack of clarity around the underlying processes and drivers. As the higher number of conceptual-theoretical papers in our review indicates, the debates often remain on a meta level, pointing to the state or supranational entities as the key actors driving MOI. The state is widely

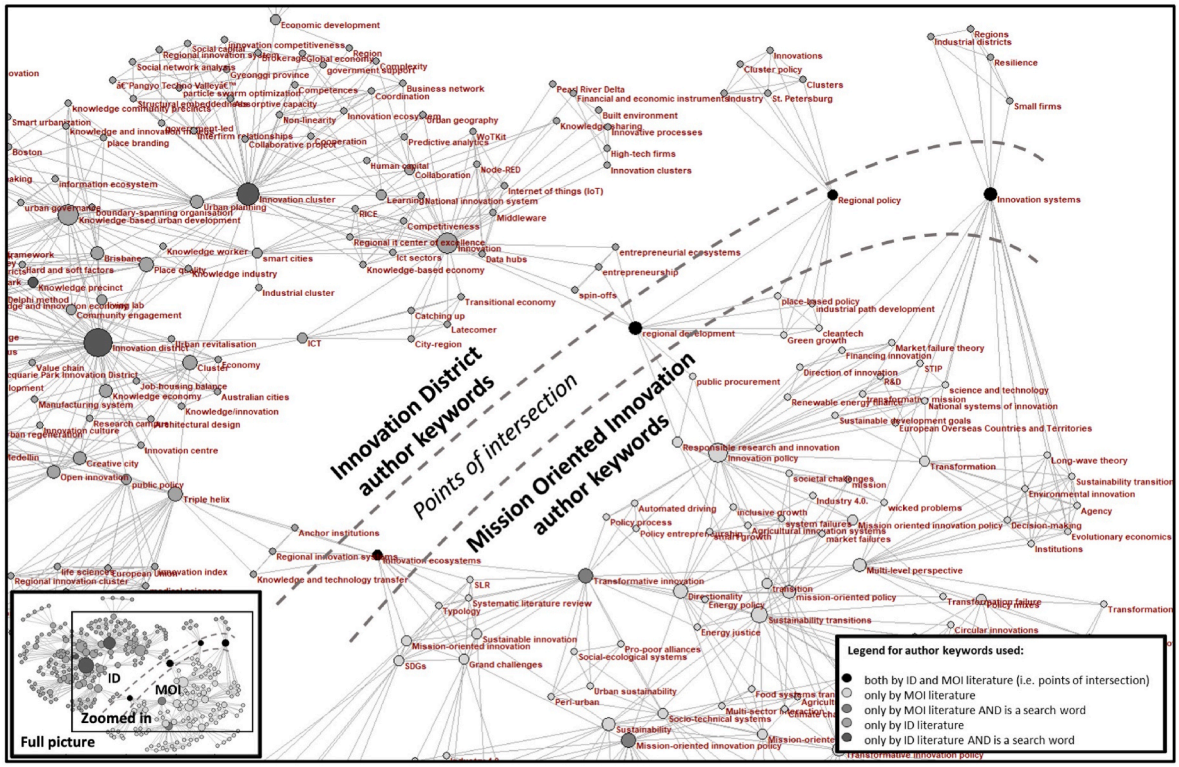

Fig. 3. Points of intersection between MOI and ID literature.

seen as essential in formulating and implementing innovation policies that address a variety of social needs and pressing societal challenges such as climate change, environmental degradation or growing socio-economic disparities (e.g., McKelvey and Saemundsson, 2018).

ID literature has a particular spatial perspective in the sense that IDs are understood as a new land use type, explored through an urban planning or urban design lens. Scholars are analysing aspects framed around 'place quality', 'place-making' or 'place branding' (for example, Esmaeilpoorarabi et al., 2018; Yigitcanlar et al., 2016). Esmaeilpoorarabi et al. (2020, p. 10) argue that in order to promote community engagement and physical integration, ID should "be seen as distributed clusters of innovative activities across the neighbourhood", rather than merely transplanting traditional 'science/technology/innovation park' structures into urban environments. Arenas et al. (2020) examine the Medellin ID through the lens of urban renewal policy and evaluate its effects on the economic development of a nearby neighbourhood.

In contrast, the analysis of the MOI literature unveiled a lack of spatial awareness. Despite Robinson and Mazzucato's (2019) clarification that it is not a central state that should dictate from the top down, and that it is supposed to be a state that administers public agencies and dynamic innovation systems that include bottom-up initiatives, there is generally a lack of debate about the implications of MOI for spatial entities below the national or supra-national level, such as regions and cities and for their interactions in a multi-level governance system. Just recently scholars have pointed to the gap of the missing contextualisation of societal challenges and spatial scales in the discussion about MOI (Klerkx and Begemann, 2020; Uyarra et al., 2019; Wanzenböck et al., 2020). Drawing on examples from food innovations, Klerkx and Begemann (2020) argue that the geographical boundaries are fluid, they can evolve and develop simultaneously at different locations and/or policy levels.

4.3. Theoretical-conceptual underpinnings

The previous section focused on descriptions and definitions of innovation precincts and associated objectives. Descriptions and definitions are often informed through the use of particular theories, conceptualisations and frameworks, which is what the current section will report on.

The growing literature on ID is built upon a variety of theoretical underpinnings in a wide range of related literatures and research strands. While some of the longer-term literature strands have been discussed in Section 2, here we focus on the more specific frameworks and concepts used in the recent MOI and ID literatures. Recent advancement in framework development for better understanding of ID suggests a conceptual framework around place-making (Pancholi et al., 2018). This framework defines places (and specifically ID) in four layers within the specialised context of ID. They are manifested as four dimensions: 'feature', 'form', 'function' and 'image'; they are surrounded by 'context' as the fifth dimension.

Morisson and Bevilacqua (2019, p. 472) conceptualize ID as "a place-based urban development strategy that aims to regenerate an under-performing downtown neighbourhood into a desirable location for knowledge and creative companies and workers". Moreover, Acuto et al. (2019) conceptualize ID as one type of Boundary-Spanning Organisations (BSO)–alongside living labs as another type of BSO.[3] Monardo (2018) suggests that ID represent place-based instances of 'smart specialization' implementation to promote physical, economic and social regeneration.

