Johanna Kalliokoski

Inclusive Innovation Policy in Cities

A Relational Perspective

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Tiivistelmä

Innovaatiovetoinen kaupunkikehittäminen on kasvattanut suosiotaan maailmanlaajuisesti. Tähän on tunnistettu useita syitä: innovaatioiden ja keksintöjen syntymistä halutaan edistää ja samalla vauhdittaa talouskasvua sekä lisätä kaupunkien houkuttelevuutta investointikohteina. Lisäksi tavoitellaan miellyttävää ja hyvinvointia tukevaa kaupunkiympäristöä. Vaikka innovaatioiden hyödyt kaupungeille ja alueille ovat kiistattomat, innovaatioihin perustuvaa kehittämistä on tarkasteltu myös kriittisesti. Tämä liittyy etenkin sen potentiaaliin kasvattaa urbaania eriarvoisuutta ja heikentää sosiaalista kestävyyttä. Näin ollen tutkimuskirjallisuudessa on tunnistettu tarve inklusiivisemmalle innovaatiovetoiselle kaupunkikehittämiselle. Vaikka inklusiivisia innovaatioita itsessään on tutkittu laajasti, inklusiivista innovaatiopolitiikkaa kehittämisstrategiana on tutkittu vähän.

Tämä hallintotieteiden ja aluetieteen pääaineen väitöskirja käsittelee inklusiivista innovaatiopolitiikkaa sosiaalisesti kestävämpänä kehittämisstrategiana innovaatiopohjaisessa kaupunkikehittämisessä. Tutkimuksessa käytetään paikkaperustaista ja laadullista tutkimusstrategiaa, jonka avulla pohditaan relationaalisen näkökulman mahdollisuuksia edistää inklusiivisen innovaatiopolitiikan teoretisointia ja käytännön jalkauttamista kaupungeissa. Ensimmäisessä osatutkimuksessa tarkasteltiin inkluusiota tiede-, teknologia- ja innovaatiopolitiikan tavoitteena dokumenttianalyysin avulla. Tarkastelussa oli kaksi viitekehystä: Euroopan unionin (EU) tiede- ja innovaatio-ohjelmissa käytetty vastuullinen tutkimus ja innovointi (Responsible Research and Innovation, RRI) sekä Yhdysvalloissa käytetty Broader Impacts Criterion (BIC). Toisessa osatutkimuksessa tarkasteltiin lähiöiden sosiaalisesti kestävää kehittämistä ja kolmannessa inklusiivisia strategioita innovaatiokortteleille. Kaikkien tapaustutkimusten aineisto kerättiin pääasiassa puolistrukturoiduilla tutkimushaastatteluilla.

Tulokset osoittavat, että kaupunkien inklusiivinen innovaatiopolitiikka tulisi ymmärtää sekä sen tilallisen luonteen että relationaalisuuden kautta. Narraatiot ja diskurssit, politiikat, toimijat ja instituutiot sekä tilallisuus muodostavat lomittuvia relationaalisia kohtaamoja, joissa inkluusio ilmenee ja joiden kautta sitä voidaan tulkita. Tutkimus korostaa inkluusion relationaalisen ymmärryksen tärkeyttä, sillä inkluusion eri ulottuvuudet, kuten tilallinen, sosiaalinen ja taloudellinen, nivoutuvat yhteen innovaatioalueilla. Tarkoituksenmukaiset politiikkatoimet edellyttävät muun muassa kontekstiherkkyyttä ja monialaista yhteistyötä.

Asiasanat: inklusiivinen innovaatiopolitiikka, kaupunkikehittäminen, sosiaalinen kestävyys, relationaalisuus.

Abstract

Innovation-based urban development has gained increasing popularity in cities and urban areas worldwide. This is due to a multitude of reasons: promoting the emergence of innovations and inventions in the region, supporting economic development and investment attraction and creating attractive urban spaces for innovators and residents alike. While innovation undoubtedly brings benefits to cities, critical remarks have also been made regarding innovation-based development due to its potential to increase urban inequalities and other social challenges. Consequently, the need for more inclusive innovation-based urban development has been recognized in the research literature. Although inclusive innovation itself has been studied extensively, the potential of inclusive innovation policy as a development strategy remains underexplored.

This thesis in regional studies and administrative sciences examines inclusive innovation policy as a socially sustainable strategy for innovation-based urban development. It adopts a place-based, qualitative research approach to explore how relationality can contribute to both the theory and practice of inclusive innovation policy in cities. Sub-study one investigated the role of inclusion as an objective in science, technology and innovation (STI) policy through document analysis in the contexts of Responsible Research and Innovation (RRI) in the European Union and the Broader Impacts Criterion (BIC) in the United States. Sub-studies two and three focused on socially sustainable neighborhood development and inclusive strategies for innovation districts in Finland and Australia, with data for the four case studies collected primarily through semi-structured interviews.

Key results show that inclusive innovation policy in cities should be understood through both its spatial nature and its relationality to support stronger theorization and more effective operationalization. Narratives and discourses, policies, actors and institutions as well as spatiality together form a relational system in which inclusion manifests and through which it can be interpreted. The study emphasizes the importance of theorizing and understanding inclusion in urban innovation areas as relational, where multiple dimensions of inclusion, such as spatial, social and economic, are intertwined and where appropriate policy responses require context sensitivity and cross-sectoral collaboration.

Keywords: inclusive innovation policy, urban development, social sustainability, relationality.

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When I first started working on the research plan for this doctoral thesis, I did not know what to expect from the journey. I had recently completed my master's degree while working at the University of Vaasa as a research assistant and was pondering the next steps of my career and life in general. Progressing to a doctoral degree seemed like a natural choice at the time. But little did I know what an adventure it would end up being.

My mother often tells people that I was a curious child. Maybe that is what led me to study innovations in all my theses: I find them fascinating as a means of developing new ways of thinking, organizing, creating, and solving complex problems. At the same time, throughout my studies I have been deeply interested in societal issues, such as how governance systems work and how we can explain different kinds of phenomena in society. Concerned about the grand challenges of our time, and inspired by the Sustainable Development Goals, I ultimately decided to study cities and inclusive innovation policies for my doctoral degree.

The very first person who encouraged me to pursue a doctoral degree was my superior from my research assistant days, Dr., Docent Mari K. Niemi. It is not an understatement to say that this work would not exist without Mari acknowledging my potential and encouraging me to go further in my academic career, for which I am deeply grateful. Mari was also the person who first introduced me to my supervisor, Professor Helka Kalliomäki. Working with Helka has been a privilege, and I want to express my heartfelt thanks for all the years we have worked together so far. Helka has provided me with invaluable guidance and support throughout this journey, both in times of challenge and in paving the way for success. I am deeply proud to say that I have a role model and mentor like Helka, who is both an amazing person and a brilliant scholar.

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5.5.2026, Tampere

Johanna Kalliokoski

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Abbreviations

ANT	Actor-network-theory
BIC	Broader Impacts Criterion
CRediT	Contributor Roles Taxonomy
CUPL	Community Urban Planning Lab
EU	European Union
GDPR	General Data Protection Regulation

MID	Melbourne Innovation Districts
MOIP	Mission-oriented innovation policy
MWB	Minority and women in business
NRT	Non-representational theory
NSF	National Science Foundation
OECD	The Organisation for Economic Co-operation and Development
R&D	Research and development
RIS	Regional Innovation System
RRI	Responsible Research and Innovation
STEM	Science, technology, engineering, mathematics
STI	Science, technology, innovation
TENK	Finnish National Board on Research Integrity
TSP	Turku Science Park
UDHR	Universal Declaration of Human Rights
UK	The United Kingdom
USA	The United States of America
VOAS	The Student Housing Foundation in Vaasa

Declarations

The Copilot-service provided by the University of Vaasa was used to fix grammatical errors of the English language during the preparation of the manuscript. No content was ever created using AI; it was only used to correct already existing text. The author checked all suggestions made by AI and takes full responsibility for all content.

The originality of this thesis has been checked using the Turnitin software. The manuscript was also officially language checked by a third party before submitting it to pre-examination.

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Sub-studies

[1] Kalliomäki, H., Kalliokoski, J., Woodson, T., Kunttu, L., & Kuusisto, J. (2024). Inclusion as a science, technology, and innovation policy objective in high-income countries: the decoupling dilemma. *Science and Public Policy, 51*(5), 795–807. https://doi.org/10.1093/scipol/scae019. This article is published under the Creative Commons CC BY license.

[2] Niskavaara, M., Luoto, I., Lehtonen, T., & Kalliokoski, J. (2025). Reconsidering neighbourhood communality through the lens of intersectionality: resident and authority perspectives. *Geografiska Annaler: Series B, Human Geography, 107*(2), 135–153. https://doi.org/10.1080/04353684.2023.2283607. This article is published under the Creative Commons CC BY license.

[3] Kalliokoski, J. Inclusion in Innovation Districts: A Relational Perspective. [Submitted]. Preprint of a book chapter.

1 INTRODUCTION

1.1 Setting the scene

Like many other countries, Finland will face multiple societal challenges in the future attributable to climate change, an aging population, and economic uncertainty. These multifaceted challenges cannot be addressed effectively with outdated or siloed policy approaches, highlighting the need for an effective innovation policy that can unify diverse approaches to deliver effective societal solutions (Foray, Mowery & Nelson, 2012; Schot & Steinmueller, 2018). Moreover, recent developments, including the rise of disinformation, social and political polarization, populism, exclusionary policies, and the politicization of public services, have undermined the functioning of democracy (Irizarry et al., 2025). As a result, social justice is also at risk: "*democratic backsliding is not just a governance issue—it's an existential threat to social justice*" (Irizarry et al., 2025, pp. 312, emphasis in original). In this turbulent environment, inclusive institutional practices and policies have become central to maintaining an equitable and just society. At the point of writing in 2025, the increasingly volatile geopolitical, environmental, and economic landscape underscores the need to prioritize social sustainability and resilience in both research and policy agendas.

Situated within regional studies, this doctoral thesis adopts a qualitative research design to examine inclusive innovation policies in cities, applying relational perspectives to advance both theoretical conceptualization and practical understanding of the issue. Cities can be focal points for innovation policy, as they provide a stage for both opportunities and environmental and societal challenges (Connor et al., 2025), bridging national-level policy processes to operationalization on the ground. Cities themselves have also increasingly turned toward innovation, especially in matters of economic development. The aspirations for flourishing innovation ecosystems, technology parks, innovation districts, and business clusters have increasingly been focused on cities globally, often supported by regional or national governments to attract businesses, entrepreneurs, talented students, and a skilled workforce to the area. To do so, urban areas embrace visions of creative cities, smart cities, and knowledge-based development in their urban planning strategies. The global superstar and innovation hub, Silicon Valley, serves as a point of inspiration for many in their efforts to create thriving technology hubs. Urban planners and policymakers increasingly find themselves seeking to enhance the competitiveness and attractiveness of their cities to achieve that. While economic development and innovation are undeniably important to cities, and many of these

projects have also been beneficial, they are not without risks. Silicon Valley is in the vicinity of San Francisco, which today suffers from urban inequality caused by a lack of affordable housing, leading to the displacement of lower-income residents (Gyourko, Mayer & Sinai, 2013; Boschma et al., 2025). Urban innovation strategies have also been criticized in research, especially from an urban social sustainability perspective, with arguments that innovation-based urban development exacerbates urban inequality, resulting from gentrification and socio-spatial and economic polarization (Lee & Rodríguez-Pose, 2013; Zandiatashbar & Kayanan, 2020; Boschma et al., 2025). In addition to intra-urban inequality, polarization between regions has also been on the rise (Storper, 2021). This is central because cities have an interdependent relationship with rural and other regions, which are often the production sites of critical urban resources. In addition, cities often function as regional centers.

This dark side of innovation in the urban and geographical context has been investigated (Kemeny, Petralia & Storper, 2022; Boschma et al., 2025). At least two strands of literature identify why innovation could cause spatial inequality (Boschma et al., 2025): increased cost of living and labor market polarization (Lee & Rodríguez-Pose, 2013; Kemeny & Osman, 2018), which also contribute to income inequality and socio-spatial polarization (Zandiatashbar & Kayanan, 2020). Spatial inequality related to innovation has been documented at regional levels (Pinheiro et al., 2022) and is especially pronounced in larger cities (Breau, Kogler, & Bolton, 2014; Baum-Snow, Freedman, & Pavan, 2018). There is also evidence that modern, larger cities generally act as divisive forces (Connor et al., 2025). It is no wonder, then, that innovation-based development is often associated with gentrification, where investments made in urban areas change the value of properties and impose economic distress on people in weaker socioeconomic positions. The original cultural and perceived social value of the area may also be diminished in the process.

More knowledge will be required to operationalize innovation more equitably in urban settings. The topic of this thesis is *inclusion* owing to the term's ability to encompass multiple aspects "related to social equity, equality of opportunity and democratic participation. Accordingly, it presupposes a multi-dimensional theory of justice" that covers the multiplicity of issues necessary for more just outcomes (Papaioannou, 2014, pp. 188). Recent research has advanced theory on the *inclusive city* from a spatial planning issue into a multidimensional concept, encompassing social, economic, spatial, political, and environmental dimensions (Liang et al., 2022; Zhao et al., 2025). Therefore, in the context of this thesis, inclusion should not be understood merely as the act of including entities, such as people, organizations, or regions, into groups of other entities arranged in different ways, but as an integral part of social sustainability.

Some of the best-known approaches to societal inclusion are inclusive development and inclusive growth. Inclusive development has a long history of emphasizing social and environmental aspects within economic and other forms of development. It is often associated with efforts in low-income countries and marginalized communities yet also highlights the need to rethink development models globally (Papaioannou, 2014; Gupta & Vegelin, 2016). Inclusive growth, on the other hand, refers to economic growth extending its benefits to the poorest sectors of society and creating opportunities accessible to a notable part of the population (Gupta & Vegelin, 2016).

Gupta, Cornelissen, and Ros-Tonen (2015) provide a comprehensive synthesis of arguments for inclusion from the perspective of inclusive development, outlining five different perspectives found in the literature. The first relates to normative perspectives on inclusion. These connect to moral values and aim to reduce indignities and empower vulnerable people, such as the poor (Gupta, Cornelissen & Ros-Tonen, 2015; Sachs, 2004). The second argument addresses the legal perspective. Legality involves "institutionalizing certain social norms and promoting minimum acceptable conditions for all humans in society" (Gupta, Cornelissen & Ros-Tonen, 2015, pp. 37) and includes the human rights perspective, with the Universal Declaration of Human Rights (UDHR) as a key document shaping global human rights. This is further reinforced by national legislation, for example, in Finland through the Constitution of Finland (731/1999) and the Non-discrimination Act (1325/2014).

The grounds for the third argument can be found in economics. Gupta, Cornelissen, and Ros-Tonen (2015) and Pouw and McGregor (2014) suggest the aim could be to enhance growth potential by optimizing production and consumption processes and improving the subjective, material, and relational well-being of the population. Economic aspects are connected to the well-being perspective because people in vulnerable socio-economic positions are at increased risk of other types of exclusion, such as in health and education (Planes-Satorra & Paunov, 2017). As a part of economic production, the role of users has attracted a substantial body of research in technological and commercial innovation (von Hippel, 2005), but also in innovative activity specialized in countering societal challenges, such as social innovation (Ziegler, 2017). In today's increasingly competitive environment, individuals and society both lose if there are barriers to participation in economic and innovation processes. Gupta and Vegelin (2016) also reference a public health perspective, where access to healthcare may help to prevent the spread of disease. While maintaining a fair and just society, improved well-being through healthcare also reduces costs connected to public social and healthcare and should therefore be proactive and inclusive rather than reactive.

The fourth dimension introduces the security perspective. Inclusion plays a crucial role in enhancing security and societal resilience by reducing social conflict over livelihoods and resources, both domestically and internationally (Gupta, Cornelissen, & Ros-Tonen, 2015). Social exclusion and marginalization, combined with insufficient livelihood provisions, have also been recognized as potential threats to internal security in Finland (Eskola, 2018; Security Committee, 2025). Finally, Gupta, Cornelissen, and Ros-Tonen (2015) discuss the political dimension of inclusion, including democracy and participation. Liang and others (2022, pp. 74) describe political inclusion as "a rational and non-discriminatory citizen–state relationship based on civil and political rights," which connects to "democratic institutions, human rights, political participation, and national identity", and also embodies freedom and justice.

Prior research has also examined inclusion from the spatial and regional perspective. The European Union's (EU) cohesion policy has consistently addressed regional disparities and promoted economic development, aims that have attracted extensive scholarly attention (Farole, Rodríguez-Pose & Storper, 2011). Furthermore, the *Organisation for Economic Co-operation and Development* (OECD) has identified territorial inclusion as a critical element of inclusive innovation policy (Planes-Satorra & Paunov, 2017). Such policies focus on those regions exhibiting the lowest levels of innovative activity and seek to reduce disparities between leading and lagging regions. An element of territorially inclusive innovation policy involves enhancing the innovative capacities of individuals and enterprises within socioeconomically disadvantaged neighborhoods in urban contexts (Planes-Satorra & Paunov, 2017).

From an urban policy standpoint, research on inclusion may entail analyzing the equitable allocation of utilities, including housing, clean water, and other essential resources, alongside evaluating the abilities and capacities of residents to utilize these services effectively (Biswas, 2019). According to Liang et al. (2022, pp. 60), inclusion within the framework of the inclusive city is "multidimensional and comprised of spatial, social, environmental, economic, and political dimensions in which the characteristics of participation, equity, accessibility, and sustainability are sometimes interwoven." Urban studies have extensively examined the challenges confronting inclusive cities, including segregation, gentrification, and various forms of polarization, while engaging with theoretical perspectives such as *the right to the city* and *the just city* (Gerometta, Haussermann, & Longo, 2005; Harvey, 2003; Fainstein, 2013; Florida, 2017). Considering inclusive innovation policies, urban innovation policies have focused on, for instance, supporting entrepreneurs form underrepresented groups (Bramwell, 2021; Lee, 2023).

1.1.1 Inclusive innovation policy: definitions and tensions

In the context of innovation-based urban development, prior research has identified tensions and trade-offs between economic goals related to innovation and the pursuit of inclusive development (Zandiatashbar & Kayanan, 2020; Morales et al., 2025). These tensions underscore the imperative for additional scholarly investigation. To achieve this, it is necessary to define several key concepts. Innovation can be concisely defined as the development of novel entities, including products, processes, services, operational or organizational models, or any novelty that yields benefits through practical implementation or environmental impact (Hautamäki, 2011). Given its broad definition, it has been examined through a variety of approaches. On one hand, innovation has been acknowledged as essential for fostering economic growth and employment (Szopik-Depczyńska et al., 2018) by introducing novel products and services to markets and facilitating the establishment and operation of new firms and start-ups. Research on innovation economies, as exemplified by a subset of the extensive literature, addresses topics including research and development (R&D) aimed at entrepreneurial incentives associated with process and product innovation in the context of market competition and profitability (Cellini & Lambertini, 2008); patents (Cellini & Lambertini, 2008); innovation and knowledge management strategies to enhance firm competitiveness (e.g., Hidalgo & Albors, 2008); and innovation frameworks such as open innovation, which entails leveraging external sources and collaborative efforts for innovation, as opposed to relying exclusively on internal R&D activities (Chesbrough, 2003). This concept of innovation is commonly identified as the traditional or "mainstream" perspective, frequently linked to technological advancement and the generation of new products and services for consumer use (Heeks, Foster, & Nugroho, 2014).

However, within the innovation literature, a distinct strand of research has developed in response to critiques of the conventional concept of innovation, particularly concerning its linkage to increasing income inequalities and other manifestations of injustice (Heeks, Foster & Nugroho, 2014). Consequently, researchers have investigated alternative models of innovation designed to overcome the limitations inherent in conventional approaches (Heeks, Foster, & Nugroho, 2014; Chataway, Hanlin, & Kaplinsky, 2014). Noteworthy types of innovation within this category include grassroots innovation, social innovation, and inclusive innovation. Grassroots innovation is frequently characterized as "networks of activists and organizations generating novel bottom–up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved,", highlighting the function of innovation in developing sustainable solutions to societal challenges that are attuned to local needs and contexts (Seyfang & Smith, 2007, pp. 585). Such innovations often emerge from economically disadvantaged

communities (Heeks, Foster, & Nugroho, 2014). Likewise, social innovation concentrates on the development of novel solutions to urgent social challenges. Instead of responding to consumer demand, it aims to accomplish broader societal objectives (Mulgan et al., 2007).

Inclusion and innovation are notably interconnected within the scholarly literature on inclusive innovation, wherein researchers have analyzed multiple levels (Heeks, Foster, & Nugroho, 2014) and dimensions (Schillo & Robinson, 2017) of inclusion, alongside conceptualizations of inclusive innovation (Mortazavi et al., 2021). According to Heeks, Foster, and Nugroho (2014, pp. 177–178; see also Heeks et al., 2013), the inclusivity of innovation may be evaluated through the examination of various tiers of inclusive innovation:

> *"Level 1/Intention: an innovation is inclusive if the intention of that innovation is to address the needs or wants or problems of the excluded group … Level 2/Consumption: an innovation is inclusive if it is adopted and used by the excluded group … Level 3/Impact: an innovation is inclusive if it has a positive impact on the livelihoods of the excluded group … Level 4/Process: an innovation is inclusive if the excluded group is involved in the development of the innovation … Level 5/Structure: an innovation is inclusive if it is created within a structure that is itself inclusive … Level 6/Post-Structure: an innovation is inclusive if it is created within a frame of knowledge and discourse that is itself inclusive."*

When implementing this framework, it is essential to consider which groups have been historically excluded from innovation activities and processes, such as youth, women, marginalized communities, and individuals with disabilities (Heeks, Foster, & Nugroho, 2014).

Innovation policy encompasses the full range of activities undertaken by public organizations, and occasionally other entities, to promote innovation, with policy instruments functioning as mechanisms for implementation (Borrás & Edquist, 2013). Innovation policy has historically played a central role in the economic growth strategies of numerous countries, undergoing significant evolution and transformation over time. For instance, in Finland, an emphasis on technological advancement and investment in higher education since the 1960s has facilitated notable successes, exemplified by the case of Nokia (Alaja & Lemola, 2023). Previous positive outcomes have inspired an enthusiasm in cities, countries, and regions to promote innovation through diverse policy measures that persists to this day (although it may also be contended that this has become a requisite for survival in the global economic competition). However, as previously examined, innovation is not without risks. Concerns have been articulated regarding uneven regional

development, the disproportionate allocation of costs and benefits linked to broad technological paradigm shifts, and the escalating fragmentation of production stages within global value chains (Boschma et al., 2025); these phenomena may exacerbate various forms of inequality, encompassing territorial and economic disparities, both intra- and inter-nationally (Lee & Rodríguez-Pose, 2013; Storper, 2021; Bair et al., 2021; Boschma et al., 2025).

It is thus noteworthy that, notwithstanding the potential unintended adverse consequences, innovation policies have placed little emphasis on inclusive growth and social inclusion (Lee, 2023; Planes-Satorra & Paunov, 2017). The underlying cause of this phenomenon may partially arise from the tensions and trade-offs between social and environmental sustainability and economic development (Gupta & Vegelin, 2016; Morales et al., 2025). The resources of municipal governments are constrained, and implementing and advancing more inclusive processes frequently necessitates additional time, financial investment, and specialized expertise. Another potential explanation is the confidence in the trickle-down effect, defined as the belief that economic incentives targeting affluent segments of society will ultimately yield benefits for other sectors, a proposition that has been extensively debated in the literature (e.g., Akinci, 2018; Lee, 2023). Third, policies are frequently formulated in isolation, while inclusion has been incorporated into the agendas of various other policy domains, including urban policy, education, social policy, and tax policy, which consequently have addressed issues of innovation to a limited extent (Planes-Satorra & Paunov, 2017; Lee, 2023). Reconciling competing demands and integrating policies may present challenges for policymakers and public administrators (Brorström & Willems, 2021).

The limited focus on social inclusion is particularly significant given that mission-oriented and transformative innovation policy has gathered substantial interest in recent years within both academic research and practical applications, with the objective of achieving large-scale societal transformations (Mazzucato, 2018; Schot & Steinmueller, 2018). Although these emerging innovation policy strategies underscore the desirability of broader societal engagement, further scholarly and policy attention would be required to guarantee the inclusivity of these initiatives. As innovation policy increasingly encompasses broader societal objectives, it simultaneously extends into multiple domains of everyday life, the implications of which remain largely uncertain.

Some major research policy organizations and their programs, such as the EU's Horizon 2020 (2014–2020) and the US-based NSF's Broader Impacts Criterion (BIC), have addressed inclusion and reducing barriers to participation quite directly. Yet, doubts remain about whether these measures are achieving their intended impact

due to for example implementation and measurement challenges (Woodson & Boutilier, 2022; Tabarés et al., 2022; Kalliomäki et al., 2024). Planes-Satorra and Paunov (2017) also point out in their OECD working paper that, despite extensive work in other policy sectors, more inclusive growth has not been achieved in past decades. The World Inequality Report from 2022 points out that while inequalities have been reduced at the global level, inequalities within most countries have been increasing (Chancel et al., 2022). Therefore, the concept of 'inclusive innovation policy' is central to this thesis. Planes-Satorra and Paunov (2017, pp. 6, emphasis original) have defined it as follows: "*[...] inclusive innovation policies* – policies that aim to remove barriers to the participation of individuals, social groups, firms, sectors and regions underrepresented in innovation activities", highlighting the equal distribution of both benefits and opportunities in participation in innovation.

Although often used interchangeably, in this thesis, I differentiate between 'inclusive innovation policy' and 'policies for inclusive innovation' so that the latter is included in the former. Inclusive innovation policy can refer to policies that support innovations that are more inclusive in terms of their processes, outcomes, or broader impacts, but it can also refer to innovation policy itself being more inclusive, for example, in its territorial scope or in the societal goals it defines. The approach, therefore, aligns with the definition of Stanley, Glennie, and Gabriel (2018, pp. 8):

> *"Inclusive innovation policies are directed towards ensuring that the benefits and the risks of innovation are more equally shared. These policies will actively consider whose needs are met by innovation and how excluded social groups could be better served, focus on initiatives that promote broad participation in innovation, and take a democratic and participatory approach to priority-setting and the governance of innovation."*

Therefore, within their inclusive innovation policy framework, Stanley, Glennie, and Gabriel (2018) identify four distinct dimensions of inclusiveness: objectives, directionality, governance, and the generation of opportunities in innovation policy. The objectives referenced relate to the prioritization of innovation policy, and if the objectives also advance equity and sustainability, for example, or if there is an exclusive focus on technological advancement and economic growth. The directionality of innovation policy has recently attracted attention, especially in the context of mission-oriented innovation policies. In terms of inclusive innovation policy, that means paying attention to whose needs and interests innovation policies are serving and the degree to which the policy advances solutions to societal challenges (Stanley, Glennie & Gabriel, 2018). Participation in this context corresponds to the OECD's definition, encompassing the entities involved in innovation, whether individuals and social groups, sectors, or regions (Planes-

Satorra & Paunov, 2017). Governance considerations address not only the potential beneficiaries of innovation but also the management of outcomes with respect to associated costs and risks (Stanley, Glennie, & Gabriel, 2018). Additionally, the governance dimension concerns the determination of objectives and priorities in innovation policy, as well as the expansion of participation in such activities (Stanley, Glennie & Gabriel, 2018).

Furthermore, as noted by the OECD (2015), numerous dimensions of inclusive innovation activities encompass public services, including education, transportation, and healthcare, necessitating inter-institutional collaboration, for instance, among agencies accountable for innovation, education, infrastructure, and health. The significance of cross-sectoral collaboration in fostering innovation has been acknowledged within the frameworks of the triple- and quadruple-helix theories (Etzkowitz, 2003; Carayannis & Campbell, 2012). These foundations may be reoriented to address broader societal challenges, as will be examined in detail in Sub-study III of this thesis. The OECD posited in 2015 that, in the implementation of national policy guidelines at the local level, it is imperative to facilitate opportunities for local bottom-up initiatives to promote effective regional engagement and inclusive innovation activities.

Drawing upon the conceptualizations proposed by Stanley, Glennie, and Gabriel (2018) as well as the OECD (2015; Planes-Satorra & Paunov, 2017), this study adopts a subnational perspective on inclusive innovation policy, with a particular focus on urban contexts, as evidenced in the works of Bramwell (2021), Lee (2023), and Parsons et al. (2024). The rationale for the study of urban environments is multifaceted. The global population is undergoing rapid urbanization, and in 2025, a greater proportion of the overall population resides in cities than in rural areas or towns, and this trend of urban population growth is projected to persist (United Nations, 2025). Accordingly, the opportunities and challenges encountered by cities are progressively representative of those confronting humanity as a whole. Notwithstanding that, the literature on transformative innovation policy has not adequately addressed the spatial dimension and the associated challenges and opportunities that urban environments present for (inclusive) innovation policy (Uyarra et al., 2025). Moreover, a considerable body of literature addresses innovation as a driver of economic growth and the concept of inclusive innovation; however, limited research has examined inclusive innovation policies as policy frameworks within the context of urban development (Lee, 2023; Bramwell, 2021; Parsons et al., 2024). Therefore, inclusive innovation policy will be analyzed within an urban context, specifically at the neighborhood level, with the underlying rationale to be further elucidated in subsequent chapters. The key theoretical concepts of

inclusive innovation policy for cities from chapters 1.1. and 1.2. have been outlined in Table 1.

Table 1. The central concepts found in academic and policy literature on inclusive innovation policy in cities.

Concept	Definition
Inclusion	Multidimensional, encompassing theory of justice, which includes but is not limited to social, territorial, or spatial and economic inclusion (Papaioannou, 2014; Planes-Satorra & Paunov, 2017; Zhao et al., 2025).
Inclusive city	A city characterized by equitable opportunities and resource allocation. Considers social, spatial, and economic inclusion alongside environmental sustainability, as well as issues related to participation, equity, and political inclusion (Armendaris et al., 2015; Liang et al., 2022; Zhao et al., 2025).
Inclusive innovation	Innovation is characterized by inclusivity concerning processes, products, impacts, foundational frameworks, or other dimensions (Heeks et al., 2014).
Inclusive innovation policy	Policies are intended to facilitate equitable access to the resources and benefits of innovation across social, economic, and spatial dimensions. These policies underscore the equitable distribution and dissemination of innovation and its concomitant risks, alongside the participatory governance of innovation processes (OECD, 2015; Planes-Satorra & Paunov, 2017; Stanley, Glennie & Gabriel, 2018).

1.2 Research gap and questions

Cities have increasingly employed strategies to support inclusive innovation, either as part of economic development (inclusive growth) or as independent policies (Lee, 2023). However, as Lee points out, inclusive innovation as a policy agenda has not received much scholarly attention, especially at the urban level. Multiple policy domains converge within cities, including the urban, economic, and innovation forms (Kalliomäki, Oinas & Salo, 2024). In urban areas, the multifaceted manifestations of exclusion are especially prominent: challenges related to spatial, social, and economic exclusion are intertwined, leading to complex exclusion traps attributable to, for instance, segregation, uneven development, and scarcity of economic opportunities (Armendaris et al., 2015). This situation calls for a holistic understanding of inclusion

both within and across these domains. To address this need, this doctoral thesis, situated within regional studies, adopts a place-based research strategy to examine how relational perspectives can advance both the theoretical conceptualization and practical implementation of inclusive innovation policies in cities. The analysis foregrounds the interconnected character of inclusion across spatial, economic, social, and related domains.

In this thesis, relationality is understood as the dynamic, intra-active becoming of phenomena, such as inclusion, emerging through entanglement in *spacetimemattering*, a concept introduced by Barad (2007). It is connected to understanding space as relational, but instead of seeing the city constitutive of relations, it rather emerges through them. The relationship between space and relationality will be further elaborated in chapter three.

Prior literature on inclusive cities (Armendaris et al., 2015; Liang et al., 2022; Zhao et al., 2025) has recognized the multidimensional and intertwined nature of inclusion, yet scholars still underestimate its potential for theorizing inclusive innovation policy in cities. A focus on cities presents researchers with expanded opportunities to experiment and address contextual sensitivity in inclusive innovation policy, compared to that which most current scientific literature captures (Lee, 2023; Bramwell, 2021; Parsons et al., 2024), further highlighting the need for additional research. As innovation-based urban development has rapidly increased during the last decades and rising inequalities have accompanied it, exploring how the extensive knowledge on inclusion in urban studies could inform innovation policies for more just outcomes is worth doing, because "Increasing socio-technical, socio-economic, and socio-spatial polarization underscores inclusion as a critically important dimension of innovation" (Bramwell, 2021, pp. 242). In sum, the literature on inclusive cities as well as inclusive innovation policy in cities contains research gaps, and scholars need to apply more scientific scrutiny to advance these theories (Zhao et al., 2025; Lee, 2020; Lee, 2023; Parsons et al., 2024).

Therefore, the research questions are:

> 1. How does a relational conceptualization of inclusion advance both the theoretical understanding and practical design of inclusive innovation policies in urban contexts?
>
> 2. How does a neighborhood-level analytical lens enhance the conceptualization and operationalization of inclusive innovation policies in urban contexts?

These questions will be explored through three distinct sub-studies. The first study (Kalliomäki et al., 2024) explores the meaning of inclusion as an STI (science, technology, innovation) policy objective. Through the lens of policy divergence, we examine how "inclusion" has acquired divergent meanings ranging from inclusive co-production involving a wide variety of actors to the targeted inclusion of marginalized populations. The second study (Niskavaara et al., 2025) explores the questions of communality and social sustainability in two neighborhoods in the vicinity of Vaasa, Finland. The cases derived from the "Place-based innovations while developing residential areas – A double case study of the Olympic quarter and Ristinummi in the City of Vaasa" project, Suburban Innovation, in short. Utilizing actor-network theory and intersectional analysis, it is investigated how communality is narrated through resident and authority perspectives in the case neighborhoods. Three narration gestalts, representations of communality, are identified: inclusion, recollection, and segregation. The implications of these gestalts are then considered. The third study (Kalliokoski, submitted) explores innovation districts as policy nexuses and theorizes inclusion as relational for improved inclusion and social sustainability within innovation districts.

This thesis is structured as follows. In Chapter 2, the theoretical foundations of this thesis will be established by exploring how inclusive innovation policy has previously been studied in urban contexts. The ontological and epistemological underpinnings will be discussed in detail in Chapter 3 concerning methodology. Among others, the work of Karen Barad (2007) on material-discursive practices will be reviewed along with a discussion on the relational nature of space. In addition, the data, and methods of each sub-study will be presented with a description of research ethics. Chapter 4 summarizes the sub-studies, and Chapter 5 presents the results of this thesis. I demonstrate how narratives and discourses, policies, actors, and institutions, as well as spatiality, form a relational system for the manifestation and interpretation of inclusion in cities. Finally, Chapter 6 entails the conclusions and explores some future directions for research on inclusion and innovation-based urban development.

2 INCLUSIVE INNOVATION POLICY IN CITIES

2.1 Place-based approach

Before exploring urban social sustainability and inclusive innovation policy as a governance framework in cities, it is useful to explain two historical phenomena for urban innovation: neoliberal development and the creative city. The approach that involves shaping urban policies and planning according to economic principles and market interests, which the literature describes as neoliberal urban development. According to Oxford Dictionary of English (2025, MOT), the word neoliberal can be defined as "relating to or denoting a modified form of liberalism tending to favor free-market capitalism." Due to the dominance of technological and business-oriented mainstream innovation (Heeks, Foster, & Nugroho, 2014), innovation-based development in cities is often associated with neoliberal development.

The rise of neoliberal development can be traced back to the 1970s and 1980s as a response to the global recession and debt crisis of the time, and its impact on multiple geographical scales of nations and regions has been widely studied in geopolitical economy (Brenner & Theodore, 2002). Brenner and Theodore (2002, pp. 351) emphasize that urban restructuring projects in the framework of neoliberalism need to be understood in their multilevel contextual embeddedness framed by regulations, policies, institutions, and political struggles, highlighting the path-dependent nature of economic and urban development shaped by local actors. Scholars, including Brenner and Theodore (2002) and Smith (2008), asserted that uneven development in social and geographical terms is inherent in neoliberal restructuring and cycles of creative destruction. However, the authors of that "neoliberalization thesis" were criticized because the theory was deemed to be limited in terms of its definitional and descriptive limits and fuzziness, analytical restrictions, and the limitations of the often-adopted normative stance (see Pinson & Morel Journel, 2016). As discussed in the introduction, the literature on inclusive innovation has partly emerged to address the shortcomings of economically and technologically dominated framings of innovation that are associated with rising inequalities (Heeks, Foster, & Nugroho, 2014).

Another important idea connected to innovation and inclusion in cities is the concept of creative cities and the creative class. This idea is explained in Richard Florida's book, *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community, and Everyday Life*, first published in 2002 (Peck, 2005). In his highly influential book, Florida argues that cities can foster growth through technology by leveraging creative industries and creative individuals, where a city's tolerance and

the presence of sexual minorities and other diverse groups contribute to this development (Florida, 2005). In turn highly debated in academic literature from multitude of perspectives (e.g. Peck, 2005; Wilson & Keil, 2008; Florida, 2014), it can be argued that this approach often does not derive from the place of social justice or inclusion despite Florida's claims for concerns on urban inequality (Florida, 2014): the motivation for such activities is often economic and may overlook aspects required of meaningful inclusivity and social sustainability (Alsayel, de Jong & Fransen, 2022; Zhao et al., 2025). As Alsayel and others (2022, pp. 1) put it, "creativity always prevails over inclusion, whereby economic interests come first, and only aspects of inclusion that add to or are at least not in conflict with creativity tend to be honoured." This is central as recent studies have expanded the evidence on the relationship between urbanization and growing inequalities, for example in the context of changing skill-demand brought by technological paradigm shifts (Baum-Snow, Freedman & Pavan, 2018; Nijman & Wei, 2020) and urbanization benefiting those with already higher wages the most, despite higher average wages in cities (Shutters et al., 2022) and bigger cities being more unequal in general (Connor et al., 2025).

To create more inclusive cities using innovation policy, it is important to consider each city's unique spatial characteristics. This is due to several reasons. For one, innovation-based development is often a place-based strategy that is connected to concepts such as placemaking and place quality (Esmaeilpoorarabi et al., 2018; Pancholi, Yigitcanlar & Guaralda, 2019; Morales et al., 2025). For example, innovation districts are a new form of urban geography and land-use strategy designed to boost economic development by leveraging spatial agglomerations while simultaneously promoting mixed-use development to create a more livable urban environment (Katz & Wagner, 2014; Yigitcanlar, Adu-McVie & Erol, 2020). Fastenrath and others (2023) stated that the innovation district concept is influenced by literature on regional innovation systems (RIS) and creative class and urban innovation (Florida, 2005). The place-based nature of innovation-based development needs to be considered when analyzing urban innovation areas for inclusion (Morales et al., 2025). Secondly, neighborhoods are a useful unit of analysis when analyzing spatial inequalities and other urban phenomena, such as segregation, gentrification, and socio-spatial polarization (e.g., Bernelius & Vaattovaara, 2016; Bailey, Van Gent & Musterd, 2017; Niskavaara et al., 2025; Leino, Wallin & Laine, 2024). In addition, neighborhoods and districts can be used to study inclusive aspects of urban development, such as community participation and engagement and urban social sustainability (Esmaeilpoorarabi et al., 2020a; Esmaeilpoorarabi et al., 2020b; Morales et al., 2025; Shirazi & Keivani, 2019).

Although existing research addresses this topic, the neighborhood or district level remains insufficiently examined regarding the ways in which innovation policy can foster more inclusive outcomes (Morales et al., 2025). Nevertheless, the spatial dimensions of innovation have been extensively examined within disciplines such as economic geography, the formulation of inclusive outcomes through urban innovation policies remain comparatively underexplored (Bramwell, 2021; Lee, 2023; Parsons et al., 2024; Morales et al., 2025). It is essential to acknowledge that distinct local contexts possess inherent potential for inclusion, while concurrently being interconnected with broader systems that perpetuate urban inequalities. The place-based approach has recently garnered increased attention in policy discourses, notably within the EU (Schwaag Serger, Soete, & Stierna, 2023) and the OECD (2025). It has also been examined within policy research (e.g., Tilley et al., 2023; Uyarra et al., 2025). Place-based perspectives facilitate a comprehensive understanding of a location and its distinctive characteristics, thereby enhancing the formulation of policies and development plans. Consequently, they constitute an effective approach for inclusive innovation policy within urban contexts.

2.2 Social sustainability as a basis for inclusive cities

Recent literature on inclusive cities can be connected to that on urban social sustainability (Davidson, 2010; Dempsey et al., 2011; Shirazi & Keivani, 2017). Although social sustainability is a relatively new framing, "Questions about the sustainability of urban communities are as old as the city itself" (Davidson, 2010, pp. 873). The different dimensions of sustainable development, economic, environmental, and social, have increasingly been on the agenda of cities for the past decades since their announcement in the 1980s (Davidson, 2010; Rikala, Wallin & Sjöblom, 2023). However, the dimension of social sustainability is frequently the most neglected and is typically regarded as the most challenging to define and assess, both in scholarly research and policy making (Davidson, 2010; Shirazi & Keivani, 2017; Rikala, Wallin & Sjöblom, 2023). According to Rikala, Wallin, and Sjöblom (2023), the literature identifies two distinct approaches to social sustainability: (1) empirical measurement employing societally relevant indicators, such as levels of well-being, and (2) an interpretative approach that does not depend on a universally accepted theoretical framework, but instead utilizes methods such as policy analysis to interpret context-specific manifestations and operationalizations of social sustainability, taking into account the unique normative assumptions and policy priorities underlying them.

A meta-analysis undertaken by Shirazi and Keivani (2017, pp. 1537) identifies several fundamental principles of urban social sustainability as delineated in prior

scholarship: “equity; democracy, participation, and civic society; social inclusion and mix; social networking and interaction; livelihood and sense of place; safety and security; human well-being; and quality of life”. Their findings indicate that equity emerged as the most frequently cited principle across the reviewed studies. Equity encompasses factors including quality of life, equality of opportunity (notably in education, employment, and health), accessibility of services, gender equity, social justice, environmental equity, and, importantly for the temporal dimension of sustainability transitions, intergenerational equity (Shirazi & Keivani, 2017). In a subsequent investigation, Shirazi and Keivani (2019) examined social sustainability specifically within the context of neighborhoods and developed a triadic framework comprising indicators to conceptualize and assess socially sustainable neighborhoods. The concept of “neighboring” includes soft infrastructure (e.g., participation, safety, social interaction), hard infrastructure (e.g., land use, urban pattern, density, building typology), and neighbors (population profile and social composition) (see Shirazi & Keivani, 2019).

The differentiation between physical and non-physical factors in urban social sustainability was previously examined by Dempsey et al. (2011). That literature review identified 20 non-physical factors (such as social justice, participation, social capital, education, and sense of community) and eight physical factors (such as urbanity, public realm, housing, accessibility, and walkability) that contribute to urban social sustainability (see Dempsey et al., 2011). The interplay of physical and non-physical factors for social sustainability calls for a more integrative, relational, and place-based approach that is able to account for its multidimensional and cross-disciplinary nature (Åhman, 2013; Dempsey et al., 2011; Shirazi & Keivani, 2017). In addition, the very idea of sustainable development includes consideration of all three dimensions—economic, environmental, and social—in parallel (Davidson, 2010). Recent studies seem to have adopted this more multidimensional approach through the developing literature on inclusive cities (Armendaris et al., 2015; Liang et al., 2022; Zhao, De Jong, & Edelenbos, 2023; Zhao et al., 2025; Zhang, Luo, & Dai, 2025).

The often-cited definition of inclusive cities provided by the Asian Development Bank (2017, pp. 4) is: “An inclusive city creates a safe, livable environment with affordable and equitable access to urban services, social services, and livelihood opportunities for all the city residents and other city users to promote optimal development of its human capital and ensure the respect of human dignity and equality”. In research, the definition and dimensions of an inclusive city have been thoroughly examined by Liang and others (2022). By conceptualizing the inclusive city through a bibliometric analysis and a qualitative literature review, this study has important theoretical and practical implications. They were able to identify five different dimensions for inclusive cities: social inclusion, economic inclusion, political inclusion,

environmental inclusion, and spatial inclusion. Social inclusion entails things such as equality of opportunity and sustainable migration, participation and citizenship, legal perspectives and human rights, quality of living conditions, and participation in social activities. Economic inclusion is connected to principles of inclusive growth and encompasses reducing material inequity and enhancing employment opportunities, especially for disadvantaged groups that are vulnerable owing to rapid urbanization and technological development.

Political inclusion, as briefly addressed in the opening section of this thesis, concerns the citizen–state relationship and is therefore connected to civil and political rights and, especially in the Western context, "[a] citizen's sense of belonging and identity and their empowerment" (Liang et al., 2022, pp. 74). It is crucial for issues such as democracy and political participation. Interestingly, for this thesis, Liang and colleagues (2022, pp. 74) also included the matter of sustainable innovation in the dimension of political inclusion, stating it to be a tool for the "process of governing or overseeing state operations", that "provides convenience for effective communication between local governments and citizens, and creates a way for citizens to make their claims.". Environmental inclusion is closely connected to environmental sustainability and, in this context, refers to handling matters such as natural resources and environmental conditions in a manner that gives future urban generations the chance to benefit from them as well. Finally, spatial inclusion, which "enables everyone to have equal access to public housing, transportation, and public infrastructure", is connected to spatial justice and land use (Liang et al., 2022, pp. 75). These dimensions partially overlap and illustrate the multidimensionality and interconnectedness of inclusion in the urban context (Liang et al., 2022).

This detailed classification has given rise to further research, such as a study by Zhao, de Jong, and Edelenbos (2023), in which they utilized these dimensions to investigate inclusive city ranking systems and their foundations. In a recent study, Zhao et al. (2025, pp. 1) examined "the practical realities of implementing inclusive city policies" using a comparative case study of three European cities: Antwerp (Belgium), Rotterdam (Netherlands), and Gothenburg (Sweden). Building on the model developed by Liang and others (2022) and employing actor-centered institutionalism, they identified six interdependent key factors for the success of inclusive city policies: (1) high-quality policy design, (2) integrated approaches, (3) cross-sector and interdepartmental collaboration, (4) citizen and community engagement, (5) resource allocation, and (6) political will and commitment (Zhao et al., 2025, pp. 7–9). These findings strongly resonate with my own from Sub-study III, where I use inclusive city theories to inform the relational conceptualization of inclusive innovation districts. In addition, inclusive cities have recently been explored from the viewpoint of socio-spatial inclusion at the neighborhood level, further

highlighting inclusive cities as a topical theme for both research and policy (Zhang, Luo, & Dai, 2025).

The multidimensional and intertwined nature of inclusion is well recognized in the urban social sustainability and inclusive cities research domain. Lessons derived from that research should inform both the theoretical work and the implementation of inclusive innovation policies in cities.

2.3 Cities as actors and contexts in inclusive innovation policy

Some previous research examined the potential of innovation-based urban development policies to deliver more inclusive outcomes, or at least to ensure that interventions do not increase inequality. For example, Morisson and Bevilacqua (2019) investigated strategies designed to alleviate gentrification when deploying innovation district strategies. Community leaders in Chattanooga, Tennessee, USA, aimed to deliver a more inclusive place-based knowledge economy in the local innovation district by adopting strategies to (a) advance digital equity and opportunities in entrepreneurship for underrepresented groups, (b) develop an inclusive and welcoming downtown area, and (c) invest in and build affordable housing. Notably, many of the endeavors included in these strategies are made possible by public-private partnerships, with a variety of stakeholders involved in implementing them, such as non-profit organizations, private sector sponsors, and the City of Chattanooga (see Morisson & Bevilacqua, 2019). Morisson and Bevilacqua (2019) suggested that gentrification in innovation districts could be alleviated by implementing such strategies, also encouraging knowledge spillovers and other benefits for the broader urban community. In another recent paper, Morales et al. (2025, pp. 750) suggest three key points for more inclusive outcomes in innovation district policy design and implementation: "First, identifiable, locally accountable and collaborative leadership. Second, intentional and collaborative community engagement and placemaking. Third, a wider vision for strategic alignment and territorial equity." An increasingly integrative approach to innovation district design is gaining traction, aiming to better account for inclusive and equitable outcomes as well as a broader distribution of benefits (Kalliomäki, Oinas, & Salo, 2024; Morales et al., 2025).