Most of the identified MOI literature refers to the work by Mazzucato and her co-authors to introduce the idea of missions, challenge-orientation in innovation policy and the role of the entrepreneurial state. Mazzucato (2018, p. 804) describes six characteristics for the promotion and implementation of mission-oriented policies: "diffusion

[3] Boundary-spanning organisations are hybrid structures that provide a platform to link internal networks of the city government with external actors, and in particular focus on engaging various types of stakeholders (Acuto et al., 2019).

of technologies, economic feasibility, shared sense of direction, decentralized control by public agencies, development of both radical and incremental innovations, and enabling complementary policies." Over the past few years, scholars from the fields of Innovation and Transition Studies and STI (e.g., Coenen and Morgan, 2020) have gained attention in the literature and contributed to the debate, especially in relation to the need for a 'directionality' function (Weber and Rohracher, 2012) to enable 'societally desirable systemic changes' (Gironés et al., 2020). Related work on transformative innovation policy and system innovation (Steward, 2012; Schot and Steinmueller, 2018) has also been influential. Concepts such as the Multi-Level Perspective (MLP), Technological Innovation Systems (TIS), Evolutionary Economics, technological development and diffusion process, and Innovation Ecosystem (van der Loos et al., 2020; Jütting, 2020) have been linked to the debates about MOI. Other work notes an emerging cross-fertilization between innovation studies and economic geography (Grillitsch and Hansen, 2019), along with STI policy and capacity building for the SDGs (Aminullah, 2020).

4.4. Analytical-methodological approaches

There are a variety of analytical approaches in the ID literature. The majority of extant empirical studies are based on qualitative and particularly explorative case studies. These studies have investigated (i) various elements of the 'feature-form-function-image' framework, for example, by investigating how residents of ID perceive the functions, spaces and opportunities of ID in the three largest cities in Australia (Esmaeilpoorarabi et al., 2020), (ii) to what extent triple helix agents are present in 22@Barcelona ID and four Brazilian ID (Pique et al., 2020) and Boston and San Diego (Bevilacqua et al., 2019), (iii) the extent of policy responses to mitigate the negative externalities of ID in the city of Chattanooga, US (Morisson and Bevilacqua, 2019), (iv) how to inform urban governance by considering the boundary spanning nature of several ID in Barcelona, Chicago, London, Medellin, Mexico City and Seoul (Acuto et al., 2019), and (v) using anecdotal approaches in providing insight on a typology of ID in terms of architectural design, such as Closed ID, Half-Open ID, and Open ID (Yun et al., 2018).

As mentioned above, most of the identified MOI work is rather conceptual-theoretical. However, some important analytical and methodological approaches have been developed and introduced. Like most ID literature, this work is qualitative in nature. Scholars have offered lenses on how to analyse these new types of innovation, the policies, drivers, instruments, challenges and opportunities, and impact. Special attention has been paid to the actors and change agents designing and organizing MOI. For example, Robinson and Mazzucato (2019) look closely at new partnerships and the drivers for MOI. Karo (2018) analyses change agencies embedded in national policies and bureaucracies. Other publications focus on the broader lessons from mission-oriented programs - a survey study by Hjalager and von Gesseneck (2020) provides insights into which themes and specific missions were prioritised over a period of three years.

A minority of ID studies used quantitative methods to investigate (i) relationship between compactness and innovation productivity of small businesses within cities (Hamidi and Zandiatashbar, 2019), (ii) Cloud-based data hubs that offer a promising approach to developing an Internet of Things (IoT) centric framework for Smart Cities (Cosgrave et al., 2013; Dezi et al., 2018), (iii) Geographic Information System (GIS) analysis to investigate the heterogeneity of industries ('what mix?', 'how much mix?', and 'where?') within downtown Sydney (Hawken and Han, 2017), and (iv) the effect of human capital measures on innovation (patent) of neighbourhoods in Helsinki (Kiuru and Inkinen, 2017). This group of quantitative studies are not, however, always explicitly about ID, rather sometimes about cities.

Notebly, a few contributions in MOI literature are forward looking, with some using quantitative or formal modelling techniques. To better design mission-oriented innovation policies Bauwens et al. (2020) introduce a scenario planning method based on potential future 'scenario' narratives. Raven and Walrave (2020) suggest a modelling of 'transformational failures' to analyse policy interventions and instruments and its impact over time to understand how they stimulate innovation system development. Klerkx and Rose (2020) consider how mission-oriented approaches can enable agricultural innovation in the context of future food system transition pathways to promote nutrition security.

While most ID literature has a strong local focus, one of the few analytical MOI approaches with a local policy lens is introduced by Uyarra et al. (2019) who analyse how local authorities prioritise and articulate the demand-side of innovation around social and environmental needs to better understand the new normative-driven forms of MOI. Similarly, Robinson and Mazzucato (2019) have pointed out the important role of policies for "bottom-up experimentation connecting regions and challenge-driven innovation policy". Gironés et al. (2020) used Kingdon's Multiple Streams Framework (Kingdon and Stano, 1984) to analyse transformative innovation policy in the context of an automated driving initiative case study in the Netherlands.

4.5. Evaluation of outcomes

While there is an increasing number of academic publications that coincide with a growing public and private sector interest in ID, it is somehow surprising that there are very few publications that offer concrete analysis of success or even offer indicators for evaluation of ID outcomes. Three approaches to evaluation emerged in the literature: traditional output-oriented, input-oriented and exploring 'place quality'.

The output-oriented approaches focus on measurable outcomes. The most common and traditional form of evaluation is analysing patented product and service as the outcome of activities within the ID for example, Mittal et al., (2020); Kiuru and Inkinen (2017) as well as growth in knowledge-intensive jobs (Edmunds et al., 2019). A more recent approach concerning output-oriented quantitative evaluation is the analysis of received business awards. Hamidi and Zandiatashbar (2019) introduce the idea of studying small business awards as an indicator for ID success. Moreover, Yun et al. (2018) suggest measuring the probability of encountering between individuals as an indicator of efficiency and creativity in ID.

Input-oriented approaches to ID evaluation look predominantly at a number of innovation input indicators such as R&D spending, number of R&D related jobs (e.g., Kiuru and Inkinen, 2017), and university research outputs such as number of scientific publications, funding, number of PhD students (Edmunds et al., 2019), and number of key actors in ID such as industry partners and the number of young scientists in the case of MINATEC in Grenoble, France (Finardi, 2013). Leon (2008) points to 22@Barcelona to argue that 'attraction policy' used by governments to lure the 'creative class', tends to create more jobs in the construction, retail and leisure sectors than jobs for knowledge workers.

Notably, publications in the urban planning scholarship often evaluate IDs in terms of 'place quality'. Esmailpoorarabi et al. (2018) introduce an evaluation framework comprising a set of indicators derived from three spatial scales (such as regional, city, cluster) to evaluate the place quality of ID,[4] along with the 'feature, form and function' of universities as anchors in the innovation landscape (Pancholi et al., 2020). Other related work suggests that IDs have not integrated well with surrounding neighbourhoods nor successfully engaged the local community in district activities due to 'physical, functional and relational' constraints (Esmaeilpoorarabi et al., 2020). In addition, ID in

[4] Gadecki et al. (2020) used the following seven criteria to evaluate two ICT sector IDs in Cracow, Poland, i.e., visibility of innovation, variety of functions, mobility, social functions of space, continuity/insulation, flexibility, and multisensorism. However, the origin of these criteria is not justified in the paper.

Boston, Dublin, and Barcelona have been criticised for increasing gentrification and not taking enough steps to promote diversity and inclusion (Monardo, 2018; Heaphy and Wiig, 2020). The results of a study on the Medellin ID from an urban development perspective, found that greater community integration and participation could address fears and anxieties around inequality and gentrification and extend economic benefits to the surrounding neighbourhood (Arenas et al., 2020). For future benchmarking, the KBUD framework (Yigitcanlar et al., 2008) provides some useful indicators to measure various aspects around MOIDs.

Given the relatively short time MOI has been conceptualised and applied, there is a very limited number of concrete empirical examples of evaluation processes and outcomes of MOI. However, in contrast with ID literature, MOI literature tends to understand evaluation in terms of providing directionality to overcome societal challenges. As Mazzucato (2018) puts this: successful mission-oriented policy experiments require a more dynamic framing around the institutional and organisational capacity that can potentially give directions. Uyarra et al. (2019) emphasise that evaluation needs to focus on how public value is created and how societal problems are framed and communities engaged in transformational change. Klerkx and Rose (2020) point towards adoption of mission-oriented approaches in future food system innovation including 'circular agriculture' in The Netherlands, 'acro-ecology' in Nicaragua and New Zealand's experiments in 'digital bioeconomies'. Marshall and Dolley's (2019) case studies of peri-urbanization in India and China reveal the significance of "long term alliances, embedded in grounded community experiences" along with "institutional ambiguity and lack of formal regulations" as enablers of transformative innovation. One of the concrete examples of MOI evaluation is done by van der Loos et al. (2020), in their evaluation of the Dutch wind turbine sector using the seven functions of Technological Innovation Systems (TIS). Raven and Walrave (2020) introduce a modelling concept to evaluate 'transformational failures' over time based on the analysis of policy interventions and instruments. Moreover, in the case of automated driving in the Netherlands, Gironés et al. (2020) found that self-interested agenda-setting by entrepreneurs led to a lack of 'concrete commitments', 'vague' definition of societal benefit and no allocation of responsibility resulting in policy failure.

4.6. Governance

While start-up companies often take centre stage in ID literature, it becomes clear that several other stakeholders from the private and public sector and higher education are essential parts of the ID actor ecosystem. That is why it is not surprising that helix models – double-(for example, public-private partnerships), triple-for example, academia, industry, government, and quadruple (triple + civil society) – are directly or indirectly referred to in the identified literature (for example, Pancholi et al., 2020; Pique et al., 2020; Yigitcanlar et al., 2020). Pangyo Techno Valley led by Gyeonggi province (Korea) for instance brings together diverse actors including central government, the provincial administration, local governments, universities, public research institutes, government research institutes, public enterprises, private sector firms and incubators (Lee et al., 2017). Recent contributions have increasingly called for an inclusion of civil society actors and specifically of the ID surrounding neighbourhoods, often loosely framed as 'the public' or 'the community' (for example, Esmaeilpoorarabi et al., 2020; Morisson and Bevilacqua, 2019; Pancholi et al., 2018). In this vein, Heaphy and Wiig (2020) explicitly argue that there are governance problems in regard to Silicon Docks in Dublin and the Seaport-South in Boston. They warned that the shift to governing these ID for the high-value tech sector – rather than a civic management strategy more inclusive of the existing residents – has created what they term a "corporate town" approach to urban development, which has led to a new era of uneven development.

There is a similar concern on multi-actor involvement in the MOI literature. Most authors make clear that MOI is the result of learning, feedback loops and experimentation within triple and quadruple helix innovation system models. The interaction and collaboration between research (basic and applied), entrepreneurial innovators, policy makers and civil society has been repeatedly highlighted (e.g., Fagerberg, 2018; Hjalager and von Gesseneck, 2020; Klerkx and Rose, 2020; Marshall and Dolley, 2019; Schot and Steinmueller, 2018; Jütting, 2020). Grillitsch and Hansen (2019) call for the strengthening of "governance learning capacities'' in order to achieve greater reflexivity and learn from policy success and failure (p. 2175). Schot and Steinmueller (2018) argue that new institutional arrangements are needed to create "bridging networks and alliances'' between "governments, markets and civil society (p. 1564). Mazzucato (2016) makes the point that public-private partnerships need to "rethink their roles'' through institutional structures to ensure that: "winning policies provide enough rewards to cover the losses, and that losses are used as lessons to improve and renew future policies" (p. 151).

MOI literature also emphasises a more inclusive approach to innovation with a stronger role for intermediaries and change agents that can act as a bridge between different stakeholders and their interests in the innovation systems (e.g., Robinson and Mazzucato, 2019; Karo, 2018). Klerkx and Rose also foreground the importance of "alternative inclusion processes" to enable responsible innovation that creates "more winners than losers" (2020, p. 5). Steward (2012) argues "new types of innovation actors and new types of knowledge" are required to enable transformative innovation that can bridge "the diversity of actors involved in system innovation – universities, business enterprises, community groups, public institutions, and research/technology organisations" (2012, 338). Gironés et al. (2020) call for 'public authorities' to play a more active role in decision-making and enable the participation of 'societal actors' in order to avoid capture by vested interests and orient policy directionality towards meeting societal challenges (2020, 9).

While there is agreement about the necessity of the multiplicity of actors in ID literature, there is a debate forming on whether IDs need organisational leadership, and if so, who should lead it. When looking at the case of 22@Barcelona, Pique et al. (2020) identify 'Triple-Helix Agents', intermediaries who helped to create a platform for exchange between different stakeholders in the entire ID ecosystem. In this instance, the City Council nurtured collaboration between universities and entrepreneurs. The authors argue that those agents play an important role in forming platforms in order to develop a shared vision on what to achieve in the ID. In a similar vein, Acuto et al. (2019) discusses the role of intermediaries framed as 'Boundary-Spanning Organisations', "hybrid structures that provide a platform to link internal networks of the city government with external actors, and in particular focus on engaging various types of stakeholders" (p. 94). From a neo-Marxist perspective, the nexus of 'urban business elites' and 'political allies' attempted to steer 'elected officials' in New York City local government to soften regulations in the urban tech economy, highlighting conflicts over land use and labour issues (Zukin, 2020).