However, as the evidence in the literature is scarce, I next examine three relevant previous studies focusing specifically on inclusive innovation policy in cities: (Bramwell, 2021, Lee, 2023; and Parsons et al., 2024). Bramwell's *Inclusive Innovation And The "Ordinary" City: Incidental Or Integral?* investigated inclusive

innovation programs in two mid-sized cities, Saint-Étienne (France) and Greensboro (USA). The research examined their starting points and foundations and potential explanations for differences in their outcomes (Bramwell, 2021). The study also examines two inclusive innovation endeavors in those cities, the Design Tech Academy in Saint-Étienne and the Triad Navigator Project in Greensboro. Inclusive innovation is framed through "urban planning literatures on workforce development and entrepreneurial ecosystems", and the projects encompass the role of minorities and women in business (MWB) (Bramwell, 2021, pp. 245).

Inclusion in innovation activities is described as integral for Saint-Étienne and incidental for Greensboro, with the former having more success than the latter. One of the most important decisive factors is "explicit linkage to a commonly accepted urban development agenda that is supported politically by local government" (Bramwell, 2021, pp. 243). In Saint-Étienne, the program had bureaucratic and Mayor's office's support and it was more securely funded from the national level, whereas such support and guaranteed funding were lacking in Greensboro. Crucially for this study, power relations and institutional capacity also emerge as central dynamics for inclusive innovation policy success (Bramwell, 2021). Meaningful results demand both public and private sector commitment, institutional changes, as well as institutional capacity, which is deemed as important as the multilevel operational environment of cities. National policy steering made it possible to also utilize resources for the cause "on the ground" in Saint-Étienne.

Lee (2023) authored *Inclusive Innovation In Cities: From Buzzword To Policy*, which examined the potential of inclusive innovation to serve as a policy framework for local governments. The research covered how cities have operationalized inclusive innovation and how innovation policy is implemented by urban policymakers to ensure it benefits disadvantaged societal groups. The focus has mainly been on technological innovations. Lee presents three cities as examples of where an inclusive innovation policy was implemented: London, UK, and Pittsburgh and Washington DC. in the USA. After detailing the case studies and literature review, Lee (2023) presented a strategy to help cities adopt inclusive innovation policies based on three tenets: strategy, participation, and outcomes.

Additionally, Lee (2023) identified three principal challenges to implementation: the ambiguity and plasticity of the concept, neophilia and techno-solutionism, and the limited powers of local governments. In the strategic phase of policymaking, Lee stated that it involves "strategic decisions about which places, sectors, products or processes are the focus" (Lee, 2023, pp. 9). This involves choosing to foster inclusive innovation, support sectors and regions with lower current innovation levels, and encourage public service innovations. Regarding participation, Lee delineates three

principal dimensions: engagement in innovation processes and support for entrepreneurship; involvement in the workforce facilitated by innovation; and participation in education, particularly in STEM disciplines (science, technology, engineering, and mathematics), as well as the competencies required in those areas. In the context of dissemination, the significance of supplementary policies aimed at alleviating poverty (given that technological development policy alone does not provide a comprehensive solution) and the imperative for innovation policy to support more disadvantaged regions are emphasized.

In a study by Parsons and others (2024), *Advancing inclusive innovation policy in the UK's second-tier city-regions*, they examined three urban city-regions in the UK: Cardiff, Manchester, and Glasgow. They were interested in the leadership and policymaking of inclusive innovation policy, focusing mainly on how it manifests, who contributes to the processes, and who is left out. They cover the cases in detail and, while highlighting that each case has its own sectoral and spatial configurations, they present several notions of how local actors approach inclusive innovation policy. For one, investment in emerging networks focused on inclusion is seen as important, in addition to further investments in already recognized clusters, as it carries the principles of innovation across different sectors.

Secondly, a concern was identified regarding how to address development tensions within the city-region in an inclusive way. The three cases are said to "exemplify the need for tailored policy mixes in meeting the heterogeneous needs of the respective city-regions" (Parsons et al., 2024, pp. 331). They also recognize that their cases support the nascent literature on narratives shaping innovation policies. Further, the need for both physical and capacity-building infrastructure investments, distributed inclusively, is deemed important. Lastly, they raise the issue of insufficient data on inclusive innovation policy as an obstacle to policy learning and evaluation. Importantly, they also recognize the role of vertical governance in delivering innovation policy outcomes. Empowerment and resources are called for city-regions: "For inclusive innovation to flourish, it will need to be granted the status and some of the resources that are allocated to conventional technology-led innovation activity." (pp. 333).

All three studies proposed that the multilevel setting of urban governance constrains the possibilities for cities to advance inclusive innovation (Bramwell, 2021; Lee, 2023; Parsons et al., 2024). While cities have the power to steer their own development priorities, national policy guidance also plays a significant role. Bramwell (2021, pp. 255) suggests that American cities differ from European ones in that there is a stronger expectation that they will "operate in an "entrepreneurial" macro-institutional context" which leaves them more responsibility on self-financing

and creates more competition for investments. According to Lee (2023), the crux of the problem with local city governments not having enough power is that inclusive innovation policies must fit within the current capacities and functions of cities, and can therefore only address some, but not all, of the structural factors causing inequality. Parsons and others' (2024, pp. 333) findings indicate that "that city-regions are constantly required to negotiate and coordinate relationships in a vertical sense when managing the governance of emergent innovation policy with national, regional and local government". For inclusive innovation policy to succeed in city-regions, they call for more resources and capacity support from the national level.

However, as also highlighted by recent literature (e.g., Uyarra et al., 2025), these constraints also present opportunities for inclusive innovation policy. As the Saint-Étienne case demonstrated, the Inclusive Career Pathways program was successful due to multilevel funding and support, and its anchoring to the local context through a university. In contrast, Greensboro's outcome was shaped more by resource and power asymmetries, as well as local network and actor configurations, due to a lack of multilevel policy support. However, for multilevel policy steering to achieve its intended outcomes, local institutional capacity is also crucial, including participant configuration and the local development agenda. Additionally, power plays a key role in determining which policy priorities are put forward (Bramwell, 2021; Parsons et al., 2024). Similarly, in the study by Morisson and Bevilacqua (2019), intentional and proactive planning to mitigate negative externalities was crucial; place-based leaders required equity and inclusion to be core elements of development and established corresponding strategies through public-private partnerships and collaboration with other stakeholders.

The aforementioned research elicited three main points: (1) cities should recognize inclusive innovation policies strategically and in practice, and maintain inclusive narratives during such endeavors. (2) The multilevel governance arrangements of cities currently constrain how applicable inclusive innovation policies are, and (3) If a policy is to be effective and inclusive, cross-sectoral, networked collaboration will be required to deliver policy mixes attuned to the socio-spatial and temporal context of each city. That collaboration will also be shaped by institutional capabilities, networks, and other arrangements (Bramwell, 2021; Lee, 2023; Parsons et al., 2024). Table 2 below summarizes the results of the studies and offers key takeaways for policy. The results of this synthesis align with previous notions on inclusive innovation policy in both research and policy literature, especially on the matters of policy mixes, cross-sectoral collaboration, participation and dissemination, and the role of strategic financing (Carayannis & Campbell, 2012; Heeks, Foster, & Nugroho, 2014; OECD, 2015; Planes-Satorra & Paunov, 2017; Stanley, Glennie & Gabriel, 2018; Morisson & Bevilacqua, 2019). The results of the literature review and relevant

theoretical concepts from inclusive city and inclusive innovation policy literature are presented in Figure 1.

Table 2. Key themes and findings for inclusive innovation policy in cities from the examined studies (Bramwell, 2021; Lee, 2023; Parsons et al., 2024).

Authors and locations of cases	Key findings, common themes bolded	Key implications for inclusive innovation policy in cities
Bramwell, A. 2021 Saint-Étienne, France, and Greensboro, North Carolina, USA	The role of intermediary organizations is central, as they act as **network coordinators and link upper-level funding to local needs**. However, their influence is limited when it comes to shaping development agendas. In contrast, private-sector participation in inclusive innovation programs is weak or even opportunistic, yet private actors are often in a privileged position to shape urban development. An "explicit linkage to a commonly accepted urban development agenda" with local political support is described as the decisive factor shaping policy choices that support inclusive innovation in a city (p. 243). **The multilevel setting** of the operational environment in cities is as influential as **the local institutional capacity**.	Power relations in who gets to set the urban and economic development priorities and agendas matter. While neither case was framed as a flawless success story, the Design Tech Academy in Saint-Étienne was seen as more impactful due to receiving operational public funding and policy steering from the national level and strong support from local key actors, such as the mayor's office.
Lee, N. 2023 London, UK; Pittsburgh, Pennsylvania, USA; Washington, D.C., USA	Three risks for inclusive innovation policies in cities are identified: fuzziness and malleability of the concept, neophilia and technological solutionism, as well as a **lack of local powers**. Lee also states that "Inclusive innovation policy has more potential if **embedded in a wider strategy of addressing disadvantage**. Perhaps the most important part of the inclusive innovation agenda is that it **reframes innovation to put attention on the purpose and rationale** behind innovation." (pp. 10–11)	A three-step framework is proposed to help cities analyze and engage in inclusive innovation policy: 1. Strategy: the inclusivity of choices made, 2. Participation: paying attention to who is taking part in innovation processes (in entrepreneurship, workforce, and education) 3. Outcomes: support inclusive innovation dissemination (e.g., in more disadvantaged areas) and address poverty with additional policies, as technology development alone cannot do it.
Parsons et al., 2024 City-regions of Cardiff, Manchester, and Glasgow, UK	The work outlines five points on how city-regions approach inclusive innovation policy challenges: 1. Development and **support of emergent networks and collaboration** that enable more sectorally cross-cutting innovation policy 2. The need for managing horizontal intra-regional development tensions in an inclusive way, and also **the need for policy mixes** to attend to the unique needs of each region 3. **Narratives** and positive storytelling have a growing role in shaping policy 4. More inclusive infrastructure investments (both physical and capacity-building, e.g., in education) to prevent exclusion of peripheries 5. The need for data to support the establishment and evaluation of inclusive innovation policy. The role of **multilevel governance** is also highlighted.	To support the socio-spatial inclusivity of innovation, long-term engagement of key agents in establishing behavioral change and inclusive networks is needed. City-regions also need empowerment in terms of finance and resources, data to establish and evaluate inclusive innovation policies, and flexible top-down policy support to attune to local conditions. Fostering a culture for inclusive innovation is also central.

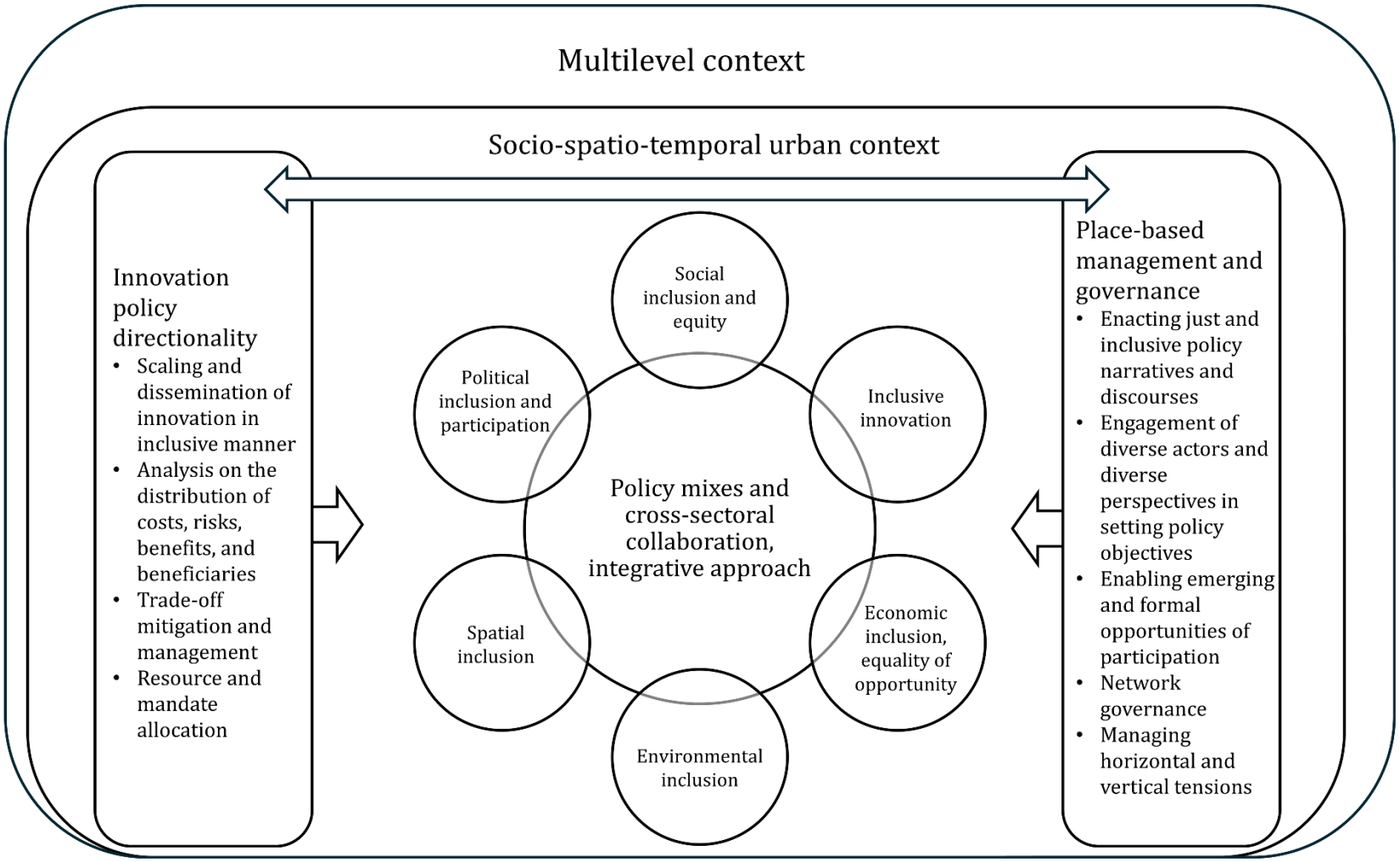

Figure 1. Synthesis of relevant literature on inclusive cities and inclusive innovation policy.

3 METHODOLOGY

3.1 Philosophy of science

3.1.1 On space

Regional studies, as a social science discipline, is closely connected to geography, which makes it necessary to discuss the nature of space before moving on to the broader philosophical foundations of this thesis. In geography, the last century has provided a stage for multifaceted philosophical and ontological discussions on the nature of space, spacetime, and the various ways of knowing and interpreting reality that different schools of thought advocate. For example, one of the most distinct debates has been whether space is absolute, relative, or relational. Recently, discussions about *more-than-relational* space have continued this deliberation (Jones, 2022). Framing space as relational is essential for effectively understanding and operationalizing multidimensional inclusion in urban environments. Below is a summary of the debate and the different schools of thought.

The notion of space as absolute suggests that "space is a condition in which space exists independently of any objects(s) or relations: space is a discrete and autonomous container" (Jones, 2009, pp. 489). This approach is associated with a positivistic scientific understanding of reality, and methods and systems such as cartography, the Global Positioning System (GPS), and Geographic Information Systems (GIS) have traditionally been based on this perspective, although modern GIS research employs more varied approaches. It assumes an "analytical fixity" and the independent existence of space as a backdrop for matter, where distances and positions can be determined using coordinates that are independent of any matter within that space (Jones, 2009, pp. 489; Harvey, 2009). This reflects the traditional, or Newtonian, view of space as an unchanging "container that marks place but is itself unmarked" (Barad, 2007, pp. 437). This view was especially dominant during the nineteenth and early twentieth centuries.

As the twentieth century progressed, new perspectives were established. One such perspective, which can be seen as opposing the absolute view of space yet remains largely positivistic in nature, is the concept of space as relative, where "space can be defined only in relation to the object(s) and/or processes being considered in space and time" (Jones 2009, pp. 490). It has its roots in Einstein's theories of relativity and conceptions of spacetime, in which the three dimensions of space are combined with

the dimension of time to form a four-dimensional continuum. This continuum does not have an independent, container-like existence apart from its "contents" (Einstein, 1954). This means that the distance, direction, and position of an object can only be defined in relation to other objects. For example, in a void, directions such as up, down, left, or right cannot be determined, as there would be no point of reference to make such distinctions possible. Central to this view is also Einstein's theory of time as relative, where time is experienced differently depending on the observer's motion. In this framework, the notion of space can change depending on context and perspective (Harvey, 2009).

The humanistic method and geography in the 1970s were followed by a 'cultural turn' in the field of geography during the 1980s and 1990s, which laid the foundations for later views on relationality. In the 1990s, a turn toward poststructuralism and social constructivism became apparent in human geography, and a movement began to replace the "systems of coordinates (Einstein, etc), with 'activities' for 'framing' space" (Jones, 2009, pp. 492, citing Latour, 1988). The relational turn of geography has had a fundamental influence on the field since then (Yeung, 2005). This perspective adopts a more dynamic and open-ended approach, in which space is formulated through the interactions and interconnectedness of entities (Latour, 2005; Jones, 2009). It can be interpreted as socio-spatial, since social relations and lived experiences play a crucial role in the production of space (Yeung, 2005).

In this view, space as relational refers to the idea that the interconnectedness of objects creates space, where entities collectively give meaning to places and spaces. For example, in actor-network theory (ANT), the aim is to move beyond the assumed human–nature dualism and highlight how networks of actors, both human and non-human, co-constitute space within networks of meaning (Latour, 2005). Additionally, Jones (2009) has advocated for the concept of phase space, which emphasizes the importance of context and historical processes in relational geography. While relational geography is usually said to be the product of Western philosophy and science, Indigenous cultures around the world have conceptualized space as relational for much longer (Gould, Martinez, & Hoelting, 2023). In this sense, space as relational can also be interpreted as the intertwined and interdependent nature of objects, actors, and processes in spacetime, rejecting the human–nature dualism altogether and acknowledging the relationality of collective reality (Tynan, 2021; Gould, Martinez, & Hoelting, 2023).

While relational geography remains highly influential today, it has also attracted some criticism. For instance, relational theory in geography is applied in various ways, including superficial and abstract manners, without clearly articulating or discussing why relationality matters beyond merely describing the current state of

networked relations, raising questions about its practical impact and methodological traceability (Yeung 2005; Sunley, 2008). Partly born from this criticism is the *more-than-relational geography*, which still builds on the relationality of space but seeks to move "beyond relations to consider the nature and kind of entities that make and are made through relationships within assemblages" (Allen, 2012, pp. 190; Jones, 2022). This perspective allows for a more varied understanding of space and spatiality, integrating previously dominant notions of territoriality and materiality, as well as temporality, with a relational mode of thinking. For example, Malpas (2012, pp. 240) argues that "A more critically engaged geography, I would argue, must also be a geography that is more attentive to the underlying character of space as it stands in relation to place and time—that is more attentive to the phenomena of boundedness, openness, and emergence." In a sense, this perspective reconnects the concept of place with that of space, aiming to avoid the pitfalls of overly vague applications of relationality (Malpas, 2012).

One outcome is that some perspectives go further by reworking the very notions of space and time. One such approach is Karen Barad's (2007) concepts of intra-action, spacetimemattering, and agential realism. For Barad, space is not something that matters simply inhabits, and spatiality is defined as much in exclusions as in boundaries: "The boundaries that are enacted are not abstract delineations but specific material demarcations not *in* space but *of* space. Spatiality is intra-actively produced. It is an ongoing process of the material (re)configuring of boundaries—an iterative (re)structuring of spatial relations." However, Barad's work is not merely an isolated example of alternative views on spatiality; rather, this framework plays a foundational role in the philosophy of science that underpins this thesis. Accordingly, fully comprehending this perspective requires a thorough exploration of Karen Barad's epistemological and ontological framework, known as agential realism.

3.1.2 Relational ontology

Karen Barad identifies as a realist, though not in the conventional sense typically associated with realism in the philosophy of science. The ontological presupposition that traditional realists often claim is the independent existence of the world and reality apart from human perception and observation. But for Barad, "Realism […] is not about representations of an independent reality but about the real consequences, interventions, creative possibilities, and responsibilities of intra-acting within as part of the world." (Barad, 2007, pp. 37). The title of her influential book *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, hints at a central proposition of agential realism—that meaning and matter are inseparable.

Several key concepts must be clarified before unpacking the entanglement of matter and meaning. To understand the underlying ontology of agential realism, it is crucial to distinguish intra-action from interaction. According to Barad (2007, pp. 33), intra-action "*signifies the mutual constitution of entangled agencies*" (emphasis in original). Agency, in this framework, is not a property possessed by entities, especially not exclusively by humans, but is instead an enactment, a matter of intra-acting, of the ongoing reconfiguration of the world (Barad, 2007). This contrasts with interaction, which assumes two or more distinct entities making contact with one another. Throughout her work, Barad rejects individuality and argues that distinct agencies do not precede their relations but rather dynamically emerge through intra-action. Importantly, these agencies are distinct only in relational, not absolute, terms (Barad, 2007). The rejection of individuality in Barad's view stems from the rejection of representationalism; the idea that, for example, scientific experiments and theories mirror the objective reality that humans can observe from a distance. Instead, the entanglement of agencies means that scientists are not detached observers but are part of the world they study and are also part of the phenomenon studied and phenomena produced (Barad, 2007). This ontological stance leads to a rejection of many established dualisms, such as nature/culture and matter/discourse, to which I will return later.

As Jaksland (2024, pp. 366) puts it, "agential realism is a type of radical relational holism whereby objects emerge from the whole". Barad refers to these emergent objects as phenomena, which constitute the primary units of reality in agential realism. In essence, all distinctions (such as objects) arise from intra-active entanglements relative to the whole, where phenomena represent the ontological inseparability of the "parts" that constitute them (Barad, 2007; Jaksland, 2024). Therefore, phenomena are "ontologically primitive relations" that do not presuppose the prior existence of relata (Barad, 2007, pp. 139). Intra-actions thus produce different phenomena, including their apparent separation, which Barad describes as an agential cut (Jaksland, 2024; Barad, 2007). The distinctiveness produced by an agential cut is not a social construct or merely an imagined concept—it is materially enacted in the becoming of phenomena, "a resolution *within* the phenomenon of the inherent ontological (and semantic) indeterminacy" (Barad, 2007, pp. 140, emphasis in original).

Unlike traditional realism, which posits distinct entities with pre-existing, determinate properties that then enter into relations, agential realism holds that entities and reality emerge through entangled, relational intra-actions. The concept of spacetimemattering is therefore distinct from traditional views on relationality because it establishes how, through the entangled processes of becoming, space, time, and matter together take shape and produce phenomena as a dynamic becoming of

reality. Therefore, for example, in a city, the material objects that constitute the urban form are not merely a backdrop for events; rather, the subject/object distinction dissolves, and buildings are as agential in the becoming of the city as its inhabitants.

Dewsbury (2000) held that the relations we enter into define us through the limits brought by entanglement; yet, in any given moment, there are always multiple choices to make. In the same vein, Barad asserts that intra-activeness introduces "constraints" for indeterminacies (in the possible (re)configurations): the future is open to multiple, different, constantly reconfiguring possibilities, yet not everything can happen in each moment (Barad, 2007). In geography, similar discussions have taken place regarding the concept of path dependency—the idea that future decisions and changes are shaped and reinforced by how a system was originally established and set into motion. This perspective is more linear and static than the relational and dynamic understandings of reality sometimes employed by other streams of geographers, but the implications for cities are clear in their boundedness to the current state of affairs. According to Barad (2007, pp. 235), the world is constituted through the dynamic intra-activity of enfolding and differential mattering and its "ongoing reconfiguration of both the real and possible". Not only is this essential for the becoming of cities, but for this reason, ethics and accountability are central to agential realism: since scientists are part of the intra-active becoming of reality, they bear responsibility for how they intra-act with the world (Barad, 2007). This also has consequences for epistemology; according to Barad, knowing and being cannot be separated (Barad, 2007). Because researchers and scientists are part of the world's differential and material becoming, "We don't obtain knowledge by standing outside the world; we know because we are *of* the world" (Barad, 2007, pp. 185, emphasis in original).