Another framing for the organisational lead in IDs is the notion of 'Anchor Institutions', which Bevilacqua et al. (2019) have used to explore ID in Boston and San Diego. They identified a more public-sector driven ID in Boston, while the case study in San Diego was firm-driven. Monardo (2018, 331–332) suggests that Boston's 'institutional innovation' approach was sensitive to local inclusion and played "a sophisticated role in tailoring adaptive partnerships among anchor institutions, investors, knowledge subjects and local communities". Morisson (2020) argues that IDs are mostly initiated through public-private partnerships or private funding. Alternative approaches include Kelvin Grove Urban Village in Brisbane, which as Esmaeilpoorarabi et al. (2018) point out, was established as a 'public-private-community-based' joint initiative between the Queensland Department of Housing and Queensland University of Technology.

Regarding leadership in MOI, there is wide agreement about the

importance of new governance models and drivers that are needed to design and implement MOI policies. Most authors call for stronger government support from the top down to tackle societal challenges; and at the same time, highlight the necessity for stronger local and multi-level policy mechanisms. Bauwens et al. suggests multi-level or polycentric governance as a preferable scenario that combines: "broad societal goals set and enforced at higher levels, with autonomy for local actors to translate these goals into actions adapted to local settings" (2020, p. 11).

Surprisingly, the connections of IDs in a multi-level governance framework are rarely discussed. Fan et al. (2019) point out the challenges for city regions which are heavily influenced by other policy levels (from the EU, the national government, the regional government, the county government, to the municipal government).

5. Towards a research agenda on mission-oriented innovation districts

The analysis of the two fields of literature has revealed clear differences in the understanding, conceptualization and purpose of innovation. However, taken together, opportunities emerge from these findings to provide a more comprehensive and integrated approach to innovation policy and practice. The concept of MOID might help to overcome the ID's narrow economic growth agenda and the logic of innovation for innovation's sake. Bringing in 'directionality' and a more systemic perspective on how innovation is embedded in socio-technical structures could help shape innovation districts as hubs for sustainability transitions and transformational change. Here, innovation districts can function and act as boundary-spanning entities that not only bring together a wide range of new actors but also provide a platform for experimentation and knowledge exchange in urban contexts (see for example, Dickey et al., 2022; Fastenrath and Coenen, 2021; Sharp and Raven, 2021).

At the same time, the literature on ID provides a clearer understanding of the role of context specificity in which innovation takes place and, to some extent, in evaluating innovation processes and outcomes. In addition, an important finding of this study is that there is also common ground in the underlying logic of innovation governance – both literatures discuss that a multi-actor approach – often in the form of triple or quadruple helix models – is key to successfully fostering innovation.

Based on our literature review, we are now able to propose the following **definition of a MOID**:

> A Mission-Oriented Innovation District (MOID) is an urban area – similar to the size of several blocks or neighbourhoods but smaller than a city - where government, industry, knowledge institutes and civil society are deliberately situated and collaborating in place-based, socio-technical innovation to explore, experiment with and scale solutions for addressing societal challenges, all the while working to improve local area revitalisation.

While the terminology of MOID is an idea originally proposed in the current paper, and we have not yet come across it in actual real life, the conceptualization and definition can enable to identify MOID in practice, even if the terminology is not yet used as such. We argue that there is an opportunity to develop a research agenda framed around MOID. A general observation is that Mission-Oriented Innovation and Innovation District literature could more clearly highlight the longer-term research strands that they are drawing on. Any attempt to move forward with a research agenda on MOID needs to build upon and extend relevant and insights from previous scholarly writings. To better understand how MOID could work out in practice, a set of 5 research themes and questions can be addressed and unpacked. There are, first, integrating elements of directionality with elements of a place-based approach; second, a stronger evidence-base through empirical studies; third, new evaluation approaches to better understand and adapt missions as they develop; fourth, transformative approaches to the governance of MOID; fifth, MOID policy as a complementary layer of existing policies. The following Table 4 provides examples of research questions for each of these five themes.

5.1. Integrating directionality into innovation districts

Future research needs to explore which social and environmental challenges could be addressed through MOID – the UN's Sustainable Development Goals (SDGs) are potential instruments for systematically screening opportunities. Aspects of climate sensitivity (mitigation and adaptation), health and wellbeing, social and nature-based innovation, and energy transitions are just a few possible examples to be addressed. On the assumption that economic agendas will inevitably influence the development of innovation districts one way or the other, the question arises whether some missions could help to drive new and inclusive economic models and associated advantages. The potential for any MOID to engage with a specific mission depends on the locational specificities including industry interests and expertise, local governments/administrations, the interaction with universities and/or other research expertise, government and grassroots innovation. Therefore, setting agendas for MOID is closely linked to functioning governance mechanisms that are inclusive and reflexive (see e.g., Schot and

Table 4
Future research themes and questions around MOID.

MOID research theme	Example research questions
Integrating directionality into MOID	▪ How can MOID be designed to be place-based catalysts for transformative, mission-oriented change? ▪ What are the specific social and environmental goals and frameworks that guide MOID? How? ▪ What are the challenges and limitations of a MOID in integrating directionality?
Analytical and methodological enrichment of MOID	▪ How can comparative case study design improve understanding of place-specific versus more generic factors influencing MOID? ▪ Which quantitative and multi-method approaches can provide evidence of what works in MOID? ▪ How can transdisciplinary research methods be applied to advance MOID?
Evaluating MOID	▪ What defines a successful MOID? ▪ How can success of MOID be measured across multiple types of indicators? ▪ How can trade-offs between multiple indicators be captured and monitored? ▪ What are possible 'dark sides' and unintended consequences associated with MOID?
Governing MOID	▪ How should MOID be designed, planned and managed? ▪ Who intermediates and manages divergent public and private interests? ▪ Who are new actors and actor constellations that make MOID more inclusive? ▪ What are effective helix models to successfully govern MOID? ▪ Which levels of government should participate in MOID?
MOID as a policy arrangement	▪ What are effective policy mixes for MOID? ▪ How do policy mixes for MOID travel and diffuse trans-locally? ▪ How and why do local government and other policy actors engage in MOID? ▪ Which capabilities and resources are required at the local policy level for MOID? ▪ How do policy-making, -implementation- and evaluation practices at different scales complement and/or contradict?

Steinmueller, 2018; Stilgoe et al., 2013; Weber and Rohracher, 2012).

5.2. Analytical and conceptual enrichment

From an analytical and methodological perspective, both literatures have not developed a strong evidence base yet and have relied mostly on descriptive and exploratory case study approaches. The development of case studies remains important in order to expand the empirical body of work on real-world implementation of MOID. Yet there is also a need to develop more comprehensive, interdisciplinary and multi-method approaches to MOID, including comparative case study designs, quantitative assessments and transdisciplinary research methodologies.

Comparative case designs would strengthen the empirical base of MOID implementation projects within and across different institutional contexts, actor networks and geographies of innovation. What works in one district, city or region may fail in others due to a variety of place-based conditions, barriers and power dynamics. Comparative analysis of MOID can support deeper knowledge generation through identification of similarities and differences between multiple real-world examples and patterns across cases. Quantitative assessment is critical for measuring the performance of MOID relative to various criteria. The Brookings Institution, Project for Public Spaces (PPS), and Mass Economics developed an audit tool for measuring the assets of Innovation Districts that was trialled in Oklahoma City and Philadelphia. The tool was used to assess a variety of elements including critical mass of talent and financing; competitive advantage of distinctive assets; quality of place; and diversity and inclusion metrics (Wagner and Storring, 2016).

Further development and testing of evidence-driven assessment tools is needed and requires the addition of mission-oriented criteria to measure the capacity of Innovation Districts to address grand societal challenges. Transdisciplinary research methodologies can enrich the empirical evidence base for Mission-Oriented Innovation Districts given the hybrid nature of these emerging fields and the heterogeneity of innovation studies. Analytical and methodological approaches from transition studies, STS and system innovation can go some way toward addressing current knowledge gaps and allow for deeper reflection on questions related to directionality in innovation contexts. Recent work on transformative innovation policy foregrounds the multi-level nature of policy experiments and points towards a number of transition processes that include building and nurturing niche innovations, diffusing and mainstreaming these niches into wider systems and the unlocking of regimes (Molas-Gallart et al., 2021). These frameworks for the analysis of transition dynamics and experimental policies for systems change provide fertile ground for future empirical analysis of MOID.

5.3. Evaluating MOID

In terms of outcome evaluation, there is a need to develop evaluation frameworks that enable contrasting and comparing results across geographies and help to identify what works in MOID. The starting point can be borrowing and adapting the already existing frameworks in the Innovation District literature (Arenas et al., 2020; Katz and Wagner, 2014), as it is a more mature literature in comparison to Mission-Oriented policy literature in this regard. However, the designed frameworks should move beyond narrow economic, or innovation focussed evaluation frameworks (such as R&D investment or a number of new start-ups) by including more comprehensive metrics that encompasses societal and environmental challenges/goals. In doing so, MOID evaluation frameworks should be considered beyond accountability to funders and instead need to focus on how public value is created and how societal problems are framed and communities engaged in transformational change (see Raven and Walrave, 2020).

In terms of time perspectives, MOID evaluation frameworks should not be characterized by short-term and static perspectives. Instead, they should be designed and monitored from a learning-based and long-term perspective to enable continuous improvement over time. Moreover, self-interested and agenda-setting frameworks influenced by so-called policy entrepreneurs need to be avoided as they may lead to a lack of vague definition of societal benefit and no allocation of responsibility (Gironés et al., 2020). Last but not least, in designing the evaluation framework for performance of MOID, possible 'dark sides' or unintended consequences associated with emergence and development of MOID needs to be explicitly accounted for, such as gentrification.

5.4. Governing MOID

It becomes clear that governance is key when it comes to MOID. Some international examples show elements of a mission agenda, such as the @22 district in Barcelona, which includes aspects of social housing,[5] or the Medellin innovation hub that was initiated to drive the development of the city out of its drug-ridden past.[6] However, when we focus on MOID, the governance question somewhat changes, with new actors along the quadruple helix coming into play, governance of MOID becomes more complex. In addressing social and environmental issues, new constellations are needed that go beyond the traditional link between industry, university, and local government. New actors in the context of MOID could come from fields such as NGOs, grassroots innovation, and research disciplines that have rarely been involved in innovation districts, e.g., climatology, botany, housing, energy management, sociology, psychology. The question will be who can intermediate and manage the vested interests along the mission defined for the MOID. The new objectives and institutional arrangements related to the generation of profits and the development of public goods bring a new complexity that has not yet been addressed. New bridging networks and alliances are necessary to develop common understandings and arrangements (Schot and Steinmueller, 2018).

In order to address this, we argue that one helpful approach is to go back to principles of good governance. There is common ground as to what constitutes 'good governance' as indicated in three of the most known and used sets of principles. The United Nations Development Program Governance Principles (UNDP, 1997) can claim strong universal support. The European Commission's approach equally appears uncontested (for a more detailed analysis of the EU's approach to Good Governance, see Börzel et al., 2008). The UK's Nolan Principles of Public Life, like the EC's attempt, were designed to address the growing dissatisfaction of the public with public sector performance. In the context of MOID, we argue that the principles of good governance apply, but that the core challenge is in developing the capacity and capability of the governing body to be effective in intermediating. To align a quite diverse group of actors along the central point of a 'mission' requires a culture of collaboration and cooperation. Hence it requires careful design and nurturing, which also takes considerable time.

5.5. MOID as policy arrangements

This last section considers two additional aspects that research needs to tackle related to the idea of MOID as a policy arrangement. First, if MOID is to become an effective policy arrangement for driving Mission-Oriented Innovation from a place-based perspective, more research is necessary regarding the approach to enable effective and meaningful translation of the concept of MOID into actual policy instruments. Building on recent debates in existing innovation policy literature, this may entail research into the types and forms of different policy mixes (Kern et al., 2019) that can stimulate the successful establishment and evolution of Mission-Oriented Innovation arrangements in particular places (Magro and Wilson, 2019) and the trans-local circulation, scaling

[5] https://www.smartcitiesdive.com/ex/sustainablecitiescollective/case-study-22-barcelona-innovation-district/27601/.