Even this glance at agential realism indicates that it intersects familiar debates about the social and material construction of reality. As Barad (2007, pp. 225) explains, "Agential realism takes into account the fact that the forces at work in the materialization of bodies are not only social, and the bodies produced are not all human." Although the ontology of agential realism is indeed relational, Barad shares certain characteristics with naturalized metaphysics (Jaksland, 2024). Some have questioned Barad's suggestion that conclusions from quantum physics can be applied to other disciplines, or that quantum-level processes can meaningfully inform our understanding of meso- and macro-level processes, implying a type of scientism in Barad's work (Faye & Jaksland, 2021; Jaksland, 2021; Everth & Gurney, 2022). It is important to emphasize that I engage with agential realism from the perspective of the philosophy of science and ontology, rather than applying any specific findings from quantum physics research in this thesis. Moreover, Barad's agential realism can also be situated within the broader stream of new materialism, as matter and

materialization play a central role in its relational ontology—matter itself being a dynamic entanglement of relations (Barad, 2007). In addition to Niels Bohr, Barad often draws on the work of Donna Haraway and Michel Focault, including material-discursive practices.

3.1.3 Material-discursive practices

In Barad's view, materiality is neither distinct nor static; rather, it is an intra-active process of materialization that, over time, becomes stabilized and produces what we come to understand as 'matter' and its boundaries (Barad, 2007; Orlikowski & Scott, 2015). However, materiality cannot be ontologically separated from discourse—they are entangled and, in an agential realist reading, lack an independent existence (Barad, 2007). One way to understand this is through an example provided by Orlikowski and Scott (2015, pp. 699, emphasis added): "whether spoken speech, written email, official records, or online blog, *the discourse does not pre-exist its specific material production* as speech, email, record, or blog post in particular times and places." Thus, material-discursive practices are not about discourse and materiality as separate entities that influence or sustain one another; rather, they must be understood *as the very process of materialization and how discourse becomes materially enacted in reality through practice* (Barad, 2007; Orlikowski & Scott, 2015; Introna, 2011). Nevertheless, Barad asserted that there is more to material-discursive practices than this, and they should not be understood as limited to human language. As material-discursive practices are indeed practices, and reality is constitutive of intra-acting phenomena, Barad turns to performativity instead of representationalism. This should not be confused with "performing" in the theatrical sense, like an actor or singer on stage; rather, performativity refers to the ongoing, dynamic, and relational becoming and reconfiguring of reality through processes and practices: "It is performative therefore to think/act on real existence in opposition to the possibility of existence being pronounced by a priori ideas" (Dewsbury, 2000, pp. 493; Barad, 2003).

The materialization of discourse draws on the work of Donna Haraway on material-semiotic entities (Holloway, 2004; Barad, 2007). Holloway (2004) summarizes this meaning that entities are not inherently natural or cultural (or linguistic), but both: they have a material presence that enables agency and are simultaneously established within a cultural system as a semiotic entity. According to Dewsbury (2000, pp. 477), it is proposed that both our speech and acts "propose and create connections which configure the 'object' allowed to materialise in discourse". In a similar vein, Barad has decentralized the human and claims that matter is also agential in its iterative materialization and in the ongoing (re)configuration of reality

(Barad, 2007). This brings attention to the role of non-human entities, objects, and structures (phenomena) being agential in shaping reality (e.g., Latour, 2005). As Barad (2003, pp. 828) puts it:

> *"A crucial part of the performative account that I have proposed is a rethinking of the notions of discursive practices and material phenomena and the relationship between them. On an agential realist account, discursive practices are not human-based activities but rather specific material (re)configurings of the world through which local determinations of boundaries, properties, and meanings are differentially enacted."*

Orlikowski and Scott (2015, pp. 700) state that "This material-discursive approach thus allows us to ask how specific materializations make a difference in the enactment of reality in practice." This is crucial for inclusive innovation policies, specifically in cities. By sticking to the traditional view of innovation as inherently technological and economic, and by imposing this framing onto cities, certain realities are produced in ways that may sideline many residents. This raises critical questions: What is a city, and for whom and for what purposes is it being developed? Who holds the power to determine the direction taken?

Many notions considered in this chapter have connections to the field of geography, especially human geography and non-representational theory (NRT), developed by Nigel Thrift, as well as to the *relational* and *more-than-relational* understanding of space and temporality that were briefly introduced earlier. As its name suggests, NRT also rejects representationalist notions and leans toward a performative account of reality and performative embodied knowledge, where encounters and events are complex, emergent, and relational (Cadman, 2009; Williams, 2020), which can be referred to as a relational materialist perspective (Warf, 2004). Both Barad and Dewsbury also reference the work of Gilles Deleuze (Dewsbury, 2000; Barad, 2007), who is known for his non-representational *geophilosophy* (Doel & Clarke, 2004). In his appreciation of the event, he embraced seriality rather than hierarchy, and becoming rather than being, where "space *itself* is alive" (Doel & Clarke, 2004, pp. 105–106, emphasis in original). In the context of *more-than-relational* geography, Jones (2022) draws on the notion of 'plastic space' to examine how relational regions are elastic and dynamic, while containing the past in their current form. Temporality is also highlighted as crucial by Jones; like Barad, he presents a nonlinear understanding of time, where "the present is not a point in a predetermined sequence of spaces and times stretching inexorably from past to future, but is instead the point at which the already defined object encounters the possibility of change", highlighting the dynamic nature of plasticity in the material becoming of entities (Jones, 2022, pp. 54).

In conclusion, from an ontological perspective, this thesis aligns with a relational conception of reality as dynamically emerging and materializing (Dewsbury, 2000; Jones, 2009, 2022; Latour, 2005; Barad, 2003, 2007; Orlikowski & Scott, 2015), encompassing the notion of relational space. Although the sub-studies utilize a relational conception of space, the overall findings of this thesis incorporate perspectives from the more-than-relational geography, addressing the historicity and contextual factors involved in materialization. Furthermore, this work engages with the framework of material-discursive practices, underscoring that discourse is not solely linguistic but is intrinsic to the material formation of the world, through which agencies also emerge. Inclusion (or, conversely, exclusion) is examined as a dynamic process generated through relational phenomena encompassing spatiality, urban form, policy frameworks, organizational structures, and other factors. This study seeks to elucidate the implications of these dynamics for the conceptualization and implementation of inclusive innovation policy in urban contexts.

3.2 Data and methods

This thesis utilizes a qualitative research methodology, integrating multiple theoretical frameworks and data sources throughout its constituent sub-studies. The data and case studies are situated in Finland, the USA, Australia, and the member states of the European Union (EU). The inclusivity of innovation policy at the municipal level constitutes an emerging research domain; consequently, no singular comprehensive theoretical framework has been universally applied across all constituent studies. Alternatively, frameworks such as actor-network theory (ANT) and relational theory were employed to offer insights from multiple perspectives and were assessed as the most appropriate for analyzing the issues under investigation.

In Sub-study I, we analyzed the framing of inclusion as an objective within science, technology, and innovation (STI) policies by examining its utilization in both STI research and policy discourse. The study had a dual objective: first, to examine the manifestation of inclusion within STI research literature; and second, to elucidate the divergent interpretations of inclusion that emerged from the literature in the empirical section of the paper. We examined two prominent frameworks: Responsible Research and Innovation (RRI) within the European Union and the Broader Impacts Criterion (BIC) in the United States. These frameworks were chosen owing to their substantial influence on STI policies and research, as well as their differentiated methodologies for advancing inclusivity. BIC emphasizes the dissemination and societal relevance of research, whereas RRI aims to fundamentally transform the underlying principles of research and innovation to ensure greater responsibility and equity. In the theoretical section, we employed the frameworks of

policy divergence and policy decoupling. The empirical analysis relies on 20 principal policy documents and publications pertaining to RRI and BIC. The documents were analyzed employing theory-driven content analysis and document analysis methodologies.

In the second sub-study, we examined the mechanisms through which communality both arose and was constrained within selected neighborhoods in Vaasa, Finland. The research questions posed were:

1) How do the interviewees' understandings of communality affect their perceptions of and ideas about the neighbourhoods studied and their development?

2) How are different understandings of a desirable urban community linked with institutionalized power structures produced by socio-economic differences, privilege and disadvantage, and public authorities?

As these questions suggest, thematic interviews were one of the chosen data collection methods, complemented by Community Urban Planning Labs (CUPL)—a form of focus group interview conducted in digital settings as a part of the *Suburban Innovation* project. In total, 25 thematic interviews and seven CUPL sessions were conducted with 44 informants between 2020 and 2021. The informant group included 19 authorities (urban planners, local government officials, and specialists) and 33 residents. Efforts were made to ensure diverse participation among residents, encompassing a range of ethnic backgrounds, ages, and socio-economic circumstances. The case study design used here is descriptive, as the goal was to understand the selected cases in their context and provide a detailed description of them, guided by the developed theoretical framework (Yin, 2003). Both data sets were analyzed using actor-network theory (ANT) and intersectional perspectives within a content analysis framework.

The third sub-study investigated innovation districts and their potential to adopt more inclusive operational practices and generate broader societal value within their urban contexts. The research questions were:

1. How can inclusive innovation districts be conceptualized from a relational perspective?

2. In which ways do the relational dimensions of inclusive innovation districts appear in the data?

The cases examined were Turku Science Park (TSP) in Turku, Finland, and Melbourne Innovation Districts (MID) in Melbourne, Australia. I conducted 15 semi-structured

interviews with informants from both countries during 2023–2024, using both in-person and remote methods. Relational theory was employed to explore how inclusion can be advanced in innovation areas that often produce new forms of exclusion and polarization. In adopting this approach, I emphasized the need to understand inclusion as a holistic and interconnected process within innovation districts. The interview data were coded using a theory-driven inductive approach, whereby dimensions of inclusion identified in the literature review served as an analytical lens to uncover deeper insights into inclusion and the dynamics between different manifestations of inclusion and processes of exclusion. The double case study presented here is exploratory in nature, as the topic currently has a very limited theoretical foundation in established literature. Nevertheless, the design adhered to the principles of a descriptive case study, with the analysis guided by the theoretical framework outlined in the literature review (Yin, 2003). This approach enabled a focused examination of the phenomenon and maintained relevance in the broader innovation district literature despite the scarcity of existing evidence (Yin, 2003). A summary of the data and methods used in each sub-study, in relation to their respective research objectives, is presented in Table 3.

Table 3. Data and methods utilized in the sub-studies of this thesis in relation to the research objective in each.

Sub-study	I	II	III
Objective	To scrutinize the manifestation of inclusion as an STI policy objective in research literature and demonstrate the resulting decoupling in policy language	To investigate how communality is understood and therefore supported or restricted in the case neighborhoods	The conceptualization of innovation districts from a relational perspective and investigating relational dimensions of inclusion
Data	20 key policy documents and publications on RRI and BIC	25 thematic interviews and seven CUPL sessions with 33 residents and 11 authorities	15 semi-structured thematic interviews
Methods	Theory-driven qualitative content analysis, document analysis	Content analysis with intersectional perspectives	Theory-driven inductive approach
Theoretical background	Policy divergence, policy decoupling, inclusive innovation	Actor-network theory (ANT), theories on community and communality	Relational theory, innovation districts, inclusive cities

3.3 Contributions in co-authored articles

Sub-studies I and II were co-authored within a research team connected to distinct externally funded research projects. Sub-study I was conducted within the Business Finland–funded project *MISS – Practicing Mission-Oriented Innovation Policy*. Following the Contributor Roles Taxonomy (CRediT) (Hosseini et al., 2026), my central contribution to this article lies in methodology and empirical analysis. In addition, I contributed to research conceptualization and design, the management and collection of research materials, writing the body text, editing the article during peer review and other stages, confirmation and analysis of findings, and the visualization of frameworks and results. I also had a minor role in funding acquisition.

Sub-study II was conducted within the project *Place-Based Innovations While Developing Residential Areas – A Double Case Study of the Olympic Quarter and Ristinummi in the City of Vaasa*. The project was funded through the Ministry of the Environment's Suburban Development Programme in Finland. My role as a project researcher involved contributing to research design as well as designing and carrying out data collection. Prior to the project, I also had a minor role in the acquisition of research funding. For the article, I was primarily involved in writing the body text and editing the manuscript during peer review and other stages, as well as in the verification and analysis of findings.

I designed and carried out sub-study III independently under the guidance of my supervisors.

3.4 Ethics

As previously indicated, ethics and accountability constitute fundamental components of agential realism, given that researchers and scientists are simultaneously integral to the phenomena under investigation and agential in the production of reality (Barad, 2007). The ethical framework of this thesis is founded upon several fundamental principles. Initially, throughout all phases of research design, execution, and data management, the internal regulations of the University of Vaasa were adhered to. The University is dedicated to compliance with the Finnish Code of Conduct for Research Integrity, established by the Finnish National Board on Research Integrity TENK (TENK, 2023), and consequently, all procedures have been grounded in ethical research practices. Furthermore, as a member state of the European Union, Finland adheres to the General Data Protection Regulation (GDPR). Accordingly, for Sub-studies II and III, scientific research data file privacy notices were formulated and disseminated to participants prior to their involvement. Participation in both studies was contingent upon obtaining informed consent.

The question of ethics was particularly important in Sub-study II, as part of the investigation into communality involved examining the social sustainability of the case neighborhoods. Special attention was given to including individuals in more vulnerable societal positions, so that they could share their perspectives and experiences. This was essential to ensure that diverse voices were heard in defining communality, rather than only those in positions of power. It also required us, as researchers, to be especially mindful of our own roles as part of the group of authorities. This means that we had a particular responsibility to ensure that data collection and interpretation were conducted in ways that respected participants' rights and dignity. In Sub-study III, the informants were experts and professionals in their respective fields.

3.5 Limitations

Some limitations of this study should be acknowledged. Firstly, all the primary data in this thesis are qualitative and were obtained mostly through interviews. Overall, the study would have benefited from more diverse data sources, especially considering the deep exploration of citizen perspectives in Sub-study III, which remains an area for future research. While the case studies in Sub-studies II and III provide insights that can inform investigations of other cases, they are descriptive in nature, which limits the generalizability of some findings due to contextual factors. Additionally, all sub-studies are situated in Western, high-income countries, which should be taken into account when interpreting the results of this thesis. These issues will be briefly elaborated on in Sub-study I.

4 SUMMARIES OF SUB-STUDIES

4.1 Sub-study I: Inclusion as a science, technology, and innovation policy objective in high-income countries: the decoupling dilemma

In this study, the focus was on contemporary science, technology, and innovation (STI) policies. Our interest was to examine how inclusion is framed and therefore applied in STI research and policy publications. The starting point of the study was that inclusion has gained multifaceted meanings in the broad STI literature, not the least a dual meaning that is present in its dictionary form, inclusion meaning either 1. "the action or state of including or of being included within a group or structure, or a person or thing that is included within a whole" or 2. "the practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized, such as those who have physical or mental disabilities and members of other minority groups." (Oxford Dictionary of English, accessed through MOT, 2024). Our concern was that this has both theoretical and practical implications for STI research and policy that were not captured properly in the current literature.

We studied two well-known frameworks within the STI policy domain: Responsible Research and Innovation (RRI) employed in the Horizon research programs of the EU, and Broader Impacts Criterion (BIC) that is used to evaluate the societal benefits of research in the National Science Foundation's (NSF) research projects in the United States. We utilized decoupling as policy divergence (Graafland & Smid, 2019) as our theoretical lens in the literature review and hypothesized that "the broader meanings of inclusion are partially decoupling from a common understanding of inclusion linked to disadvantaged groups." (Kalliomäki et al., 2024, pp. 799). We framed this issue as "decoupling dilemma," which highlights the broadening scope of the meaning of inclusion as an STI policy objective; it is increasingly parting with its original meaning associated with the inclusion of marginalized populations to also mean the inclusion of any actors in STI processes, such as co-creation and co-production. In addition, inclusion is increasingly utilized to serve STI impact agendas.

In addition to the lens of decoupling, we employed the concepts of agency and goal setting to further investigate the meaning of inclusion as an objective; whether the recipients of innovation policy activities were considered active or passive, and if the goal of inclusion was employed more as a means or as an end goal of the process. The decoupling was noticeable in our data, and in addition, attention to agency and goal setting let us make important remarks about inclusive policies; although the nature

of active-passive and means-ends dimensions is in practice quite fluid, making the distinction is useful for analyzing the impacts of policies.

4.2 Sub-study II: Reconsidering neighbourhood communality through the lens of intersectionality: resident and authority perspectives

The article explores the experiences and understanding of communality in two suburban neighborhoods located in Vaasa, Finland. The research was conducted within the *Suburban Innovation* research project. The project was a part of the suburban development program that ran between 2020 and 2022, which allocated funding across Finland to develop suburban areas and enhance their social sustainability (Ministry of the Environment, 2025). The overarching goal of *Suburban Innovation* was to understand the processes of urban change happening in Vaasa, which is the regional capital of Ostrobothnia on the west coast of Finland (Suburban Innovation, 2023a). One focus was on the different perspectives of regional actors when it comes to suburban development, and the governance structures that guide decision-making in said development (Suburban Innovation, 2023b). The project collaborated with the City of Vaasa and other relevant organizations in the area, such as the Student Housing Foundation in Vaasa (VOAS).

Vaasa is a city of around 70,000 residents, and the surrounding region with neighboring municipalities comprises more than 100,000 residents. The case neighborhoods, Ristinummi and Olympia Quarter, were chosen due to indicators that these areas are at an economic and reputational disadvantage compared to other neighborhoods in Vaasa. They also have higher demographic diversity, with a large number of students, immigrants, and low-income residents inhabiting the areas. As one of the goals of the project was also to generate information to develop more socially, economically, and environmentally sustainable cities, these neighborhoods were chosen as the targets of the investigations in order to aid their development in the future.

We investigated the phenomenon of communality, defined as the sense of connection and belonging among residents in an emotional, relational, and functional way (Niskavaara et al., 2025). Communality can be conceptualized as a material-discursive phenomenon or as a material-semiotic entity that arises through individuals and their varied identities, urban infrastructure, and the neighborhood reputation, which is discursively and narratively constructed through social interactions and media representations. However, the results demonstrate that this

does not imply that the character of a community is uniform or universal; rather, residents engage with and experience it differently depending on a variety of factors.

Utilizing intersectional perspectives and ANT made it possible to identify three narration gestalts from the data that illustrate different perspectives of communality in the neighborhoods: inclusion, recollection, and segregation. *Inclusion* in this context refers to organized or informal social activities and gatherings that support community spirit, for example the annual Ristinummi Day or communal summer festivities. It was noted how sense of communality was connected with functional outdoor infrastructure and active organization, making it vulnerable to decline if the equipment becomes damaged or active individuals in local organizations no longer arrange events. That scenario leads to notions that communality is collapsing. However, ethnic minority respondents emphasized other things that are essential for inclusion, such as a reliable social network of communication and information sharing.

The second identified narration gestalt was *recollection*. As the name suggests, this was strongly connected to nostalgia and reminiscing about communities that once existed in these areas. The notion of collapsing communality is connected to this reminiscing, particularly among the original residents of Ristinummi in the 1970s, leading to romanticized and idealized descriptions of the past and expressions of grievance about the present. The third narration gestalt we identified was *segregation*. This was characterized by experiences of exclusion and division among residents with lower socio-economic status and ethnic minorities. In this category, the different perspectives on how to enhance communality were especially clear: "It is notable that while the non-resident respondents (i.e. city officials and local politicians) proposed breaking up the non-white communities as a means to create a heterogeneous population structure, residents with migratory backgrounds more frequently suggested *including* white, Finnish-speaking people in the already existing neighbourhood as a solution." (Niskavaara et al., 2025, pp. 148, emphasis in original).

Therefore, we revealed a divide in perceived communality between authorities and resident groups, which was constituted by racism and cultural essentialism, and also embodied heteronormativity and ableism. Through this discursive construction, these neighborhoods are "othered and stigmatized as deprived, which may lead to denouncement of the persons inhabiting the place as well" (Niskavaara et al., 2025, pp. 149; Vietinghoff, 2021). This is due to the idealization of the community as homogeneous—white and Finnish-speaking, working-class, and characterized by an active lifestyle, such as sports. Residents who don't fit this description, such as marginalized ethnic groups, students, renters, and those living in social housing, were seen as disrupting community cohesion. Therefore, structural inequalities greatly

limit opportunities to participate in communal life and may also lead to less just urban policies.

4.3 Sub-study III: Inclusion in Innovation Districts: A Relational Perspective

The final sub-study of this thesis aimed to incorporate learnings from the literature on inclusive cities into that on innovation districts to investigate how these districts could become more inclusive and socially sustainable (Liang et al., 2022; Zhao et al., 2025; Morales et al., 2025). It is a recognized issue in the literature on innovation districts that these new land-use types, designed to advance innovation, may reinforce issues such as gentrification and social and economic polarization (Heaphy & Wiig, 2020; Kayanan, 2022; Kayanan, Drucker, & Renski, 2022; Maalsen, Wolifson, & Dowling, 2023). Consequently, the link between inclusion and innovation districts has rarely been established, except in very recent studies (Morales et al., 2025). Previous studies have approached the societal goals of innovation districts from the viewpoint of policy responses aimed at alleviating gentrification (Morisson & Bevilacqua, 2019); social integration (Pancholi, Yigitcanlar, & Guaralda, 2019); citizen engagement and social innovation (Esmaeilpoorarabi et al., 2020a, 2020b; Fernandez & Bentley, 2022); and mixed-use development (Gao & Lim, 2023).

However, previous literature on inclusive cities (also outlined in Chapter 2 of this thesis) demonstrates that cross-sectoral collaboration, an integrative approach, and stakeholder and community engagement are key to designing and implementing more inclusive urban policies and development. This existing body of knowledge should not be left on the sidelines when developing innovation districts. This is especially true because innovation districts often already exhibit a collaborative structure between sectors and organizations that can be utilized to achieve more inclusive outcomes. This would, however, require sufficient intent, resources, and the prioritization of inclusion in urban innovation policy agendas (Bramwell, 2021; Lee, 2023; Parsons et al., 2024; Zhao et al., 2025).

Utilizing the findings from the literature review (Liang et al., 2022; Zhao et al., 2025) and relational theory (Murdoch, 2005; Yeung, 2005) facilitated the construction of a conceptual framework that illustrates the interconnectedness of different dimensions of inclusion that should be accounted for in the development of innovation districts. By specifically employing the viewpoint of innovation and drawing on the interview data, I add to the previously recognized dimensions of inclusive cities (social, economic, spatial, environmental, political) by distinguishing health and well-being, capacity-building, inclusion in innovation, digital inclusion,

inclusion in networks, and engagement of actors as distinct categories. Like in previous studies, the categories in this study also somewhat overlap and both support and restrict one another. More inclusive innovation districts could be developed by accounting for the intertwined and relational nature of these dimensions. For example, as place-based approaches to innovation-driven development, innovation districts could utilize their specialized cross-sectoral structures to address not only access to jobs but also the structural inequalities that hinder employment for disadvantaged groups (see also Zhao et al., 2025). However, crucial challenges remain: first, the inherently exclusive nature of the neoliberal innovation economy makes it difficult to reframe the meaning of innovation districts (Heaphy & Wiig, 2020; Esmaeilpoorarabi et al., 2020a, 2020b; Kayanan, 2022; Kayanan, Drucker, & Renski, 2022; Maalsen, Wolifson, & Dowling, 2023). Secondly, the implementation of innovation district strategies without sufficiently considering the local context and social sustainability may perpetuate the exclusive nature of innovation districts (Bramwell, 2021; Lee, 2023; Parsons et al., 2024; Morales et al., 2025).

5 RESULTS

5.1 Results from the sub-studies

The three sub-studies, individually and collectively, provide pertinent insights for the formulation of more inclusive innovation policies in cities. The first sub-study expressly concentrated on policies, with a particular emphasis on STI policies. A primary conclusion was that future research and policymaking ought to address the increasing ambiguity associated with inclusion. As previously indicated, "If inclusion is increasingly appearing everywhere in STI policy rhetoric, it might end up nowhere in practice," may lead to ambiguous policies and superficial initiatives that insufficiently empower individuals occupying marginalized social positions (Arnstein, 1969; Kalliomäki et al., 2024, pp. 804). Nevertheless, the differentiation between the two forms of decoupling is not characterized as intrinsically detrimental. Co-creation and co-production are, instead, regarded as fundamental for fostering more engaging policymaking processes and can be deliberately structured to enhance inclusivity (Perikangas & Tuurnas, 2023). Ideally, both "strands" could be cultivated and progressed in a more harmonious manner concurrently.