[6] https://www.rutanmedellin.org//es/component/zoo/item/medellin-world-innovation-hub.

and re-embedding of learnings and results beyond these initial policy initiatives (Loorbach et al., 2020). The policy mobilities literature can provide a fruitful starting point for research into the circulation of policy mixes between particular districts, including research on who is enabling this circulation, how and why policy mixes and insights change as they diffuse and how they shape and are shaped by sending and receiving contexts (McCann, 2011; Sengers and Raven, 2015).

A second and related avenue for future research relates to a multi-scalar and embedded understanding of policy arrangements. A place-based, district scale approach to Mission-Oriented Innovation in the form of MOID raises questions about the role of policies and policy actors at different levels of policy-making, implementation and evaluation – from the local to the regional, national and international (see Coenen et al., 2015). A district-scale approach to Mission-Oriented Innovation opens up new possibilities for local policy actors to become influential in driving the policy innovation agenda and deciding on the appropriate mix of policy instruments, perhaps more so than is generally considered. This raises questions of innovation policy resources and capabilities at the level of local governments, municipalities and towns beyond the ones that have easy access to global sources of innovation policy capabilities and resources. Even more so, this raises questions on the complementarities between innovation policies and the required resources at the different scales, as well as their mutual embedding, interdependencies and actor responsibilities. Future research on MOID could conceptualize and empirically unpack how different policies across scales influence and constitute effective MOID policy-making, implementation and evaluation.

6. Conclusion

In this paper we have conducted a literature review to explore the connectivity between two popular policy concepts in the present-day innovation policy landscape, Innovation Districts (ID) and Mission-Oriented Innovation (MOI). We find that there is surprisingly little overlap between respective fields, which in part can be explained by the different theoretical roots on which these policy approaches draw. Overall, it can also be noted that both fields are at risk of remaining policy panaceas. Our literature review found that academic research on both topics is relatively sparse. Until recently, the debate in the case of mission-oriented innovation has been dominated by the work of Marianna Mazzucato - not the least due to the attention her work received by high-level politicians and popular media - leading to a rather myopic perspective on MOI and brushing over important aspects and critiques of MOI such as an idealised notion of the (nation) state and an underdeveloped understanding of multilevel governance. Similarly, the notion of ID has been largely introduced and translated to policy through consultants and the allure of success cases in global cities. Consequently, both concepts figured largely as global policy mobilities that are readily copy-pasted in the policy repertoire of national, regional and urban innovation strategies.

To address governance deficits prevalent in MOI and ID, the paper argues that there is substantial potential to utilise both policy concepts complementary to each other. That is, to ground MOI better in its spatial, social and economic context by means of ID while lending greater legitimacy and engagement with citizens by adopting a missions-approach to innovation districts. To this end, the paper introduced, defined and developed the notion of Mission-Oriented Innovation Districts (MOID). Furthermore, it provides a discussion of conceptual and analytical backbones of MOID, with a particular focus on governance and evaluation. Ultimately, theoretically informed and methodologically diverse empirical research is needed to critically assess how MOID might be construed and what governance and evaluation arrangements would enable and constrain effective MOID development. Policy experiments drawing on MOID are likely to mushroom in the near future, considering the urgency to address societal challenges and the popularity of missions and place-based approaches to innovation to do so. With major cities globally moving forward in reorienting their innovation policies to this particular scale, we hope the future research themes and questions around MOID that we outlined in this paper can pave the way for how to conceptualize, measure and govern MOID in more rigorous ways than suggested by theories-led-by-consultants.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Appendix

Literature on MOI

Authors	Year	Title	Source title
Salas Gironés E., van Est R., Verbong G.	2020	The role of policy entrepreneurs in defining directions of innovation policy: A case study of automated driving in the Netherlands	Technological Forecasting and Social Change
van der Loos H.Z.A., Negro S. O., Hekkert M.P.	2020	Low-carbon lock-in? Exploring transformative innovation policy and offshore wind energy pathways in the Netherlands	Energy Research and Social Science
Klerkx L., Begemann S.	2020	Supporting food systems transformation: The what, why, who, where and how of mission-oriented agricultural innovation systems	Agricultural Systems
Jütting M.	2020	Exploring mission-oriented innovation ecosystems for sustainability: Towards a literature-based typology	Sustainability (Switzerland)
Wanzenböck I., Wesseling J. H. et al.	2020	A framework for mission-oriented innovation policy: Alternative pathways through the problem-solution space	Science and Public Policy
Hjalager A.-M., von Gesseneck M.J.	2020	Capacity-, system- and mission-oriented innovation policies in tourism–characteristics, measurement and prospects	Journal of Policy Research in Tourism, Leisure and Events
Aminullah E.	2020	STI policy and R&D governance for the attainment of SDGs: envisioning the Indonesia's future	Asian Journal of Technology Innovation
Raven, R.; Walrave, B.	2020	Overcoming transformational failures through policy mixes in the dynamics of technological innovation systems	Technological Forecasting and Social Change
Klerkx, L.; Rose, D.	2020	Dealing with the game-changing technologies of Agriculture 4.0: How do we manage diversity and responsibility in food system transition pathways?	Global Food Security