The key outcomes of Sub-study II stem from observations related to the governance of socioeconomically disadvantaged neighborhoods. According to the OECD (Planes-Satorra & Paunov, 2017), a central principle of inclusive innovation policy is to ensure that development does not deepen disparities between different areas and regions and that less developed areas also receive support. This means that not developing certain areas in favor of others is also an active choice, not merely passive inaction. Although Ristinummi has received increased attention in recent years, this appears to coincide with strategic efforts to attract battery manufacturing companies to a newly established industrial area. In 2023, the local newspaper Ilkka-Pohjalainen reported that "The arrival of the battery factory in Vaasa may finally resolve the area's [Ristinummi's] bad reputation" (translated from Finnish), and how millions of euros are being invested to "clean up" the reputation of Ristinummi, which is located near the battery manufacturing area (Lahti, 2023). While this is just one news article and does not reflect official statements from local public authorities, it illustrates the narratives that have been used about Ristinummi over the past decades. The attention Ristinummi is now receiving may ultimately benefit its existing residents and perhaps serve as a positive example of how innovation-driven development can support broader urban populations. However, situations like this raise important questions about the rationales behind such developments and connect to a broader global phenomenon: the relationship between multinational companies and urban

planning, in which cities play an essential role in steering a common urban future that is productive, just, and sustainable (Hüttenhain & Kübler, 2021).

In Sub-study III, I argued for a more holistic and relational consideration of inclusion within the framework of urban innovation districts. By analyzing previous literature and interview data, ten dimensions of inclusion were identified: spatial inclusion, social inclusion, inclusion in innovation, inclusion in well-being, economic inclusion, digital inclusion, engagement of actors, inclusion in networks, environment and sustainability, and capacity-building. Each category also has distinctive policies and actions, but one of the main arguments is to pay attention to the relationship between different dimensions when designing inclusive innovation policies in innovation districts. The second argument was that "this study should encourage a re-evaluation of the purpose of IDs to include their utilization as testbeds or living labs to promote inclusion through a wide variety of experiments that specifically build upon their integrative approach and a relational understanding of inclusion." (Kalliokoski, submitted). This stems from the notion that cross-sectoral collaboration is often already present in innovation districts, and such arrangements could also contribute to more inclusive outcomes—for example, as part of the actors' sustainability strategies. However, this would require sufficient resources and a clear intent to coordinate these efforts among district stakeholders (Morisson & Bevilacqua, 2019; Morales et al., 2025; Zhao et al., 2025).

Collectively, these studies yield critical insights pertinent to the overarching findings of this thesis, as delineated in Table 4. The results indicate three primary themes: 1) discursive practices and narratives, 2) the multifaceted and relational meanings of inclusion, and 3) the significance of addressing the local context encompassing social, spatial, and temporal configurations for inclusion. Furthermore, the role of the public sector in monitoring and steering developments was prominently demonstrated in the studies.

Table 4. Synthesis of key results from sub-studies.

Sub studies	Key takeaways
I & II: Narratives and policy language, discursive practices	Currently, *inclusion* may refer to the involvement of any party or the specific inclusion and empowerment of marginalized groups, manifesting as policy decoupling. Limited narratives on communality and inclusion may cause divisive effects. This is relevant because language, narratives, and discourses shape the way cities and neighborhoods are developed, how communities emerge and are treated, and how policies and guidelines are designed and applied.

Sub studies	Key takeaways
I & III: The multifaceted and relational meaning of inclusion	Inclusion can be analyzed by recognizing its multiple forms of manifestation and employment—as a means, as an end, and by scrutinizing the agency of participants (who may be active or passive parties, and in what ways). Further, inclusion in urban settings needs to be recognized as a relational concept, considering the multiple factors and their interactions that contribute to inclusive or exclusive structures, both spatial and non-spatial.
II & III: The role of spatial, social, and temporal context, institutional impact	Studying four different cases at the neighborhood level revealed the importance of context when implementing innovation and development policies. Add-on policies may omit important aspects of the local community and/or reinforce harmful stereotypes and stigmas if not properly addressed. Local institutions, especially public governance, have an essential role in overseeing the overall development of the city and how external investments and private developments made in the name of innovation impact residents in terms of social sustainability and inclusion, in addition to economic gain.

5.1.1 Narratives and policy language, discursive practices

As noted in Chapter Three, discourses are part of the material becoming of the world. The role of narratives and discourses is an emerging area of research in inclusive innovation policy and its spatial applications (Parsons et al., 2024) but is already well recognized in other disciplines, such as urban sociology. In Sub-study II, we explored the process of 'othering,' in which communality is constructed and restricted through material-discursive practices. Narration and discourse build stories that are part of the material becoming of the world and are therefore agential in changing it. Strategies and policies are important avenues of storytelling that also communicate the priorities and purposes of urban and innovation policy to residents and local actors. By othering places, people, sectors, and jobs in discourse, it becomes difficult to establish a common understanding and a joint vision of inclusive principles, especially regarding matters of innovation.

If it is to succeed, inclusive innovation policy must be prioritized at a strategic level, that is, by senior management involved in city governance (Bramwell, 2021; Parsons et al., 2024). Critical studies on innovation discourse (innovation speak), have also found that the market-oriented framing of innovation impacts policy and practice by cementing the exclusion of marginalized communities and reinforcing existing unjust power dynamics (Jimenez, Pansera, & Abdelnour, 2025). Adding to this is the 'decoupling dilemma' discussed in Sub-study I, where the meaning of inclusion is

increasingly diverging from its original intent of empowering marginalized communities.

Therefore, the manner in which innovation policy engages with individuals, regions, occupations, sectors, the environment, or other relevant elements within discourse and narration becomes pivotal for the development of inclusive innovation policy in urban contexts. A shared vision and mutual understanding facilitate the replication, learning, maintenance, and advancement of inclusive processes and outcomes (Bramwell, 2021; Lee, 2023; Parsons et al., 2024). In the study conducted by Parsons et al. (2024, pp. 332), it was asserted that "coherent and perhaps ambitious narrative" could be employed to facilitate and sustain the advancement of inclusive innovation policy. Bramwell (2021, pp. 256) observed that the network involved in the implementation of InnovateGSO played a significant role in expanding the discourse beyond economic development and "[…] successfully articulating a vision for inclusive innovation […]". Nonetheless, extant scholarly literature has also recognized that branding a city as inclusive encompasses inherent challenges and tensions, as municipalities may exaggerate inclusivity for branding and marketing objectives or utilize it to pursue aims unrelated to social sustainability (Alsayel, de Jong, & Fransen, 2022; Zhao, Edelenbos, & de Jong, 2025). Zhao, Edelenbos, and de Jong (2025) found the branding of a city as inclusive is shaped by motivations including altruism and entrepreneurialism, alongside the city's objective level of inclusiveness. From an urban governance and management perspective, these notions are crucial for informing more inclusive innovation policies in cities, particularly given the previous dominance of technological and business innovation in driving urban development (Lee, 2023).

5.1.2 The multifaceted and relational meaning of inclusion

In Sub-study III, I argued for the reconceptualization of the purpose of innovation districts in order to build on their integrative planning approach to advance inclusive innovation outcomes. The argument is derived from two notions: the fuzziness and multifaceted meaning of inclusion in the literature (e.g., Lee, 2023) and the argument that because "IDs operate at the interface of urban, economic and innovation policies, trying to understand inclusion within a single domain such as economic, political, social, or spatial aspects might lead to potentially unsatisfactory results" (Kalliokoski, submitted; Armendaris et al., 2015; Lee, 2023). A relational and intertwined approach to inclusion may aid in designing the policy mixes that have been advocated for in inclusive innovation policy in cities (Planes-Satorra & Paunov, 2017; Bramwell, 2021; Lee, 2023; Parsons et al., 2024). This is needed because, as Lee (2023, pp. 8) put it, "Inequality and underrepresentation are the result of complex, interlinked

phenomena, not simply exclusion from the tech economy. A strategy that addresses one part of this – inclusion in the tech economy – is perhaps treating the symptom of these problems rather than the causes." Another example of a complex urban development challenge for inclusion is the emerging literature on green gentrification, or eco-gentrification; terms that reflect how green investments in cities can exacerbate social exclusion (e.g., Anguelovski et al., 2022; Leino, Wallin, & Laine, 2024).

With regard to the role of cities within the wider framework of innovation policy formulation and implementation, it can be argued that cities ought to be regarded as an essential component thereof, given that the cross-sectoral collaborative structures requisite for such transformative policy mixes are manifest in urban contexts: housing, infrastructure, social policy, the third sector, among others (Lee, 2023; Tödtling, Trippl & Desch, 2021; Uyarra et al., 2025). The spatial and temporal urban context, inherently, emerges as a critical element within this line of discourse. However, citing Clarke (2004, pp. 30), Bramwell observes that managing multi-actor environments composed of autonomous and complex organizations with "shared purposes but no shared authority" represents a challenging endeavor. This points towards a certain degree of institutionalization to be necessary for more inclusive policies, embedding them within "broader supportive institutional infrastructures", thereby reinforcing the strategic significance of inclusion in innovation (Bramwell, 2021, pp. 247; Lee, 2023; Parsons et al., 2024; Morales et al., 2025). Moreover, Bramwell asserts that in multistakeholder contexts implementing policy mixes, intermediary organizations—that is, entities that connect individuals with the organizations providing requisite services—play a pivotal role (Bramwell, 2021). According to Bramwell, these entities may include non-profit organizations, local government bodies, educational institutions, as well as various business and entrepreneurship support organizations and associations.

5.1.3 The role of spatial, social, and temporal context for inclusion

Urban research has been covering issues related to spatial injustices and inequities for a long time. From the standpoint of urban governance and management, this work is essential for guiding more inclusive innovation policies within cities, especially considering the prior predominance of technological and business innovation in shaping urban development (Lee, 2023). For example, segregation is a well-known issue, where social, economic, and spatial disadvantages concentrate in a single area. Segregation is an exemplifying challenge of an intertwined, complex process of exclusion. The reasons why segregation occurs are multiple: the dynamics and change of labor markets and the global economy (e.g., Smith, 2008), issues in the

urban form resulting from inadequate urban planning and policy, deprivation and neglect of buildings and environment, stigmatization of certain urban areas and the discrimination of their residents, as well as failures in other policy sectors, such as housing and social policies (Andersson, Bråmå & Holmqvist, 2010; Ruonavaara, Rasinkangas & Rosengren, 2025). While segregation is a phenomenon occurring in cities globally, how it manifests and influences local conditions are context-specific, and are also subject to administrative and political steering from the national level (Ruonavaara, Rasinkangas & Rosengren, 2025). Despite working with segregation for decades, a study by Musterd and others (2016) found that segregation had increased in European cities and that contextual and temporal factors need to be better accounted for in analyzing segregation.

What current innovation policy has largely failed to address, and what partly links it to deeper urban inequalities, is the spatiotemporal context of cities (Cappellano, Molica, & Makkonen, 2024; Uyarra et al., 2025). This issue is particularly pronounced at the national and supranational levels; however, innovation policies implemented by cities themselves also succumb to the pitfalls of one-dimensional technological solutionism despite their inclusive objectives (Lee, 2023). Each city possesses distinct histories, customs, cultures, and infrastructures that have evolved over time into their present forms (Parsons et al., 2024). As discussed in Chapter 3 regarding the plasticity of space and the present moment as the juncture at which "a defined object encounters the possibility of change", the future of cities is limited by existing conditions, yet the pathways for progress remain subject to debate (Jones, 2022, pp. 54). Similarly, Barad (2007, pp. 177) addresses constraints in relation to the agential realist concept of causality, proposing an alternative framework to the conventional discourse on determinism and free will: "[…] intra-actions iteratively reconfigure what is possible and what is impossible—possibilities do not sit still. One way to mark this is to say that intra-actions are constraining but not determining."

Although Barad notes that this is an imperfect way to describe it, since possibilities are constantly reconfiguring, it illustrates how we can rethink the dynamics of temporality, spatiality, and possibility within the context of material becoming. The way each city has materialized through its buildings, residents, environment, infrastructure, policies, and customs has created a system in which each component constrains, supports, or reconfigures possibilities to enable more inclusive outcomes. Urban form and infrastructure are therefore agential in both inclusive and exclusive processes, alongside policies. Inclusion should thus be understood in a comprehensive and dynamic manner, rather than in silos, highlighting the necessity of theorizing inclusion as relational. Redirecting the trajectory of increasingly unequal cities requires intentional, context-sensitive work, as no one-size-fits-all model exists (Chandler, 2022).

In the context of practical policy development, temporality is also significant in terms of continuity; a study by Bramwell (2021) demonstrated that institutional incapacity to sustain urban inclusive innovation initiatives resulted in their dissolution once external project funding ceased after two years. Therefore, the role of inclusion in urban innovation policies must be explicitly addressed with appropriate resources and deliberate intent, ensuring these policies are grounded in local conditions and communities from their inception and integrated into broader policy frameworks (Bramwell, 2021; Tödtling, Trippl & Desch, 2021; Lee, 2023; Parsons et al., 2024; Zhao et al., 2025). Otherwise, the risk is that policies remain ineffective or exacerbate socio-economic disparities. In Sub-study III, participants proposed specific measures including the allocation of funds for inclusive innovation policy, the appointment of an innovation district coordinator, and the establishment of thematic leadership roles that integrate inclusion and innovation (Kalliokoski, submitted).

As previously examined, earlier iterations of innovation and economic policies have perpetuated a legacy characterized by exclusion and deepening inequalities (Breau, Kogler & Bolton, 2014; Baum-Snow, Freedman & Pavan, 2018; Kemeny & Osman, 2018; Zandiatashbar & Kayanan, 2020; Kemeny, Petralia & Storper, 2022). It cannot be assumed that new framings, such as mission-oriented innovation policies (MOIP), do not perpetuate these legacies in some manner, notwithstanding the intention to broaden their scope (Diercks, Larsen & Steward, 2019; Wiarda, Rodríguez-Gironés & Doorn, 2025). Hence, the perspective of inclusion and context-sensitivity in formulating broad missions into locally actionable and contextually pertinent objectives is essential (Uyarra et al., 2025). As Coenen, Hansen, and Rekers (2015, pp. 492) recognize, "the need to go beyond so-called technological fixes when addressing grand challenges foregrounds the value of geographical perspectives in policymaking, where the role played by place-based social and political contexts in transformational change is explicitly acknowledged".

Since various forms of urban exclusion are interconnected and context-specific (e.g., Armendaris et al., 2015), solutions like an inclusive innovation policy require a holistic and relational approach to inclusion, as described in Sub-study III. Lee (2023) explains that innovation and entrepreneurship, often linked in traditional views, are risky activities largely governed by chance, with no guaranteed conditions for a breakthrough invention or solution. According to Stanley, Glennie, and Gabriel (2018), analyzing how costs, risks, and benefits are distributed in a policy is essential to inclusive innovation policy.

5.2 Advancing inclusive innovation policy in cities as a relational and place-based strategy

In the previous sub-chapter, I identified three central themes in the results of my sub-studies:1. Narratives and policy language, discursive practices, 2. The multifaceted and relational meaning of inclusion, and 3. The role of spatial, social, and temporal context, institutional impact. In light of the dynamic, intra-active becoming of reality, it can be summarized that narratives and discourses, policies, actors and institutions, as well as spatiality, form a relational system for the manifestation and interpretation of inclusion in cities. Next, the implications for the operationalization and theorization of inclusive innovation policy in cities are examined. I will argue that inclusive innovation policy should be considered in both relational and place-based terms within cities, recognizing the unique characteristics of each city while linking them to broader governance systems and power relations.

The place-based approach is substantiated by the increasing emphasis on geographical sensitivity in national and supranational innovation policy design (Uyarra et al., 2025), highlighting the necessity of leveraging the extensive knowledge within urban research disciplines concerning inclusion and exclusion. This is essential to fully actualize the potential of place-based approaches and their implementation for advancing inclusiveness. In the policy brief on *Suburban Innovation,* we propose the following definition and conceptual framework for place-based management:

> *"Place-based management involves developing areas together with residents, the city administration and other actors in the area. Place-based management is based on the use of co-development and user innovations. Place-based management identifies the problems, strengths and opportunities of an area, and seeks to develop it with stakeholders from other local areas in a solution-oriented way, drawing on local resources. Cross-sectoral administrative cooperation is also essential." (Luoto et al., 2023, pp. 3).*

Research on inclusive cities has adopted an integrative and holistic approach to the analysis and development of more inclusive and sustainable urban environments, encompassing social, spatial, economic, environmental, and political dimensions (Liang et al., 2022; Zhao et al., 2025). This body of knowledge should also guide the implementation of urban innovation policies to ensure their application is conducted in a more socially sustainable manner.

Focusing on the neighborhood level makes it possible to apply the principles of a place-based approach to create more effective and inclusive innovation policies that acknowledge the spatial dimension of such activities (Morales et al., 2025). The

process involves drawing on external resources and collaboration while simultaneously responding to the needs and knowledge of residents, supported by a relational and context-sensitive understanding of inclusion that emphasizes relational meaning-making and sense-making in urban policy. It also requires examining interactions between different areas and neighborhoods: how investments and other development activities influence various parts of the city, and how these dynamics affect overall social sustainability in the region (Planes-Satorra & Paunov, 2017). In line with the findings of Morales et al. (2025, pp. 749), "inclusive innovation is inherently geographical, demanding tailored strategies that account for local socio-economic dynamics and disparities."

Morales et al. (2025) contend that adopting a place-based approach can mitigate the "fuzziness" of inclusive innovation. That is because employing place-specific elements can spawn an evidence-based definition. This suggests a place-based management framework for inclusive innovation, wherein local assets can be leveraged to facilitate innovation activities while concurrently advancing urban social sustainability. This can be related to the more-than-relational perspective on spatial issues (Allen, 2012; Jones, 2022). Identifying key dimensions pertinent to inclusive urban innovation policy—such as social, economic, and political inclusion; the role of inclusive narratives and discourses; institutional influence and intent in shaping the strategic positioning of inclusion; cross-sectoral collaboration; and resource allocation—permits conceptualizing those factors in terms of their dynamic spatial materialization and manifestation within the urban context, even as they function within a multilevel governance framework.

Adopting such a place-based, context-sensitive approach facilitates conceptualizing inclusive innovation policies as integral components of public policy that promote innovation, while ensuring inclusivity and the preservation of the environment and consideration for future generations. This further emphasizes the role of cities as principal contexts and agents in inclusive innovation policy, as they encompass both the opportunities and challenges inherent in innovation and the multifaceted aspects of sustainable development.As argued in Sub-study III, urban innovation areas, including innovation districts, could be partially reconceptualized as testbeds employing cross-sectoral collaboration to advance inclusion via an integrative and relational approach (Kalliokoski, submitted). That redefinition would also include social innovations and other solutions originating from diverse publics that do not necessarily conform to the conventional, technology-centric definition of innovation (Heeks, Foster, & Nugroho, 2014). A relational perspective facilitates the acknowledgment of diverse and interrelated citizen and area user needs, such as education, housing, and economic development, and enables responses through collaborative, cross-sectoral efforts. However, institutions responsible for developing

these areas must recognize that the capacity of individuals to participate varies. For example, individuals and groups with limited resources, such as time or money, may lack opportunities to engage in policy development or innovation activities. Inclusiveness in participation is therefore essential, but not sufficient on its own (Kalliomäki et al., 2024), and capacity-building is an essential component for inclusive urban innovation policy (Kalliokoski, submitted). Urban innovation policies must also independently address social sustainability and equity by critically examining for whom and for what purposes urban areas and whole cities are being developed, and by anticipating how risks and benefits are distributed (Stanley, Glennie & Gabriel, 2018; Maalsen, Wolifson & Dowling, 2023).

In addition to generating broader societal benefits and greater equality of opportunity, understanding inclusion as a relational phenomenon entangled with innovation policy also requires acknowledging the wider systems, power relations, and framings that may reinforce inequalities, such as racism and other biases within policymaking institutions and organizations (Niskavaara et al., 2025), the polarizing and divisive dynamics of the neoliberal innovation economy (Maalsen, Wolifson & Dowling, 2023), and socio-spatial inequalities embedded in the urban form, such as segregation. For example, the "Rising economic inequality has significant gender, race, ethnicity, and generational effects," which are in turn connected to the dimension of urban innovation (Bramwell, 2021, pp. 244; Lee & Rodríguez-Pose, 2013; Kemeny & Osman, 2018).

This calls for context-sensitive governance of innovation policy in terms of objectives, participation, and directionality—for example, analyzing who benefits from innovation and how it is diffused and disseminated within and between urban areas and neighborhoods (Stanley, Glennie, & Gabriel, 2018; Maalsen, Wolifson, & Dowling, 2023). Integrating policy mixes and fostering sectoral collaboration are therefore essential for advancing more socially sustainable, equitable, and just outcomes at the urban level (Armendaris et al., 2015; Liang et al., 2022; Zhao, De Jong, & Edelenbos, 2023; Zhao et al., 2025). As Morales et al. (2025, pp. 750) stated, "Inclusive innovation strategies should encompass different temporalities – past (addressing multigenerational segregation), present (providing opportunities), and future (building expectations for improved livelihoods)." Re-examining urban innovation policies through a relational lens permits embedding the principles of inclusive innovation policy within the existing functions of the city. A relational perspective also provides an opportunity to understand participation from a more systemic viewpoint, extending beyond traditional participation mechanisms (Chilvers, Pallett, & Hargreaves, 2018).

Accordingly, it becomes apparent that promoting inclusion within innovation policy via a place-based relational approach is intrinsically linked to the distinctive attributes of a specific locale and recognizes inclusion as situated within broader governance systems, scales, and power relations. These scales encompass resident activities, local government, and national policy governance, as well as the influence exerted by multinational corporations that shape urban development. Furthermore, meaningful inclusion emerges from the consideration of its multiple dimensions, including social, economic, and spatial aspects (Armendaris et al., 2015). Therefore, both relational and place-based perspectives are essential: examining cities solely through a limited spatial lens (space as a container) is inadequate for revealing the complex phenomena of inclusion and must instead be situated within a broader systemic context.

In conclusion, it is imperative that the role of innovation in influencing societal outcomes within urban contexts be more explicitly acknowledged in urban innovation policy, given that innovation is inherently intertwined with the lived urban realities of residents and other stakeholders: “The role of policy in bringing about or preventing the dark side of innovation should therefore not be ignored.” (Boschma et al., 2025, pp. 4). The findings of this thesis demonstrate how narratives and discourses, policies, actors and institutions, and spatiality constitute a relational system through which inclusion is manifested and interpreted in urban innovation policies.

6 CONCLUSIONS

This thesis presents an investigation into inclusive innovation policies implemented in urban contexts. The findings indicate that although innovation can contribute to inequality, as characterized by spatial disparities across regions and cities, for example (Pinheiro et al., 2022; Breau, Kogler, & Bolton, 2014; Baum-Snow, Freedman, & Pavan, 2018), innovation policies have historically not prioritized concerns related to social inclusion or social sustainability (Lee, 2023; Planes-Satorra & Paunov, 2017). Innovation policy is increasingly integrated into various other domains of public policy to address the grand challenges of our time, which is a matter of particular concern (Mazzucato, 2018; Schot & Steinmueller, 2018). Notably, urban areas have particularly leveraged innovation to implement novel development strategies, such as innovation districts, to enhance their attractiveness and economic growth.

I have utilized a qualitative research strategy, as qualitative research is particularly effective for examining policy issues and their application. Initially, I established the theoretical framework by defining key concepts such as inclusive innovation, inclusive innovation policy, and the inclusive city. I examined the issue of urban social sustainability within the inclusive city framework before investigating cities as both agents and contexts in inclusive innovation policies. The investigations conducted by Bramwell (2021), Lee (2023), and Parsons et al. (2024) were integral to this study. The synthesis indicates that, to achieve success, municipal top management must prioritize inclusion strategically; inclusive discourses and narratives should be maintained within inclusive innovation policy; the existing multilevel governance framework both limits and simultaneously presents significant potential for inclusive innovation policy; and cross-sectoral, networked collaboration is essential to implement locally informed policy mixes that address regional strengths and developmental needs. Cities, and particularly neighborhoods, were selected as the unit of analysis due to their demonstrated and ongoing significance in the study of social sustainability. Moreover, innovation-based development can be conceptualized as an inherently geographical phenomenon, which must be considered in the examination of inclusive innovation (Morales et al., 2025).