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Authors	Year	Title	Source title
Hekkert, M.P.; Janssen, M.J.; et al.	2020	Mission-oriented innovation systems	Environmental Innovation and Societal Transitions
Bauwens, T.; Hekkert, M.; et al.	2020	Circular futures: What Will They Look Like?	Ecological Economics
Uyarra, E.; Ribeiro, B.; Dale-Clough, L.	2019	Exploring the normative turn in regional innovation policy: responsibility and the quest for public value	European Planning Studies
Robinson, D.K.R.; Mazzucato, M.	2019	The evolution of mission-oriented policies: Exploring changing market creating policies in the US and European space sector	Research Policy
Mazzucato, M.; Kattel, R.; et al.	2019	Challenge-Driven Innovation Policy: Towards a New Policy Toolkit	Journal of Industry, Competition and Trade
Marshall, F.; Dolley, J.	2019	Transformative innovation in peri-urban Asia	Research Policy
Hjalager, A.-M.; von Gesseneck, M.J.	2019	Capacity-, system- and mission-oriented innovation policies in tourismâ€"characteristics, measurement and prospects	Journal of Policy Research in Tourism, Leisure and Events
Hausknost, D.; Haas, W.	2019	The politics of selection: Towards a transformative model of environmental innovation	Sustainability (Switzerland)
Grillitsch, M.; Hansen, T.	2019	Green industry development in different types of regions	European Planning Studies
Diercks, G.; Larsen, H.; Steward, F.	2019	Transformative innovation policy: Addressing variety in an emerging policy paradigm	Research Policy
Diercks, G.	2019	Lost in translation: How legacy limits the OECD in promoting new policy mixes for sustainability transitions	Research Policy
Deleidi, M.; Mazzucato, M.	2019	Putting Austerity to Bed: Technical Progress, Aggregate Demand and the Supermultiplier	Review of Political Economy
Schot, J.; Steinmueller, W.E.	2018	Three frames for innovation policy: R&D, systems of innovation and transformative change	Research Policy
McKelvey, M.; Saemundsson, R.J.	2018	An evolutionary model of innovation policy: Conceptualizing the growth of knowledge in innovation policy as an evolution of policy alternatives	Industrial and Corporate Change
Mazzucato, M.	2018	Mission-oriented innovation policies: Challenges and opportunities	Industrial and Corporate Change
Kattel, R.; Mazzucato, M.	2018	Mission-oriented innovation policy and dynamic capabilities in the public sector	Industrial and Corporate Change
Karo, E.	2018	Mission-oriented innovation policies and bureaucracies in East Asia	Industrial and Corporate Change
Jenkins, K.; Sovacool, B.K.; et al.	2018	Humanizing sociotechnical transitions through energy justice: An ethical framework for global transformative change	Energy Policy
Fagerberg, J.	2018	Mobilizing innovation for sustainability transitions: A comment on transformative innovation policy	Research Policy
Busch, J.; Foxon, T.J.; Taylor, P.G.	2018	Designing industrial strategy for a low carbon transformation	Environmental Innovation and Societal Transitions
Mazzucato, M.; Semieniuk, G.	2017	Public financing of innovation: New questions	Oxford Review of Economic Policy
Mazzucato, M.	2016	From market fixing to market-creating: a new framework for innovation policy	Industry and Innovation
Steward, F.	2012	Transformative innovation policy to meet the challenge of climate change: Sociotechnical networks aligned with consumption and end-use as new transition arenas for a low-carbon society or green economy	Technology Analysis and Strategic Management
Leach, M.; Rockström, J.; et al.	2012	Transforming innovation for sustainability	Ecology and Society

Literature on ID

Pancholi S., Yigitcanlar T. et al.	2020	University and innovation district symbiosis in the context of placemaking: Insights from Australian cities	Land Use Policy
Heaphy L., Wiig A.	2020	The 21st century corporate town: The politics of planning innovation districts	Telematics and Informatics
Zukin S.	2020	Seeing like a city: how tech became urban	Theory and Society
Arenas L., Atienza M. et al.	2020	Ruta N, an island of innovation in Medellín's downtown	Local Economy
Morisson A.	2020	A framework for defining innovation districts: Case study from 22@ barcelona	Advances in Science, Technology and Innovation
Gadecki J., Afeltowicz L. et al.	2020	How innovation districts (do not) work: The case study of Cracow	European Spatial Research and Policy
Yigitcanlar T., Adu-McVie R., Erol I.	2020	How can contemporary innovation districts be classified? A systematic review of the literature	Land Use Policy
Radulescu C.M., Slava S. et al.	2020	A pattern of collaborative networking for enhancing sustainability of smart cities	Sustainability (Switzerland)
Esmaeilpoorarabi N. et al.	2020	How does the public engage with innovation districts? Societal impact assessment of Australian innovation districts	Sustainable Cities and Society
Esmaeilpoorarabi N. et al.	2020	How can an enhanced community engagement with innovation districts be established? Evidence from Sydney, Melbourne and Brisbane	Cities
Esmaeilpoorarabi N. et al.	2020	Conceptual frameworks of innovation district place quality: An opinion paper	Land Use Policy
Mittal H., Saurabh P., Rohit D. et al.	2020	What impedes the success of late mover IT clusters despite economically favorable environments? A case study of an Indian IT cluster	Technology Innovation Management Review
Pique J.M., Miralles F. et al.	2020	Application of the triple helix model in the creation and evolution of areas of innovation	Lecture Notes in Civil Engineering
Vorob'eva Y.A., Kuripta O. V. et al.	2019	Concept of innovation centre in Voronezh region, taking into account principles of "smart region	IOP Conference Series: Materials Science and Engineering
Morisson A., Bevilacqua C.	2019	Balancing gentrification in the knowledge economy: the case of Chattanooga's innovation district	Urban Research and Practice
Kookueva V.V., Tsertseil J. S.	2019	Formation of innovation clusters as a basis for the development strategy of Russia's territories	International Journal of Scientific and Technology Research
Fan P., Urs N., Hamlin R.E.	2019	Rising innovative city-regions in a transitional economy: A case study of ICT industry in Cluj-Napoca, Romania	Technology in Society
Wu K., Wang Y., Ye Y., Zhang H. et al.	2019	Relationship between the built environment and the location choice of high-tech firms: Evidence from the Pearl River Delta	Sustainability (Switzerland)