Although the term *inclusion* is not without its limitations—stemming not only from its inherent malleability or "fuzziness" and the assumption of exclusive structures—it was selected as the focal concept of this thesis due to its applicability in innovation policy to addressing intertwined social, economic, and spatial issues, with justice serving as the foundational strategy (Armendaris et al., 2015; Papaioannou, 2014). Furthermore, recent scholarship has increasingly emphasized justice within transformative innovation policy frameworks, such as mission-oriented innovation

policies (MOIPs) (Wiarda, Rodríguez-Gironés, & Doorn, 2025). Such research thus underscores the need to extend the understanding of the social sustainability dimensions of innovation policy.

The philosophy of science was greatly influenced by the work of Barad (2007) on agential realism, as well as by newer (Malpas, 2012; Allen, 2012; Jones, 2022) and more traditional perspectives (Yeung, 2005; Sunley, 2008; Jones, 2009) on relational space. The purpose was to demonstrate the dynamic and interconnected nature of inclusion, which manifests in dynamic intra-activity within the specific spatial, temporal, and social configurations of each city. The material–discursive practices perspective conceptualizes discourses and narratives as integral components of the material constitution of the world, possessing agency in shaping and reconfiguring reality and its potentialities. Likewise, entities typically treated as inanimate background elements in accounts of human activity (e.g., nature and urban form, including roads and buildings) are understood as agential, insofar as they facilitate and constrain inclusion. An epistemological perspective similar to that of Barad (2007) was also adopted, according to which researchers are part of the world and the phenomena they investigate; knowledge is therefore produced from within the world through ongoing material–discursive entanglements, rather than from an external observational standpoint. This position has important ethical implications for research practice, since researchers are themselves agential in the (re)configuration of reality.

This thesis comprises three sub-studies, each contributing independently and collectively to the advancement of knowledge on inclusive innovation policy. Sub-study I investigated inclusion as an objective within science, technology, and innovation policy, highlighting the dilemma of policy decoupling and emphasizing the significance of precise policy language formulation. Sub-study II examined two neighborhoods in Vaasa, Finland, characterized by economic and reputational disadvantages relative to other areas. The findings identified three narration gestalts, or narrative essences, involved in the construction of communality: inclusion, recollection, and segregation. Dividing narratives and discourses manifests as diminished communality and increased discrimination, thereby limiting the opportunities for marginalized groups and individuals to engage in communal life. Finally, Sub-study III focused on the development of more inclusive innovation districts through the implementation of inclusive urban innovation policies. The results indicate that the collaborative structure of innovation districts is currently underexploited in the quest for inclusive outcomes, and that inclusion must be understood relationally to address the underlying causes of exclusivity.

The principal research questions of this thesis were as follows: 1. How does a relational conceptualization of inclusion advance both the theoretical understanding and practical design of inclusive innovation policies in urban contexts? and 2. How does a neighborhood-level analytical lens enhance the conceptualization and operationalization of inclusive innovation policies in urban contexts? The primary contribution of this thesis lies in demonstrating how narratives and discourses, policies, actors and institutions, and spatiality constitute a relational system for the manifestation and interpretation of inclusion within urban innovation policies. Policy and development discourses must be inclusive, and it is essential to acknowledge that, at present, not all narratives achieve equal societal resonance due to existing power asymmetries. The greater the opportunities for residents, particularly marginalized social groups, to engage in the narration of urban development, the more authentically they can shape the future trajectory of their cities. The policy dimension involves the comprehensive development of innovation policy as a public policy to address the social, spatial, economic, environmental, political, digital, and well-being aspects of inclusion, alongside capacity-building, stakeholder engagement, participation, and network configurations within innovation activities. Success requires inclusion to be prioritized in strategies, the allocation of adequate resources, and cross-sectoral collaboration to enhance societal value (see Bramwell, 2021; Lee, 2023; Parsons et al., 2024).

The dimension of spatiality is particularly related to research question two and the place-based approach: the inclusiveness of urban innovation constitutes an inherently spatial and geographical phenomenon (Morales et al., 2025). Furthermore, contextual sensitivity to each area's strengths, as well as to social injustices and systemic issues arising from the specific socio-spatial and temporal configurations of each city, can be more effectively addressed by employing the neighborhood scale. Consequently, the disparities between intensely developed and more deprived areas can be investigated more comprehensively, contributing to social sustainability and cities as a whole. The issue of actors and institutions involves the particular configuration of key actors and their networks within each city, as well as their institutional capacity, which may determine the success or failure of inclusive innovation policy when multilevel support for the matter exists (Bramwell, 2021). Cross-sectoral collaboration that is crucial for inclusive innovation policy is only possible with actors that are committed to advancing inclusion together and are ready to critically examine their own assumptions and biases related to, for example, priority setting and policymaking for innovation.

As a practical implication, there is a need to steer away from the technology-dependent framing on innovation and return to fundamental questions in urban planning and development: who is the city for and who are the planned beneficiaries

of innovation-based development? Who has the power to influence development priorities? It is recognized that it is increasingly difficult to support alternative framings on innovation due to volatile economic environment that is demanding cities more and more growth and investments to sustain their core functions. Without adequate funding, resources, and institutional capacity, inclusive innovation policy in cities is likely to be unsuccessful (Bramwell, 2021; Lee, 2023; Parsons et al., 2024). Therefore, multilevel policy steering accompanied with local institutional capacity and attuning to local context in its strengths and weaknesses emerges as a relevant strategy.

In summary, inclusive innovation policy in cities ought to be examined primarily in terms of its spatial characteristics *and* relational dynamics, as such policy does not operate in isolation or in the abstract. Instead, it generates both intended and unintended consequences that are spatial and relational as a part of wider systemic whole. The necessity to incorporate inclusiveness in such policy is justified from multiple perspectives: addressing past deficiencies in urban planning and policy, reversing the trajectory of prior innovation policy frameworks, grounding and legitimizing broader innovation policy objectives within local contexts, and mitigating the persistence of complex urban inequalities that innovation policy should not aggravate. By accounting for the spatial nature of such policies while linking them to broader governance systems and the multiple dimensions of inclusion, opportunities and benefits can be extended to a larger proportion of the urban population.

Finally, it is possible to consider if any sort of 'innovation' is needed to do what is right for people and the planet, in light of evidence concerning, for example, poverty dynamics, urban inequality, and climate change. In defense of the 'normative turn' in innovation policy, it can be argued that innovation is essential due to the complex, exclusionary, and oppressive systems, knowledge paradigms, and assumptions that have contributed to current challenges (Stephens, 2024). Nonetheless, redirecting the trajectory of innovation necessitates a fundamental revision of innovation policy objectives, processes, and foundations: It is insufficient merely to deprioritize mainstream innovation; critical attention must be directed toward the power relations and privileges that shape societal and innovation processes, as well as the underlying exclusionary norms and values informing decision-making (see Stephens, 2024). Treating principles of justice as merely normative in order to diminish their influence on innovation policy effectively assumes the neutrality of existing systems, priorities, and frameworks (Wiarda, Rodríguez-Gironés & Doorn, 2025). However, prioritizing technology and economic development over societal objectives could also be considered a normative stance (e.g., Tödtling, Trippl, & Desch, 2021), as discussed within the ideological foundations of neoliberalism (Brenner & Theodore,

2002). It also disregards the fact that historical processes involving inequalities and injustices contribute to the contemporary configuration of systems (Brenner & Theodore, 2002; Smith, 2008), thereby calling such neutrality into question.

Some potential directions for future research include the matters of justice in both transformative innovation policy and urban innovation policy (Wiarda, Rodríguez-Gironés & Doorn, 2025). This thesis offers a starting point for the academic scrutiny of inclusive innovation policies; however, as literature on the topic remains scarce, more research is needed on its theorization and operationalization in urban settings and beyond. In addition, recent research on the deployment of social innovation to advance transformative change in cities (e.g., Jeannerat & Lavanchy, 2024) is a promising area for future study that could be utilized in research on inclusive innovation policy.

References

Akinci, M. (2018). Inequality and economic growth: Trickle-down effect revisited. *Development Policy Review, 36*, O1–O24. https://doi.org/10.1111/dpr.12214

Alaja, A., & Lemola, T. (2023). Minne menet tutkimus- ja innovaatiopolitiikka? Teollisuuden palkansaajat TP ry. Analyysi 1/2023.

Allen, J. (2012). A more than relational geography?. *Dialogues in human geography, 2*(2), 190–193. https://doi.org/10.1177/2043820612449295

Alsayel, A., de Jong, M., & Fransen, J. (2022). Can creative cities be inclusive too? How do Dubai, Amsterdam, and Toronto navigate the tensions between creativity and inclusiveness in their adoption of city brands and policy initiatives?. *Cities, 128*, 103786. https://doi.org/10.1016/j.cities.2022.103786

Andersson, R., Bråmå, Å., & Holmqvist, E. (2010). Counteracting Segregation: Swedish Policies and Experiences. *Housing Studies, 25*(2), 237–256. https://doi.org/10.1080/02673030903561859

Anguelovski, I., Connolly, J.J.T., Cole, H. et al. (2022). Green gentrification in European and North American cities. *Nature Communications, 13*(1), 3816. https://doi.org/10.1038/s41467-022-31572-1

Armendaris, F., Hamilton, E., Lee, H., & Shah, P. (2015). *World - Inclusive cities approach paper*. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/402451468169453117

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of planners, 35*(4), 216–224. https://doi.org/10.1080/01944366908977225

Asian Development Bank (2017). *Enabling Inclusive Cities: Tool Kit for Inclusive Urban Development*. http://dx.doi.org/10.22617/TIM157428

Bailey, N., van Gent, W. P. C., and Musterd, S. (2017). Remaking Urban Segregation: Processes of Income Sorting and Neighbourhood Change. *Popul. Space Place*, 23: e2013. doi: 10.1002/psp.2013.

Bair, J., Mahutga, M., Werner, M., & Campling, L. (2021). Capitalist crisis in the "age of global value chains". *Environment and Planning A: Economy and Space, 53*(6), 1253–1272. https://doi.org/10.1177/0308518X211006718

Barad, K. (2003). Posthumanist performativity: Toward an understanding of how matter comes to matter. *Signs: Journal of women in culture and society, 28*(3), 801–831. https://doi.org/10.1086/345321

Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.

Baum-Snow, N., Freedman, M., & Pavan, R. (2018). Why Has Urban Inequality Increased? *American Economic Journal: Applied Economics 10*(4): 1–42. https://doi.org/10.1257/app.20160510

Bernelius, V., & Vaattovaara, M. (2016). Choice and segregation in the 'most egalitarian' schools: Cumulative decline in urban schools and neighbourhoods of Helsinki, Finland. *Urban Studies, 53*(15), 3155–3171. https://doi.org/10.1177/0042098015621441

Biswas, A. (2019). A framework to analyse inclusiveness of urban policy. *Cities, 87*, 174–184. https://doi.org/10.1016/j.cities.2018.09.022

Borrás, S., & Edquist, C. (2013). The choice of innovation policy instruments. *Technological forecasting and social change, 80*(8), 1513–1522. https://doi.org/10.1016/j.techfore.2013.03.002

Boschma, R., Fitjar, R. D., Giuliani, E., & Iammarino, S. (2025). Unseen costs: the inequities of the geography of innovation. *Regional Studies, 59*(1). https://doi.org/10.1080/00343404.2024.2445594

Bramwell, A. (2021). Inclusive innovation and the "ordinary" city: Incidental or integral?. *Local Economy, 36*(3), 242–264. https://doi.org/10.1177/02690942211019005

Breau, S., Kogler, D. F., & Bolton, K. C. (2014). On the Relationship between Innovation and Wage Inequality: New Evidence from Canadian Cities. *Economic Geography, 90*(4), 351–373. https://doi.org/10.1111/ecge.12056

Brenner, N., & Theodore, N. (2002). Cities and the geographies of "actually existing neoliberalism". *Antipode, 34*(3), 349–379. https://doi.org/10.1111/1467-8330.00246

Brorström, S., & Willems, J. (2021). Getting integrative urban regeneration strategies done: Insights from Antwerp and Gothenburg. *International Review of Administrative Sciences, 89*(2), 346–362. https://doi.org/10.1177/00208523211029122

Cadman, L. (2009). Non-Representational Theory/Non-Representational Geographies. In R. Kitchin & N. Thrift (eds.): *International Encyclopedia of Human Geography* (pp. 456–463). Elsevier.

Cappellano, F., Molica, F., & Makkonen, T. (2024). Missions and Cohesion Policy: is there a match?. *Science and Public Policy, 51*(3), 360–374. https://doi.org/10.1093/scipol/scad076

Carayannis, E., & Campbell, D. (2012). Triple Helix, Quadruple Helix and Quintuple Helix and How Do Knowledge, Innovation and the Environment Relate To Each Other? A Proposed Framework for a Trans-disciplinary Analysis. *International Journal of Social Ecology and Sustainable Development, 1*(1), 41–69. https://doi.org/10.4018/jsesd.2010010105

Cellini, R., & Lambertini, L. (2008). The Editor's Preface. In R. Cellini & L. Lambertini (eds.): *The economics of innovation* (pp. ix–xiii). Emerald Publishing Limited.

Chancel, L., Piketty, T., Saez, E., Zucman, G., Duflo, E., & Banerjee, A. (2022). Executive Summary. In: World Inequality Report 2022 (pp. 1–13). Harvard University Press. https://doi.org/10.2307/j.ctv3006zpt.4

Chandler, C. (2022). Contested autonomy in "smart" and "inclusive" innovation: test-driving transportation technology and policy in Pittsburgh. *Urban Geography, 44*(8), 1608–1627. https://doi.org/10.1080/02723638.2022.2112846

Chataway, J., Hanlin, R., & Kaplinsky, R. (2014). Inclusive innovation: an architecture for policy development. *Innovation and Development, 4*(1), 33–54. https://doi.org/10.1080/2157930X.2013.876800

Chesbrough, H. (2003). The logic of open innovation: managing intellectual property. *California management review, 45*(3), 33–58. https://doi.org/10.1177/000812560304500301

Chilvers, J., Pallett, H., & Hargreaves, T. (2018). Ecologies of participation in socio-technical change: The case of energy system transitions. *Energy Research & Social Science, 42*, 199–210. https://doi.org/10.1016/j.erss.2018.03.020

Coenen, L., Hansen, T., & Rekers, J. V. (2015). Innovation policy for grand challenges. An economic geography perspective. *Geography Compass, 9*(9), 483–496. https://doi.org/10.1111/gec3.12231

Connor, D. S., Xie, S., Jang, J., Frazier, A. E., Kedron, P., Jain, G., Yu, Y., & Kemeny, T. (2025). Big cities fuel inequality within and across generations. *PNAS nexus, 4*(2), pgae587. https://doi.org/10.1093/pnasnexus/pgae587

Davidson, M. (2010). Social sustainability and the city. *Geography Compass, 4*(7), 872–880. https://doi.org/10.1111/j.1749-8198.2010.00339.x

Dempsey, N., Bramley, G., Power, S., & Brown, C. (2011). The social dimension of sustainable development: Defining urban social sustainability. *Sustainable development, 19*(5), 289–300. https://doi.org/10.1002/sd.417

Dewsbury, J. D. (2000). Performativity and the event: enacting a philosophy of difference. *Environment and planning D: society and space, 18*(4), 473–496. https://doi.org/10.1068/d200t

Diercks, G., Larsen, H., & Steward, F. (2019). Transformative innovation policy: Addressing variety in an emerging policy paradigm. *Research Policy, 48*(4), 880–894. https://doi.org/10.1016/j.respol.2018.10.028

Doel, M. & Clarke, D. (2004). Gilles Deleuze. In P. Hubbard, R. Kitchin & G. Valentine (eds.): *Key Thinkers on Space and Place* (pp. 102–107). Sage Publications.

Einstein, A. (1954). Relativity and the Problem of Space. In Einstein, A., Gutfreund, H., & Renn, J.: *Relativity: The special and the general theory* (100th anniversary edition, 2015) (pp. 155–178). Princeton University Press.

Eskola, J. (2018). Väestön toimintakyky ja palvelut. In: *Turvallinen Suomi – Tietoja Suomen kokonaisturvallisuudesta*, pp. 103–116. Turvallisuuskomitea.

Esmaeilpoorarabi, N., Yigitcanlar, T., Guaralda, M., & Kamruzzaman, M. (2018). Does place quality matter for innovation districts? Determining the essential place characteristics from Brisbane's knowledge precincts. *Land Use Policy, 79*, 734–747. https://doi.org/10.1016/j.landusepol.2018.09.016

Esmaeilpoorarabi, N., Yigitcanlar, T., Kamruzzaman, M., & Guaralda, M. (2020a). How can an enhanced community engagement with innovation districts be established? Evidence from Sydney, Melbourne and Brisbane. *Cities, 96*, 102430. https://doi.org/10.1016/j.cities.2019.102430

Esmaeilpoorarabi, N., Yigitcanlar, T., Kamruzzaman, M., & Guaralda, M. (2020b). How does the public engage with innovation districts? Societal impact assessment of Australian innovation districts. *Sustainable Cities and Society, 52*, 101813. https://doi.org/10.1016/j.scs.2019.101813

Etzkowitz, H. (2003). Innovation in innovation: The triple helix of university-industry-government relations. *Social science information, 42*(3), 293–337. https://doi.org/10.1177/05390184030423002

Everth, T., & Gurney, L. (2022). Emergent Realities: Diffracting Barad within a quantum-realist ontology of matter and politics. *European Journal for Philosophy of Science, 12*(3), 51. https://doi.org/10.1007/s13194-022-00476-8

Fainstein, S. S. (2013). The just city. *International Journal of Urban Sciences, 18*(1), 1–18. https://doi.org/10.1080/12265934.2013.834643

Farole, T., Rodríguez-Pose, A., & Storper, M. (2011). Cohesion policy in the European Union: Growth, geography, institutions. *JCMS: Journal of Common Market Studies, 49*(5), 1089–1111. https://doi.org/10.1111/j.1468-5965.2010.02161.x.

Fastenrath, S., Tavassoli, S., Sharp, D., Raven, R., Coenen, L., Wilson, B., & Schraven, D. (2023). Mission-Oriented Innovation Districts: Towards challenge-led, place-based urban innovation. *Journal of Cleaner Production, 418*, 138079. https://doi.org/10.1016/j.jclepro.2023.138079

Faye, J., & Jaksland, R. (2021). Barad, Bohr, and quantum mechanics. *Synthese, 199*(3), 8231–8255. https://doi.org/10.1007/s11229-021-03160-1.

Fernandez, M., & Bentley, T. (2022). Early Evolution of an Innovation District: Origins and Evolution of MID and RMIT University's Social Innovation Precinct in Melbourne's City North. *Journal of evolutionary studies in business, 7*(2), 184–218. https://doi.org/10.1344/jesb2022.2.j111

Florida, R. (2005). *Luovan luokan esiinmarssi: Miten se muuttaa työssäkäyntiä, vapaa-aikaa, yhteiskuntaa ja arkielämää*. Talentum.

Florida, R. (2014). The creative class and economic development. *Economic development quarterly, 28*(3), 196–205. https://doi.org/10.1177/0891242414541693

Florida, R. (2017). *The New Urban Crisis: How Our Cities Are Increasing Inequality, Deepening Segregation, and Failing the Middle Class—and What We Can Do About It.* Basic Books.

Foray, D., Mowery, D. C., & Nelson, R. R. (2012). Public R&D and social challenges: What lessons from mission R&D programs?. *Research policy, 41*(10), 1697–1702. https://doi.org/10.1016/j.respol.2012.07.011

Gao, T., & Lim, S. (2023). Socio-spatial integration in innovation districts: Singapore's mixed-use experiment. *Cities, 140*, 104405. https://doi.org/10.1016/j.cities.2023.104405

Gerometta, J., Haussermann, H., & Longo, G. (2005). Social innovation and civil society in urban governance: Strategies for an inclusive city. *Urban studies, 42*(11), 2007–2021. https://doi.org/10.1080/00420980500279851

Gould, R. K., Martinez, D. E., & Hoelting, K. R. (2023). Exploring Indigenous relationality to inform the relational turn in sustainability science. *Ecosystems and People, 19*(1), 2229452. https://doi.org/10.1080/26395916.2023.2229452

Graafland, J., & Smid, H. (2019). Decoupling among CSR policies, programs, and impacts: An empirical study. *Business & society, 58*(2), 231–267. https://doi.org/10.1177/0007650316647951

Gupta, J., Cornelissen, V., & Ros-Tonen, M.A.F. (2015). Inclusive development. In P.H. Pattberg & F. Zelli (eds.): *Encyclopedia of Global Environmental Governance and Politics*, pp. 35–44. Edward Elgar Publishing.

Gupta, J., & Vegelin, C. (2016). Sustainable development goals and inclusive development. *International environmental agreements: Politics, law and economics, 16*(3), 433–448. https://doi.org/10.1007/s10784-016-9323-z

Gyourko, J., Mayer, C., & Sinai, T. (2013). Superstar cities. *American Economic Journal: Economic Policy, 5*(4), 167–199. https://doi.org/10.1257/pol.5.4.167

Harvey, D. (2003). The right to the city. *International Journal of Urban and Regional Research, 27*(4), 939–941. https://doi.org/10.1111/j.0309-1317.2003.00492.x

Harvey, D. (2009). *Social justice and the city* (revised edition). University of Georgia Press.

Hautamäki, A. (2011). Innovaatioiden ekosysteemit innovaatiotoiminnan perustana. In: Hautamäki, A. (ed.): *Teollisuus verkottuneessa innovaatiotaloudessa - esimerkkinä Keski-Suomen konepajateollisuus* (pp. 10–26). University of Jyväskylä, Serus Oy.

Heaphy, L., & Wiig, A. (2020). The 21st century corporate town: The politics of planning innovation districts. *Telematics and Informatics, 54*, 101459. https://doi.org/10.1016/j.tele.2020.101459

Heeks, R., Foster, C., & Nugroho, Y. (2014). New models of inclusive innovation for development. *Innovation and Development, 4*(2), 175–185. https://doi.org/10.1080/2157930X.2014.928982

Hidalgo, A., & Albors, J. (2008). Innovation management techniques and tools: a review from theory and practice. *R&D Management, 38*(2), 113–127. https://doi.org/10.1111/j.1467-9310.2008.00503.x

Holloway, L. (2004). Donna Haraway. In P. Hubbard, R. Kitchin & G. Valentine (eds.): *Key Thinkers on Space and Place* (pp. 167–173). Sage Publications.

Hosseini, M., Kerridge, S., Allen, L., Kiermer, V., & Holmes, K. (2026). CRediT Roles and Example Research Tasks That Could be Attributed to Them. Zenodo. https://doi.org/10.5281/zenodo.18421449

Hüttenhain, B., & Kübler, A. I. (2021). City and Industry: How to Cross Borders? Learning From Innovative Company Site Transformations. *Urban Planning, 6*(3), 368–381. https://doi.org/10.17645/up.v6i3.4240

Introna, L. D. (2011). The enframing of code: Agency, originality and the plagiarist. *Theory, Culture & Society, 28*(6), 113–141. https://doi.org/10.1177/0263276411418131

Irizarry, J. L., Berry-James, R. M., Humphrey, D. D., Emas, R., McDonald III, B. D., Nordin, J., Lee, M., Evans, L. L., Starke, Jr., A. M., & Grosflam, J. M. (2025). Threats to Democracy: A Danger to Social Justice for All. *Journal of Social Equity and Public Administration, 3*(2), 309–319. https://doi.org/10.24926/jsepa.v3i2.6796

Jaksland, R. (2021). Norms of testimony in broad interdisciplinarity: The case of quantum mechanics in critical theory. *Journal for General Philosophy of Science, 52*(1), 35–61. https://doi.org/10.1007/s10838-020-09523-5

Jaksland, R. (2024). Naturalized, Fundamental, and Feminist Metaphysics All at Once: The Case of Barad's Agential Realism. *Hypatia, 39*(2), 363–384. https://doi.org/10.1017/hyp.2023.114

Jeannerat, H., & Lavanchy, P. (2024). Transformative social innovation in, of and by the city: Beyond mission-driven policy rationales. *Environmental Innovation and Societal Transitions, 52*, 100890. https://doi.org/10.1016/j.eist.2024.100890

Jimenez, A., Pansera, M., & Abdelnour, S. (2025). Imposing innovation: How 'innovation speak'maintains postcolonial exclusion in Peru. *World Development, 189*, 106914. https://doi.org/10.1016/j.worlddev.2024.106914

Jones, M. (2009). Phase space: geography, relational thinking, and beyond. *Progress in human geography, 33*(4), 487–506. https://doi.org/10.1177/0309132508101599

Jones, M. (2022). For a 'new new regional geography': plastic regions and more-than-relational regionality. *Geografiska Annaler: Series B, Human Geography, 104*(1), 43–58. https://doi.org/10.1080/04353684.2022.2028575

Kalliokoski, J. (Submitted). Inclusion in Innovation Districts: A Relational Perspective. Book chapter.