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Pancholi S., Yigitcanlar T. et al.	2020	University and innovation district symbiosis in the context of placemaking: Insights from Australian cities	Land Use Policy
Wang P., Lin X., Li S.	2019	Evaluation of government-supported provincial innovation competitiveness—Evidence from China	Growth and Change
Hamidi S., Zandiatashbar A.	2019	Does urban form matter for innovation productivity? A national multi-level study of the association between neighbourhood innovation capacity and urban sprawl	Urban Studies
Acuto M., Steenmans K. et al.	2019	Informing urban governance? Boundary-spanning organisations and the ecosystem of urban data	Area
Edmunds L.D., Gluderer S. et al.	2019	New indicators and indexes for benchmarking university-industry-government innovation in medical and life science clusters: Results from the European FP7 Regions of Knowledge HealthTIES project	Health Research Policy and Systems
Monardo B.	2019	Innovation districts as turbines of smart strategy policies in US and EU. Boston and barcelona experience	Smart Innovation, Systems and Technologies
Morisson A., Bevilacqua C.	2019	Beyond innovation districts: The case of medellinnovation district	Smart Innovation, Systems and Technologies
Bevilacqua C., Parisi L., Biancuzzo L.	2019	Multi-stage strategic approach in spatial innovation: How innovation district matter?	Smart Innovation, Systems and Technologies
Li J., Webster D., Cai J., Muller L.	2019	Innovation clusters revisited: On dimensions of agglomeration, institution, and built-environment	Sustainability (Switzerland)
Morisson A.	2019	Innovation centres as anchor spaces of the 'knowledge city'	Global Business and Economics Review
Esmaeilpoorarabi N. et al.	2018	Does place quality matter for innovation districts? Determining the essential place characteristics from Brisbane's knowledge precincts	Land Use Policy
Yun J.J., Zhao X., Yigitcanlar T. et al.	2018	Architectural design and open innovation symbiosis: Insights from research campuses, manufacturing systems, and innovation districts	Sustainability (Switzerland)
Wouters N., Hunt T. et al.	2018	Media architecture in knowledge and innovation districts: Designing a canvas for research, culture and collaboration	ACM International Conference Proceeding Series
Russell M.G., Smorodinskaya N.V.	2018	Leveraging complexity for ecosystemic innovation	Technological Forecasting and Social Change
Pancholi S., Yigitcanlar T. et al.	2018	Attributes of successful place-making in knowledge and innovation spaces: evidence from Brisbane's Diamantina knowledge precinct	Journal of Urban Design
Esmaeilpoorarabi N. et al.	2018	Evaluating place quality in innovation districts: A Delphic hierarchy process approach	Land Use Policy
Pancholi S., Yigitcanlar T. et al.	2018	Societal integration that matters: Place making experience of Macquarie Park Innovation District, Sydney	City, Culture and Society
Qian H.	2018	Knowledge-Based Regional Economic Development: A Synthetic Review of Knowledge Spillovers, Entrepreneurship, and Entrepreneurial Ecosystems	Economic Development Quarterly
Esmaeilpoorarabi N. et al.	2018	Place quality in innovation clusters: An empirical analysis of global best practices from Singapore, Helsinki, New York, and Sydney	Cities
Dezi L., Pisano P., Pironti M., Papa A.	2018	Unpacking open innovation neighborhoods: le milieu of the lean smart city	Management Decision
Burke M.	2018	Why Smart Cities are so 2017 (and what this means for urban transport innovation)	ATRF 2018 - Australasian Transport Research Forum 2018, Proceedings
Hawken S., Han J.H.	2017	Innovation districts and urban heterogeneity: 3D mapping of industry mix in downtown Sydney	Journal of Urban Design
Jones A.L.	2017	Regenerating Urban Waterfronts—Creating Better Futures—From Commercial and Leisure Market Places to Cultural Quarters and Innovation Districts	Planning Practice and Research
Lee S.Y., Noh M., Seul J.Y.	2017	Government-led regional innovation: a case of 'Pangyo' IT cluster of South Korea	European Planning Studies
Kiuru J., Inkinen T.	2017	Predicting innovative growth and demand with proximate human capital: A case study of the Helsinki metropolitan area	Cities
Carvalho L., Van Winden W.	2017	Planned knowledge locations in cities: Studying emergence and change	International Journal of Knowledge-Based Development
Scott H., Hoon H.J.	2017	Industry Mix and 3D Urban Heterogeneity: Insights into Innovation Districts	Procedia Engineering
Kumar N. et al.	2017	Low carbon cities and the development of cleantech innovation clusters in oil-rich economies: A case study on Masdar City	Sustainable Energy in Kazakhstan: Moving to Cleaner Energy in a Resource-Rich Country
Rothgang M., Cantner U. et al.	2017	Cluster policy: Insights from the German leading edge cluster competition	Journal of Open Innovation: Technology, Market, and Complexity
Way T.	2016	The urban university's hybrid campus	Journal of Landscape Architecture
Yigitcanlar T., Guaralda M. et al.	2016	Place Making for Knowledge Generation and Innovation: Planning and Branding Brisbane's Knowledge Community Precincts	Journal of Urban Technology
van Winden W., Carvalho L.	2016	Urbanize or Perish? Assessing the Urbanization of Knowledge Locations in Europe	Journal of Urban Technology
Lea R., Blackstock M., Giang N. et al.	2015	Smart cities: Engaging users and developers to foster innovation ecosystems	UbiComp and ISWC 2015 - Proceedings of the 2015 ACM
Giuffrida G., Clark J., Cross S.	2015	Putting innovation in place: Georgia Tech's innovation neighbourhood of Tech Square	Proceedings of the European Conference on Innovation and Entrepreneurship, ECIE
Veselovsky M.Y., Pogodina T.V. et al.	2015	Development of financial and economic instruments for the formation and management of innovation clusters in the region	Mediterranean Journal of Social Sciences
Dhewanto W., Lantu D.C. et al.	2015	The innovation cluster of ICT start-up companies in developing countries: Case of Bandung, Indonesia	International Journal of Learning and Intellectual Capital
Castro L.	2015	Strategizing across boundaries: revisiting knowledge brokering activities in French innovation clusters	Journal of Knowledge Management
Benneworth P., Ratinho T.	2014	Reframing the role of knowledge parks and science cities in knowledge-based urban development	Environment and Planning C: Government and Policy
Grodach C., Currid-Halkett E. et al.	2014	The location patterns of artistic clusters: A metro- and neighbourhood-level analysis	Urban Studies
Cosgrave E., Arbuthnot K. et al.	2013	Living labs, innovation districts and information marketplaces: A systems approach for smart cities	Procedia Computer Science
Finardi U.	2013	Clustering research, education, and entrepreneurship: Nanotech innovation at MINATEC in grenoble	Research Technology Management

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Pancholi S., Yigitcanlar T. et al.	2020	University and innovation district symbiosis in the context of placemaking: Insights from Australian cities	Land Use Policy
Helena Chiu Y.-T., Lee T.-L.	2012	Structural embeddedness and innovation performance: Capitalizing on social brokerage in high-tech clusters	Innovation: Management, Policy and Practice
Calamel L., Defélix C., Picq T., Retour D.	2012	Inter-organisational projects in French innovation clusters: The construction of collaboration	International Journal of Project Management
Foley H.C., Freihaut J., Hallacher P. et al.	2011	The Greater Philadelphia Innovation Cluster for Energy-Efficient Buildings: A new model for public-private partnerships	Research Technology Management
Charnock G., Ribera-Fumaz R.	2011	A new space for knowledge and people? Henri lefebvre, representations of space, and the production of 22@barcelona	Environment and Planning D: Society and Space
Clark J., Huang H.-I., Walsh J.P.	2010	A typology of 'innovation districts': What it means for regional resilience	Cambridge Journal of Regions, Economy and Society
Yigitcanlar T., Velibeyoglu K. et al.	2008	Rising knowledge cities: The role of urban knowledge precincts	Journal of Knowledge Management
Leon N.	2008	Attract and connect: The 22@Barcelona innovation district and the internationalisation of Barcelona business	Innovation: Management, Policy and Practice
Smith H.L.	2007	Universities, innovation, and territorial development: A review of the evidence	Environment and Planning C: Government and Policy

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