Kalliomäki, H., Kalliokoski, J., Woodson, T., Kunttu, L., & Kuusisto, J. (2024). Inclusion as a science, technology, and innovation policy objective in high-income countries: the decoupling dilemma. *Science and Public Policy, 51*(5), 795–807. https://doi.org/10.1093/scipol/scae019

Kalliomäki, H., Oinas, P., & Salo, T. (2024). Innovation districts as strategic urban projects: the emergence of strategic spatial planning for urban innovation. *European Planning Studies, 32*(1), 78–96. https://doi.org/10.1080/09654313.2023.2216727

Katz, B. & Wagner, J. (2014). *The Rise of Innovation Districts: A New Geography of Innovation in America*. Brookings Institution.

Kayanan, C. M. (2022). A critique of innovation districts: Entrepreneurial living and the burden of shouldering urban development. *Environment and Planning A: Economy and Space, 54*(1), 50–66. https://doi.org/10.1177/0308518X211049445

Kayanan, C. M., Drucker, J., & Renski, H. (2022). Innovation Districts and Community Building: An Effective Strategy for Community Economic Development?. *Economic Development Quarterly, 36*(4), 343–354. https://doi.org/10.1177/08912424221120016

Kemeny, T., & Osman, T. (2018). The wider impacts of high-technology employment: Evidence from US cities. *Research Policy, 47*(9), 1729–1740. https://doi.org/10.1016/j.respol.2018.06.005

Kemeny, T., Petralia, S., & Storper, M. (2022). Disruptive innovation and spatial inequality. *Regional Studies, 59*(1). https://doi.org/10.1080/00343404.2022.2076824

Lahti, K. (2023, May 11). Akkutehdasalueen läheisen Ristinummen mainetta yritetään puhdistaa miljoonapanostuksilla - "Kyllä tämä valitettavasti vieläkin aika slummialue on". *Ilkka-Pohjalainen*. https://ilkkapohjalainen.fi/arki-ja-hyvinvointi/akkutehdasalueen-l%C3%A4heisen-ristinummen-mainetta-yritet%C3%A4%C3%A4n-puhdistaa-miljoonapanostuksilla-kyll%C3%A4-t%C3%A4m%C3%A4-valitettavasti-viel%C3%A4kin-aika-slummialue-on

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford University Press.

Lee, N. (2020). Inclusive innovation as urban policy: A review and critique. Available at: https://na.eventscloud.com/file_uploads/8518f7948c64ae393d0e38a46f1f4563_InclusiveinnovationDRAFT.pdf

Lee, N. (2023). Inclusive innovation in cities: from buzzword to policy. *Regional Studies, 59*(1). https://doi.org/10.1080/00343404.2023.2168637

Lee, N., & Rodríguez-Pose, A. (2013). Innovation and spatial inequality in Europe and USA. *Journal of Economic Geography, 13*(1), 1–22. https://doi.org/10.1093/jeg/lbs022

Leino, H., Wallin, A., & Laine, M. (2024). Eco-gentrification in a Welfare State: How Sustainable City Development Gradually Reduces Social Equity. *Urban Affairs Review, 61*(1), 70–93. https://doi.org/10.1177/10780874241241258

Liang, D., De Jong, M., Schraven, D., & Wang, L. (2022). Mapping key features and dimensions of the inclusive city: A systematic bibliometric analysis and literature study. *International Journal of Sustainable Development & World Ecology, 29*(1), 60–79. https://doi.org/10.1080/13504509.2021.1911873

Luoto, I., Kalliokoski, J., Honkaniemi, T., Perikangas, S., Heino, H., Lehtonen, T. & Tuurnas, S. (2023). Suburban Innovation – Research on the development of Ristinummi and the Olympic Quarter. Policy Brief.

Maalsen, S., Wolifson, P., & Dowling, R. (2023). Gender in the Australian innovation ecosystem: planning smart cities for men. *Gender, Place & Culture, 30*(2), 299–320. https://doi.org/10.1080/0966369X.2022.2053068

Malpas, J. (2012). Putting space in place: Philosophical topography and relational geography. *Environment and Planning D: Society and Space, 30*(2), 226–242. https://doi.org/10.1068/d20810

Mazzucato, M. (2018). Mission-oriented innovation policies: challenges and opportunities. *Industrial and corporate change, 27*(5), 803–815. https://doi.org/10.1093/icc/dty034

Ministry of the Environment (2025). Suburban development programme. Accessed 3.8.2025. Available at: https://ym.fi/en/suburban-development-programme

Morales, D., Green, L., Marlow, D., Cadena Gaitán, C., Deitrick, S., Glass, M. R., & Kempton, L. (2025). Defining inclusive innovation: challenges and lessons for innovation districts. *Regional Studies, Regional Science, 12*(1), 740–753. https://doi.org/10.1080/21681376.2025.2543915

Morisson, A., & Bevilacqua, C. (2019). Balancing gentrification in the knowledge economy: the case of Chattanooga's innovation district. *Urban Research & Practice, 12*(4), 472–492. https://doi.org/10.1080/17535069.2018.1472799

Mortazavi, S., Eslami, M. H., Hajikhani, A., & Väätänen, J. (2021). Mapping inclusive innovation: A bibliometric study and literature review. *Journal of Business Research, 122*, 736–750. https://doi.org/10.1016/j.jbusres.2020.07.030

MOT Oxford Dictionary of English (2025). Neo-liberal. Kielikone Oy. Retrieved 24.11.2025 from www.sanakirja.fi/l_oxford_english/english-english/neo-liberal

Mulgan, G., Tucker, S., Ali, R. & Sanders, B. (2007). Social Innovation: what it is, why it matters, how it can be accelerated. University of Oxford, Young Foundation. https://youngfoundation.org/wp-content/uploads/2012/10/Social-Innovation-what-it-is-why-it-matters-how-it-can-be-accelerated-March-2007.pdf

Murdoch, J. (2005). *Post-structuralist geography: a guide to relational space*. London: Sage.

Musterd, S., Marcińczak, S., van Ham, M., & Tammaru, T. (2016). Socioeconomic segregation in European capital cities. Increasing separation between poor and rich. *Urban Geography, 38*(7), 1062–1083. https://doi.org/10.1080/02723638.2016.1228371

Nijman, J., & Wei, Y. D. (2020). Urban inequalities in the 21st century economy. *Applied geography, 117*, 102188. https://doi.org/10.1016/j.apgeog.2020.102188

Niskavaara, M., Luoto, I., Lehtonen, T., & Kalliokoski, J. (2025). Reconsidering neighbourhood communality through the lens of intersectionality: resident and authority perspectives. *Geografiska Annaler: Series B, Human Geography*, *107*(2), 135–153. https://doi.org/10.1080/04353684.2023.2283607

OECD (2015). *Innovation Policies for Inclusive Growth*. OECD Publishing, Paris. https://doi.org/10.1787/9789264229488-en

OECD (2025). *Place-Based Policies for the Future*. OECD Regional Development Studies, OECD Publishing, Paris. https://doi.org/10.1787/e5ff6716-en

Orlikowski, W. J., & Scott, S. V. (2015). Exploring material-discursive practices. *Journal of management studies, 52*(5), 697–705. https://doi.org/10.1111/joms.12114

Oxford Dictionary of English, MOT (2024). Inclusion. Kielikone Oy. Accessed 27.2.2024. Available at: www.sanakirja.fi/oxford_english/english-english/inclusion

Pancholi, S., Yigitcanlar, T., & Guaralda, M. (2019). Place making for innovation and knowledge-intensive activities: The Australian experience. *Technological Forecasting and Social Change, 146*, 616–625. https://doi.org/10.1016/j.techfore.2017.09.014

Papaioannou, T. (2014). How inclusive can innovation and development be in the twenty-first century?. *Innovation and Development, 4*(2), 187–202. https://doi.org/10.1080/2157930X.2014.921355

Parsons, K., Delbridge, R., Uyarra, E., Waite, D., Huggins, R., & Morgan, K. (2024). Advancing inclusive innovation policy in the UK's second-tier city-regions. *Review of Regional Research, 44*(3), 313-336. https://doi.org/10.1007/s10037-024-00209-9

Peck, J. (2005). Struggling with the creative class. *International journal of urban and regional research, 29*(4), 740–770. https://doi.org/10.1111/j.1468-2427.2005.00620.x

Perikangas, S., & Tuurnas, S. (2023). Design for inclusive digital co-production. *Public Management Review, 26*(6), 1731–1751. https://doi.org/10.1080/14719037.2023.2224819

Pinheiro, F. L., Balland, P. A., Boschma, R., & Hartmann, D. (2022). The dark side of the geography of innovation: relatedness, complexity and regional inequality in Europe. *Regional Studies, 59*(1). https://doi.org/10.1080/00343404.2022.2106362

Pinson, G., & Morel Journel, C. (2016). The Neoliberal City – Theory, Evidence, Debates. *Territory, Politics, Governance, 4*(2), 137–153. https://doi.org/10.1080/21622671.2016.1166982

Planes-Satorra, S. & C. Paunov (2017). *Inclusive innovation policies: Lessons from international case studies*. OECD Science, Technology and Industry Working Papers, No. 2017/02. OECD Publishing, Paris. https://doi.org/10.1787/a09a3a5d-en

Pouw, N., & McGregor, A. (2014). An economics of wellbeing: what would economics look like if it were focused on human wellbeing?. *IDS Working Papers, 2014*(436), 1–27. https://doi.org/10.1111/j.2040-0209.2014.00436.x

Rikala, S., Wallin, A., & Sjöblom, J. (2023). Miten sosiaalista kestävyyttä tehdään? Ruohonjuuritason toimijoiden sosiaaliset käytännöt entisen tehdasalueen elävöittämisessä. *Sosiologia, 60*(1), 5–21. https://journal.fi/sosiologia/article/view/128681

Ruonavaara, H., Rasinkangas, J., & Rosengren, K. (2025). Preventing, curing, mitigating: Anti-segregation policies in urban Finland. *Cities, 160*, 105838. https://doi.org/10.1016/j.cities.2025.105838

Sachs, I. (2004). *Inclusive development strategy in an era of globalization*. Working Paper No. 35. Policy Integration Department, World Commission on the Social Dimension of Globalization International Labour Office. http://dx.doi.org/10.2139/ssrn.908233

Schillo, R. S., & Robinson, R. M. (2017). Inclusive innovation in developed countries: The who, what, why, and how. *Technology Innovation Management Review, 7*(7): 34–46. http://doi.org/10.22215/timreview/1089

Schot, J., & Steinmueller, W. E. (2018). Three frames for innovation policy: R&D, systems of innovation and transformative change. *Research policy, 47*(9), 1554–1567. https://doi.org/10.1016/j.respol.2018.08.011

Schwaag Serger S., Soete L. and Stierna J. (eds) (2023). *The Square: Putting place-based innovation policy for sustainability at the centre of policymaking*. Publications Office of the European Union, Luxembourg. doi:10.2760/135706, JRC131244

Security Committee (2025). Security Strategy for Society: Government resolution. Publications of the Finnish Government 2025:1. Helsinki. https://urn.fi/URN:ISBN:978-952-383-762-1

Seyfang, G., & Smith, A. (2007). Grassroots innovations for sustainable development: Towards a new research and policy agenda. *Environmental politics, 16*(4), 584–603. https://doi.org/10.1080/09644010701419121

Shirazi, M. R., & Keivani, R. (2017). Critical reflections on the theory and practice of social sustainability in the built environment – a meta-analysis. *Local Environment, 22*(12), 1526–1545. https://doi.org/10.1080/13549839.2017.1379476

Shirazi, M. R., & Keivani, R. (2019). The triad of social sustainability: Defining and measuring social sustainability of urban neighbourhoods. *Urban Research & Practice, 12*(4), 448–471. https://doi.org/10.1080/17535069.2018.1469039

Shutters, S. T., Applegate, J. M., Wentz, E., & Batty, M. (2022). Urbanization favors high wage earners. *Npj Urban Sustainability, 2*(1), 6. https://doi.org/10.1038/s42949-022-00049-x

Smith, N. (2008). *Uneven Development: Nature, Capital, and the Production of Space*. Third edition. The University of Georgia Press.

Stanley, I., Glennie, A., & Gabriel, M. (2018). *How inclusive is innovation policy? Insights from an international comparison*. National Endowment for Science, Technology and the Arts (NESTA) working paper. London, United Kingdom.

Stephens, J. C. (2024). The dangers of masculine technological optimism: Why feminist, antiracist values are essential for social justice, economic justice, and climate justice. *Environmental Values, 33*(1), 58–70. https://doi.org/10.1177/096327192312087

Storper, M. (2021). Separate worlds? Explaining the current wave of regional economic polarization. In: A. Million, C. Haid, I. Castillo Ulloa & N. Baur (Eds.): *Spatial transformations: Kaleidoscopic perspectives on the refiguration of spaces* (pp. 136–150). Routledge. https://doi.org/10.4324/9781003036159

Suburban Innovation (2023a). In English. Accessed 3.8.2025. Available at: https://sites.uwasa.fi/lahioinno/in-english/

Suburban Innovation (2023b). Lähiö-Inno tutkii asuinalueiden segregaatiota ja sosiaalista kestävyyttä. Accessed 3.8.2025. Available at: https://sites.uwasa.fi/lahioinno/lahio-inno-tutkii-asuinalueiden-segregaatiota-ja-sosiaalista-kestavyytta/

Sunley, P. (2008). Relational economic geography: a partial understanding or a new paradigm?. *Economic geography, 84*(1), 1–26. https://doi.org/10.1111/j.1944-8287.2008.tb00389.x

Szopik-Depczyńska, K., Kędzierska-Szczepaniak, A., Szczepaniak, K., Cheba, K., Gajda, W., & Ioppolo, G. (2018). Innovation in sustainable development: an investigation of the EU context using 2030 agenda indicators. *Land use policy, 79*, 251–262. https://doi.org/10.1016/j.landusepol.2018.08.004

Tabarés, R., Loeber, A., Nieminen, M., Bernstein, M. J., Griessler, E., Blok, V., Cohen, J., Hönigmayer, H., Wunderle, U., & Frankus, E. (2022). Challenges in the implementation of responsible research and innovation across Horizon 2020. *Journal of Responsible Innovation, 9*(3), 291–314. https://doi.org/10.1080/23299460.2022.2101211

TENK (2023). *The Finnish Code of Conduct for Research Integrity and Procedures for Handling Alleged Violations of Research Integrity in Finland*. Publications of the Finnish National Board on Research Integrity TENK, 4/2023.

Tilley, H., Newman, J., Connell, A., Hoole, C., & Mukherjee, A. (2023). A place-based system? Regional policy levers and the UK's productivity challenge. *Regional Studies, 57*(10), 2102–2114. https://doi.org/10.1080/00343404.2022.2152436

Tynan, L. (2021). What is relationality? Indigenous knowledges, practices and responsibilities with kin. *Cultural geographies, 28*(4), 597–10. https://doi.org/10.1177/14744740211029287

Tödtling, F., Trippl, M., & Desch, V. (2021). New directions for RIS studies and policies in the face of grand societal challenges. *European Planning Studies, 30*(11), 2139–2156. https://doi.org/10.1080/09654313.2021.1951177

United Nations (2025). *World Urbanization Prospects 2025: Ten Key Messages*. Available at: https://www.un.org/development/desa/pd/world-urbanization-prospects-2025

Uyarra, E., Bugge, M. M., Coenen, L., Flanagan, K., & Wanzenböck, I. (2025). Geographies of mission-oriented innovation policy. *Environmental Innovation and Societal Transitions, 56*, 100970. https://doi.org/10.1016/j.eist.2025.100970

Vietinghoff, C. (2021). An intersectional analysis of barriers to cycling for marginalized communities in a cycling-friendly French City. *Journal of transport geography, 91*, 102967. https://doi.org/10.1016/j.jtrangeo.2021.102967

Von Hippel, E. (2005). Democratizing innovation: The evolving phenomenon of user innovation. *Journal für Betriebswirtschaft, 55*(1), 63–78. https://doi.org/10.1007/s11301-004-0002-8

Warf, B. (2004). Nigel Thrift. In P. Hubbard, R. Kitchin & G. Valentine (eds.): *Key Thinkers on Space and Place* (pp. 294–300). Sage Publications.

Wiarda, M., Rodríguez-Gironés, E., & Doorn, N. (2025). How has mission-oriented innovation policy addressed justice considerations? A systematic review. *Science and Public Policy*, scaf025. https://doi.org/10.1093/scipol/scaf025

Williams, N. (2020). Non-Representational Theory. In A. Kobayashi (ed.): *International Encyclopedia of Human Geography*. Second Edition (pp. 421-427). Elsevier.

Wilson, D., & Keil, R. (2008). The real creative class. *Social & Cultural Geography, 9*(8), 841–847. https://doi.org/10.1080/14649360802441473

Woodson, T., & Boutilier, S. (2022). Impacts for whom? Assessing inequalities in NSF-funded broader impacts using the inclusion-immediacy criterion. *Science and Public Policy, 49*(2), 168–178. https://doi.org/10.1093/scipol/scab072

Yeung, H. W. C. (2005). Rethinking relational economic geography. *Transactions of the Institute of British Geographers, 30(*1), 37–51. https://doi.org/10.1111/j.1475-5661.2005.00150.x

Yigitcanlar, T., Adu-McVie, R., & Erol, I. (2020). How can contemporary innovation districts be classified? A systematic review of the literature. *Land Use Policy, 95*, 104595. https://doi.org/10.1016/j.landusepol.2020.104595

Yin, R.K. (2003). *Applications of Case Study Research*. Second Edition. Sage Publications.

Zandiatashbar, A., & Kayanan, C. M. (2020). Negative consequences of innovation-igniting urban developments: Empirical evidence from three US cities. *Urban Planning, 5*(3), 378–391. https://doi.org/10.17645/up.v5i3.3067

Zhang, Y., Luo, F., & Dai, Y. (2025). Understanding socio-spatial inclusion: How age, ethnic, and income inclusion relate to neighborhood transport, land use, and housing features in Australia. *Habitat International, 162*, 103430. https://doi.org/10.1016/j.habitatint.2025.103430

Zhao, R., De Jong, M., & Edelenbos, J. (2023). Will the true inclusive city rise? Mapping the strengths and weaknesses of the city ranking systems. Cities, 143, 104617. https://doi.org/10.1016/j.cities.2023.104617.

Zhao, R., Edelenbos, J., & de Jong, M. (2025). Between branding and being: how are inclusive city branding and inclusive city practices related?. *Journal of Place Management and Development, 18*(1), 20–39. https://doi.org/10.1108/JPMD-11-2023-0113

Zhao, R., Edelenbos, J., de Jong, M., Belabas, W., & Björner, E. (2025). Challenges of implementing inclusive city policies in three European port cities. *npj Urban Sustainability, 5*(1), 47. https://doi.org/10.1038/s42949-025-00239-3

Ziegler, R. (2017). Social innovation as a collaborative concept. *Innovation: The European Journal of Social Science Research, 30*(4), 388–405. https://doi.org/10.1080/13511610.2017.1348935

Åhman, H. (2013). Social sustainability – society at the intersection of development and maintenance. *Local Environment, 18*(10), 1153–1166. https://doi.org/10.1080/13549839.2013.788480

Official sources

The Constitution of Finland. 11.6.1999/731. Finlex. Retrieved 2025-12-14 from https://www.finlex.fi/fi/lainsaadanto/1999/731

Non-discrimination Act. 30.12.2014/1325. Finlex. Retrieved 2025-12-14 from https://www.finlex.fi/fi/lainsaadanto/2014/1325

Appendix. Alternative texts for figures in sub-studies I and II

The purpose of this appendix is to present alternative texts for figures in sub-studies I and II that have been previously published in academic journals.

Sub-study I: Kalliomäki, H., Kalliokoski, J., Woodson, T., Kunttu, L., & Kuusisto, J. (2024). Inclusion as a science, technology, and innovation policy objective in high-income countries: the decoupling dilemma. *Science and Public Policy, 51*(5), 795–807. https://doi.org/10.1093/scipol/scae019

Figure 1. Conceptual synthesis of the broadening scope of inclusion as an STI policy objective.

Diagram illustrating the relationship between agency and goal setting in the context of STI policy objectives related to inclusion. Agency is shown on the vertical axis, ranging from passive to active, while goal setting is shown on the horizontal axis, ranging from ends to means. A yellow shaded area highlights the broadening scope of inclusion as an STI policy objective across the axes.

Figure 2. Conceptual framework for decoupling meanings of inclusion as an STI policy objective.

Diagram illustrating the decoupling of the meaning of inclusion in the STI policy context. Agency is shown on the vertical axis, ranging from passive to active, and goal setting on the horizontal axis, ranging from ends to means. Two colored triangular areas highlight different emphases of inclusion resulting from the decoupling dilemma: broad inclusion of actors in co-production (blue) and inclusion of marginalized groups (yellow).

Figure 3. Examples of decoupling meanings of inclusion.

Diagram showing a framework for the decoupling of inclusion in STI policy with examples. Agency ranges from passive to active on the vertical axis, and goal setting from ends to means on the horizontal axis. A blue triangular area represents broad inclusion in co-production, ranging from passive community consultation to active user-led innovation. A yellow triangular area represents inclusion of marginalized groups, ranging from top-down gender balance initiatives to institutional and systemic change driven by the active agency of marginalized actors.

Sub-study II: Niskavaara, M., Luoto, I., Lehtonen, T., & Kalliokoski, J. (2025). Reconsidering neighbourhood communality through the lens of intersectionality: resident and authority perspectives. *Geografiska Annaler: Series B, Human Geography*, *107*(2), 135–153. https://doi.org/10.1080/04353684.2023.2283607

Figure 1. Map of Finland and Vaasa.

Map showing the location of Vaasa in Western Finland, accompanied by a city map of Vaasa highlighting the Olympia Quarter near the city center and Ristinummi on the eastern side of the city. The map includes north arrows, scale bars, and surrounding neighborhoods for geographic context.

Figure 2. Communality in intersections.

Diagram illustrating the emergence of communality in a neighborhood at the intersections of narration gestalts and local determinants. It features three key categories of local determinants—residents, institutions, and the environment—and three narration gestalts: recollection, segregation, and inclusion. All six categories are connected by a central hexagon labeled “Neighbourhood & Communality.”

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Inclusion as a science, technology, and innovation policy objective in high-income countries: the decoupling dilemma

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This paper scrutinizes the objective of inclusion in contemporary science, technology, and innovation (STI) policies by analyzing its manifestations within the broad STI policy language promoting a closer interaction between science and society. We contribute to the STI policy literature by revisiting current conceptualizations that primarily center on marginalized groups. By analyzing the Broader Impacts Criterion and Responsible Research and Innovation frameworks in the USA and the European Union, we show that inclusion in the context of high-income countries is partially decoupling from marginalization and increasingly being instrumentalized to serve impact agendas. Our conceptual framework synthesizing the dimensions of goal setting and agency illustrates the broadening scope of inclusive policies and the emergent decoupling dilemma that has been neglected in the literature. Future research must account for the growing ambiguity of policy language that is facing new legitimacy questions and the blurring of objectives focused on supporting marginalized groups.

Keywords: science, technology and innovation policy; inclusion; societal impact; decoupling; responsible research and innovation; broader impacts criteria.

1. Introduction

Inclusion as a policy objective has been acquiring increasing significance in science, technology and innovation (STI) policy agendas globally, and its conceptual foundations have been explored from multiple perspectives, through both individual case studies and comprehensive syntheses (e.g. Chataway, Hanlin, and Kaplinsky 2014; Heeks, Foster, and Nugroho 2014; Schillo and Robinson 2017; Mortazavi et al. 2021). Despite the rather wide-ranging debates that have taken place in recent years, current conceptualizations of inclusion do not seem to match the discursive realities of contemporary policymaking in high-income countries such as the USA and European Union (EU) member states. In the literature on inclusive innovation, the starting point of theorizing has often been to position inclusion between innovation and development studies, in contrast to "mainstream innovation," which is associated with increasing inequalities (e.g. Chataway, Hanlin, and Kaplinsky 2014; Heeks, Foster, and Nugroho 2014; Pansera and Owen 2018). This approach conceptualizes inclusive innovation as "the inclusion within some aspect of innovation of groups who are currently marginalized" (see Foster and Heeks 2013: 335) and often focuses on "processes of innovation that specifically encompass those on the lowest incomes" (Foster and Heeks 2013: 334). However, the discussion does not focus on the other, increasingly visible approach to inclusion—namely, the inclusion of basically any actor(s) within a group, process, or structure in the broad STI domain (e.g. Burget, Bardone, and Pedaste 2017; Lieu et al. 2023) hence decoupling from marginalization.

We see this as an important conceptual and practical dilemma that deserves closer attention. Revisiting the current conceptual approaches is necessary to bridge the gap between the theory and practice of STI policymaking. We widen the discussion from the inclusive innovation studies strand, which is situated at and draws from the development studies interface, to the broader STI policy studies umbrella. This umbrella covers not only different geographical and institutional contexts but also reflects a shift away from "initial views postulating a linear relationship between scientific research, technological development, and eventually innovation" toward a more systemic and complex understanding of innovation that provides a new theoretical basis for STI policy studies (Molas-Gallart and Davies 2006: 65; Magro, Navarro, and Zabala-Iturriagagoitia 2014; Schot and Steinmuller 2018). We broaden the perspective as we hypothesize contemporary STI policy framings encompassing the diversifying meanings of inclusion that, in turn, contribute to confusing policy language around the topic. Similar to STI policies, inclusive policies are increasingly horizontal and systemic by nature, highlighting the need for a comprehensive understanding of inclusion (cf. Chataway, Hanlin, and Kaplinsky 2014) and bridging of literature strands under the broad STI policy umbrella.

STI policies have been criticized for neglecting the views of marginalized groups and carrying the risk of growing inequalities (e.g. Harsh etal. 2018; Thapa, Iakovleva, and Foss 2019). There is a growing interest in understanding the links between innovation and inclusion to address the challenges in sustainable development and inclusive forms of growth (Heeks, Foster, and Nugroho 2017; Lieu et al. 2023). More attention must be given to implementing these policies in different contexts (OECD 2015) and recognizing the multiple meanings and interpretations characterizing the inclusive policy landscape in high-income countries, as "particular conceptualizations will have particular implications" (Heeks, Foster, and Nugroho 2014: 178; see also Pansera and Owen 2018: 31). As Flink and Kaldewey (2018: 15) emphasize, "concepts are powerful not necessarily due to their analytical accuracy, but rather due to their symbolic function in STI policymaking". Owing to the increasing significance of inclusion internationally, accompanied by growing conceptual ambiguity related to goal setting and implementation, it is necessary to scrutinize its use and symbolic role in broader STI policy language in promoting a closer interaction between science and society.

Indeed, the need to revisit existing theorizing on inclusion is also pressing because of the existing impact agenda. By this, we refer to the broader shift in academia and the STI policy domain emphasizing the societal impact of STI and its evaluation (see e.g. McCowan 2018; Kidd, Chubb, and Forstenzer 2021). The agenda underscores the broad inclusion of diverse—often as many as possible (European Commission (EC) and Directorate-General for Research and Innovation (DG RTD) 2014: 4)—actors in science and innovation and their agency in contributing to the process (e.g. Sengupta 2016). This reflects the broadening scope of actors in policies pursuing transformative change (e.g. Schot and Steinmuller 2018). The changing and broadening meanings of inclusion are very much at the heart of this transition, yet recent developments might come with trade-offs and challenges that have not been sufficiently discussed in scientific or policy debates. In fact, the discussions so far have been surprisingly uncritical given the magnitude of change and problems identified in inclusive frameworks dealing, for example, with unequal and incomplete processes and outcomes, problems in policy framing and implementation, and the lack of competencies on several fronts (e.g. Fressoli et al. 2014; Planes-Satorra and Paunov 2017; Thapa, Iakovleva, and Foss 2019). As collaboration, participation and inclusion play central roles in solving complex societal challenges, reflected increasingly in the STI funding schemes, the development of inclusive frameworks should be accompanied by critical scrutiny of their short- and long-term impacts both in academia and society.

Serving the need for STI to have an increased societal impact—reflecting the broader normative shift (i.e. what innovation should be used for) in innovation policy (Schot and Steinmuller 2018)—different frameworks and evaluation tools have been created to promote and assess this impact that also relate to enhancing inclusion. In this paper, we focus on two of them to broaden the perspective on inclusion as an STI policy objective. In Europe, the Responsible Research and Innovation (RRI) framework has gained wider importance in recent years as part of the European Framework Programmes (see e.g. Owen, Macnaghten, and Stilgoe 2012; Burget, Bardone, and Pedaste 2017; Owen, von Schomberg, and Macnaghten 2021). RRI contains multiple dimensions, and although there is no consensus on its exact definition, RRI can be understood as the collaborative, anticipatory, and ethical conduct of research and STI processes (Burget, Bardone, and Pedaste 2017). After 2014, the framework consisted of six key dimensions—public engagement, gender, ethics, science education, governance, and open access (Owen, von Schomberg, and Macnaghten 2021)—and it was a cross-cutting principle of Horizon 2020. In the USA, the Broader Impacts Criterion (BIC) has become a standard policy tool for the National Science Foundation (NSF) to show lawmakers and the public that it is funding useful research (Bozeman and Youtie 2017; Woodson, Hoffmann, and Boutilier (2021). BIC is a criterion that NSF uses alongside the Intellectual Merit Criterion in reviewing the merit of proposals. While NSF (2024a) is intentionally not prescriptive about what broader impacts mean, projects are expected to contribute to achieving a wider societal impact in terms of societal benefit and "desired societal outcomes."

However, the importance and value of BIC and RRI have been questioned, for example, for being vague, and there have been difficulties in translating the general principles into specific guidelines (Davis and Laas 2014; NABI 2018). In 2022, to address some of the challenges, NSF established a new Directorate for Technology, Innovation and Partnerships (TIP) for the first time in over 30 years, emphasizing use-inspired and translational research and the broad inclusion of citizens in science and innovation (NSF 2024b). These issues are also emphasized in the ongoing Horizon Europe program (EC and DG RTD 2021: 5) in the extensive stakeholder co-design approach of the key strategic dimensions and strategic plans, as well as "ensuring vibrant cooperation between universities, scientific communities and industry, including small and medium enterprises, and citizens and their representatives throughout the programme.".

1.1 Research objectives, materials, and methods

In this paper, our goal is to examine the hypothesis that inclusion has more dimensions than currently captured in the literature dealing with inclusion as an STI policy objective. We argue that the broader conceptualization emphasizing the inclusion of societal actors in various STI processes and activities, for example, through processes of co-creation, is salient in the current policy frameworks of high-income countries (e.g. Lieu et al. 2023). By drawing on institutional theory regarding decoupling (e.g. Meyer and Rowan 1977), applied, for instance, to the research and development project context in the STI policy domain (Bertello et al. 2022; Jabbouri, Schneckenberg, and Truong 2022), we analyze selected policy frameworks in the USA and EU to shed light on the evolving landscape of inclusion.

Hence, our twofold objective is to study the conceptualization and operationalization of inclusion in contemporary STI policy research and practice. First, we ask how inclusion manifests as an STI policy objective in the broad STI policy literature, extending beyond the development studies interface. We answer this question by synthesizing the scattered STI policy literature in a conceptual framework reflecting the pluralizing meanings of inclusion in the broad STI policy domain. The framework builds on the theoretical notion of decoupling, which primarily manifests through the divergence between

policies focusing on marginalized communities and inclusive policymaking more generally, covering diverse societal actors. Schematic divisions between the goals of inclusive policies on a means-ends axis differentiating approaches framing inclusion as an end goal from approaches framing it as a means to other ends, and approaches to passive and active forms of agency differentiating, for instance, quota-based policies from policies emphasizing active agency in processes of knowledge co-production, provide analytical leverage for a nuanced analysis of inclusion.

Second, in the empirical section, we use the framework to illustrate the decoupling meanings of inclusion by exploring how inclusion manifests as an objective in selected policy documents primarily about the RRI and BIC frameworks. We also briefly touch on recent developments in the USA regarding NSF's new TIP directorate, as well as Horizon Europe in the EU for 2021–2027 as they bring forth interesting and partially converging aspects of the evolving STI policy landscapes on both continents. We answer the above question by analyzing the manifestations of decoupling in the data, which also come forth through the auxiliary lenses of goal setting and agency. By STI policy, we refer to broad national and supranational policy umbrellas promoting STI recently increasingly toward transformative change (e.g. Schot and Steinmuller 2018). In the individual frameworks, selected for empirical analysis, the emphases vary: whereas BIC focuses on research and its dissemination, RRI promotes fundamental changes in the processes of research and innovation (Davis and Laas 2014)—a direction that is also now accentuated in TIP in the USA.

The empirical analysis was done by coding selected policy documents and relevant publications using the NVivo program according to their different manifestations of inclusion as well as goal setting and considerations of agency. The aim was not to quantify the existence of different orientations but to scrutinize the meanings of inclusive policies and instruments in this regard in the context of high-income countries. The focus was on conducting a qualitative analysis and understanding the differences and similarities in approaches to inclusion between the EU and the USA, which we illustrate and discuss in depth using selected examples. The document analysis was based on the principles of theory-driven qualitative content analysis (e.g. Bengtsson 2016). Document analysis, as a qualitative research method, can be seen containing traits of both content analysis and thematic analysis (Bowen 2009). The document analysis followed the steps identified by Bowen (2009): "skimming (superficial examination), reading (thorough examination), and interpretation." Documents were first read superficially to determine their suitability for this study. They were then thoroughly examined and coded. Finally, interpretations could be made from the coded material.

The data consist of key policy and evaluation documents and publications related to the frameworks. The full list of analyzed documents is available in Appendix 1. The documents were extracted from essential websites, such as the NSF homepage and document library, and the Publications Office of the EU. Document selection was based on the relevance to the topic of this study with an emphasis on gathering the same number of relevant publications about both BIC and RRI. In addition, the time frame was kept as equal as possible, even though BIC was deployed much earlier (1997) than the official introduction of RRI, which became a central concept during the Horizon 2020 program launched in 2014 after gaining some visibility in the previous FP7 program. Some documents contained a disclosure statement indicating that they do not necessarily present the official views of these organizations, yet they were included if they described work related to these frameworks and were available through the host organizations.

2. Theoretical framework: Decoupling meanings of inclusion within the STI policy domain

Inclusion is a pivotal concept in contemporary STI policies promoting the societal impact of research and innovation (R&I). It has received quite extensive scrutiny from scholars in the STI policy field, especially in innovation studies (e.g. Chataway, Hanlin, and Kaplinsky 2014; Heeks, Foster, and Nugroho 2014; Schillo and Robinson 2017; Mortazavi et al. 2021). Yet its use has not been subjected to a thorough analytical investigation regarding the changing roles of inclusion in the current systemic and complex STI policy domain (e.g. Magro, Navarro, and Zabala-Iturriagagoitia 2014), especially in regard to the increasing emphasis on the societal impact of R&I that further accentuates the role of inclusion and participants' active agency in the impact agendas (e.g. Lieu et al. 2023).

Overall, the concept remains ambiguous and scattered in policy and research circles. This, we hypothesize, can be explained by the double meaning of inclusion. The Oxford Dictionary of English, MOT (2024) defines inclusion as either (1) "the action or state of including or of being included within a group or structure, or a person or thing that is included within a whole" or (2) "the practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized, such as those who have physical or mental disabilities and members of other minority groups." We argue that these two very different aspects of the definition are clearly present in science and innovation studies, policies, and practices, underlining the need to synthesize the scattered knowledge relating to these different approaches. On the one hand, inclusive policies are primarily associated with marginalized communities; on the other hand, they are increasingly referring to contexts that have very little to do with marginalization. This creates space for policy divergence, which we discuss at the end of this section through the theoretical lens of decoupling (e.g. Bromley and Powell 2012; Graafland and Smid 2019).

Many well-known works on inclusive innovation have taken the perspective of marginalized communities as their starting point (e.g. Foster and Heeks 2013; Heeks, Foster, and Nugroho 2014). Marginalized communities refer to those excluded from mainstream social, economic, educational, and/or cultural life, including (but not limited to) groups excluded due to race, religion, gender identity, sexual orientation, age, physical ability, language, and/or immigration status (e.g. Baah, Teitelman, and Riegel 2019). The main focus has been on the poor (Heeks, Foster, and Nugroho 2014; Pansera and Owen 2018). In their paper on inclusive innovation, Heeks et al. (2013, 2014) present a "ladder of inclusive innovation," identifying six levels of inclusion, with each one gradually deepening and/or broadening the perspective of the

previous step (Heeks, Foster, and Nugroho 2014: 177–178): "Level 1/Intention: an innovation is inclusive if the intention of that innovation is to address the needs or wants or problems of the excluded group; Level 2/Consumption: an innovation is inclusive if it is adopted and used by the excluded group; Level 3/Impact: an innovation is inclusive if it has a positive impact on the livelihoods of the excluded group; Level 4/Process: an innovation is inclusive if the excluded group is involved in the development of the innovation; Level 5/Structure: an innovation is inclusive if it is created within a structure that is itself inclusive; and Level 6/Post-Structure: an innovation is inclusive if it is created within a frame of knowledge and discourse that is itself inclusive."

In the present paper, we build on these well-known conceptualizations and we focus next on two aspects—goal setting and agency—that are present in their diverse explicit and implicit manifestation in contemporary STI policy debates and agendas. At the end of the theoretical section, we synthesize these dimensions in a conceptual framework building on the notion of decoupling.

2.1 Goal setting: inclusion as an end goal in itself vs. a means to impact

In this section, we differentiate between approaches framing inclusion as an end goal in itself and approaches framing it as a means to other ends. For the purposes of our analysis, we are primarily interested in the different conceptualizations of inclusion and hence its framings as an STI policy goal on the means–ends axis. According to Heeks, Foster and Nugroho (2014: 177), the main contrast in the inclusive innovation debate "is between those who think exclusion can be addressed simply in terms of innovation outputs vs. those who think marginalized groups must be included in innovation processes." In addition, Chataway, Hanlin, and Kaplinsky (2014) discuss the difference between product and process innovation in the context of the inclusive innovation agenda and highlight the need for a holistic understanding of the innovation cycle and its various components that must each be considered separately on a path to more inclusive innovation.

Aligning with the ladder of inclusive innovation (Heeks, Foster, and Nugroho 2014), Fressoli et al. (2014: 277; see also Schillo and Robinson 2017) note that inclusive innovation can advance inclusion either through process-, outcome-, or structure-based means, for example, by fostering participation in the design of technology (process), providing services for marginalized groups (outcome), or enabling broad and diverse participation in the shaping and priority-setting of STI policies and institutions (structure). In these discussions, the outcome-based view generally refers to targeting products or services to marginalized communities or covering certain minority groups as objects of policies, for instance, through quota-based approaches to inclusion (e.g. Hughes, Paxton, and Krook 2017). In our reading, these approaches represent policies framing inclusion as an end goal in itself rather than a means to other ends.

When considering the goals of the impact agenda, the process-based view has recently been accentuated as societal impact has been increasingly conceptualized in relation to interaction, referring to the alignment of interests and mutually beneficial learning processes between researchers and stakeholders for the benefit of societal development (e.g. Kalliomäki, Ruoppila, and Airaksinen 2021). With an emphasis on interactions with various stakeholders, concepts such as impact pathways (e.g. Muhonen, Benneworth, and Olmos-Peñuela 2020) have been introduced recently to direct attention to the process-based view of impact creation instead of a linear view emphasizing impact as a policy outcome. This understanding of impact through interaction and reciprocity is also an important premise for our analysis of inclusion as an STI policy objective. In this context, it refers to impact creation processes and their broad inclusiveness in terms of stakeholder engagement (e.g. Owen, Macnaghten, and Stilgoe 2012; OECD 2015; Lieu et al. 2023). However, this might have very little to do with marginalized communities and be accompanied by a blurring of boundaries between policies promoting inclusion and participation (cf. Quick and Feldman 2011). From this perspective, inclusion appears to be a tool of the broader impact agenda, supporting the goal to better connect R&I to versatile societal problems and needs.

2.2 Agency: inclusion of active subjects vs. passive objects

Another dimension of our analytical framework deals with agency, which we argue has been thus far neglected in discussions on inclusion as an STI policy objective (see Sengupta 2016). In particular, policies focusing mainly on inclusion as an outcome have often treated those to be included as rather passive objects of inclusion, for instance, when certain recruitment quotas have been met for marginalized groups. Over the past 20 years, these policies have gained in popularity to help marginalized groups (Hughes, Paxton, and Krook 2017). For example, gender balance among teams and leadership was an evaluated indicator in Horizon 2020 (EC 2019).

The viewpoint of agency directs attention to the active role of those who are included. The previously discussed process-based view emphasizes active agency in contributing to R&I processes, which is needed to leverage the impact of inclusive processes (e.g. Owen, Macnaghten, and Stilgoe 2012) and build impact pathways (Muhonen, Benneworth, and Olmos-Peñuela 2020). Furthermore, the active agency of included actors and groups is necessary in contributing to agenda setting in STI policies (Fressoli et al. 2014). Hence, the agency perspective, especially in the context of marginalized communities, necessitates paying attention to broader questions of governance (e.g. Schillo and Robinson 2017) as inclusion does not automatically guarantee equal participation, possibility to influence or respect. Therefore, it should not be confused with quota-based inclusion policies, which do not emphasize agency and possibilities of participation (see Sengupta 2016: 13). Sengupta (2016) draws attention to the interface between inclusion and governance as participatory democratic governance mechanisms are needed to enable active participation: "It is important to understand inclusion not merely as presence but as active participation of maximum members of marginalized communities, classes and groups."

Indeed, one important yet fuzzy divergence from the perspective of societal agency is the division between inclusion and participation, which Quick and Feldman (2011: 272) define as follows: "Participation practices entail efforts to increase public input oriented primarily to the content of programs and policies. Inclusion practices entail continuously creating a community involved in coproducing processes, policies, and programs for defining and addressing public

issues." Hence, while participation is oriented toward increasing inputs, inclusion in their interpretation, arising from a planning policy context, forms a broader frame for interaction, connecting people and issues over time. Importantly, their definition also reaches beyond marginalization, emphasizing "the connection-building features of inclusion" (Quick and Feldman 2011: 282) that contribute to broader inclusive community building than typical input-based forms of participation, leading to the joint and continuous framing of public issues. Mere participation in input-giving terms might trigger a sense of exclusion due to the lack of connections to broader structures and processes and actors involved (see Quick and Feldman 2011: 282), which is also why Heeks, Foster, and Nugroho (2014) emphasize the need for structural change.

According to Pansera and Owen (2018), inclusive innovation can be approached either through a market-based or grassroots framing of an inclusive innovation agenda as both underscore the inclusion of marginalized groups (primarily the poor) as a key principle. While the market-based approach emphasizes the inclusion of actors in, for instance, processes of co-creation and, in general, the market economy and generation of growth and profit, the grassroots approach highlights community empowerment, social justice, and grassroots ingenuity as sources of societal transformation. Besides emphasizing the inclusion of marginalized communities, both approaches direct attention to the active agency and participation of those included, once again from different, although increasingly intertwined, perspectives: while the market-based, centralized view emphasizes direct participation in innovation activities and the market economy, the grassroots view targets decentralized, community-based innovation, broadening the horizon toward societal participation and agency as sources of wellbeing and sustainability (see Pansera and Owen 2018; also Fressoli et al. 2014; Sengupta 2016).

2.3 Synthesis and conceptual framework

Overall, in the broad and multidimensional STI policy literature, which is increasingly reflecting the broad and systemic scope of the STI policy framing (Schot and Steinmuller 2018), the meanings of inclusion are highly context dependent. Inclusivity refers to very different questions regarding, among others, who benefits, whose problems are being solved, who has access, and who gets to participate. Inclusion has also been approached both implicitly and explicitly in broader debates touching on the impact agenda, and it is strongly present in contemporary STI policies, as a means to impact and as a policy goal in itself.

Figure 1 presents a synthesis of the broad STI policy literature, approaching inclusion from multiple angles, outlining the schematic division between process- and outcome-oriented approaches to inclusion (horizontal axis) and between active and passive approaches to agency in relation to achieving a policy impact (vertical axis). The horizontal axis thus differentiates means and ends, distinguishing between inclusive processes and broader attempts to foster institutional change, and inclusion as a policy outcome. The vertical axis separates approaches requiring the actors' active input to realize the targeted goal from approaches that mainly statistically cover different societal actors as objects

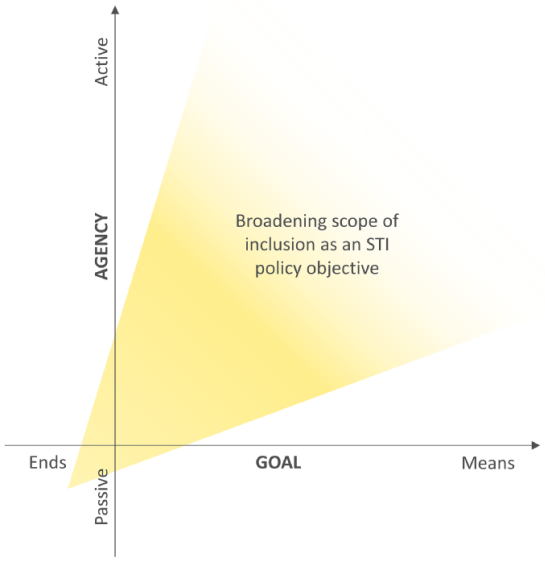

Figure 1. Conceptual synthesis of the broadening scope of inclusion as an STI policy objective.

of inclusion. In the figure, increasingly emphasized instrumental approaches to inclusion highlight the active agency of actors participating to impact creation processes. These processes include co-creation and user-led approaches to R&I in which impact necessitates the active participation and agency of those involved.

In addition to synthesizing the theoretical literature, Fig. 2 presents a conceptual framework and a qualitative hypothesis for the next section, focusing on analyzing and comparing the RRI and BIC frameworks in terms of their approaches to inclusion. Our literature review leads us to hypothesize that the broader meanings of inclusion are partially decoupling from a common understanding of inclusion linked to disadvantaged groups. We call this a decoupling dilemma due to the diverse possibilities and challenges built into current developments and the potential choices in between them. Several forms of decoupling can be identified in the literature: means-ends decoupling (e.g. Bromley and Powell 2012; Bertello et al. 2022), reflected in the goal setting of inclusive policies; policy-practice decoupling (e.g. Graafland and Smid 2019) of (promising) policy framings, poor implementation, and/or unclear impacts (e.g. Fressoli et al. 2014; Thapa, Iakovleva, and Foss 2019); and decoupling as policy divergence (Graafland and Smid 2019), manifested in diverging paths between marginalization and a more general approach to co-production.

In the forthcoming analysis and discussion sections of the paper, we primarily focus on the latter—namely, the identified divergence of inclusive policies within the broad STI policy domain. Whereas complete decoupling can be defined as "a condition of full divergence among policies, programs and impacts" (Graafland and Smid 2019: 231), a more complex picture emerges from our analysis that also reflects the conditions of pluralization and broadening and overlapping developments. Therefore, while building primarily on policy divergence, we also utilize the lenses of goal setting and agency

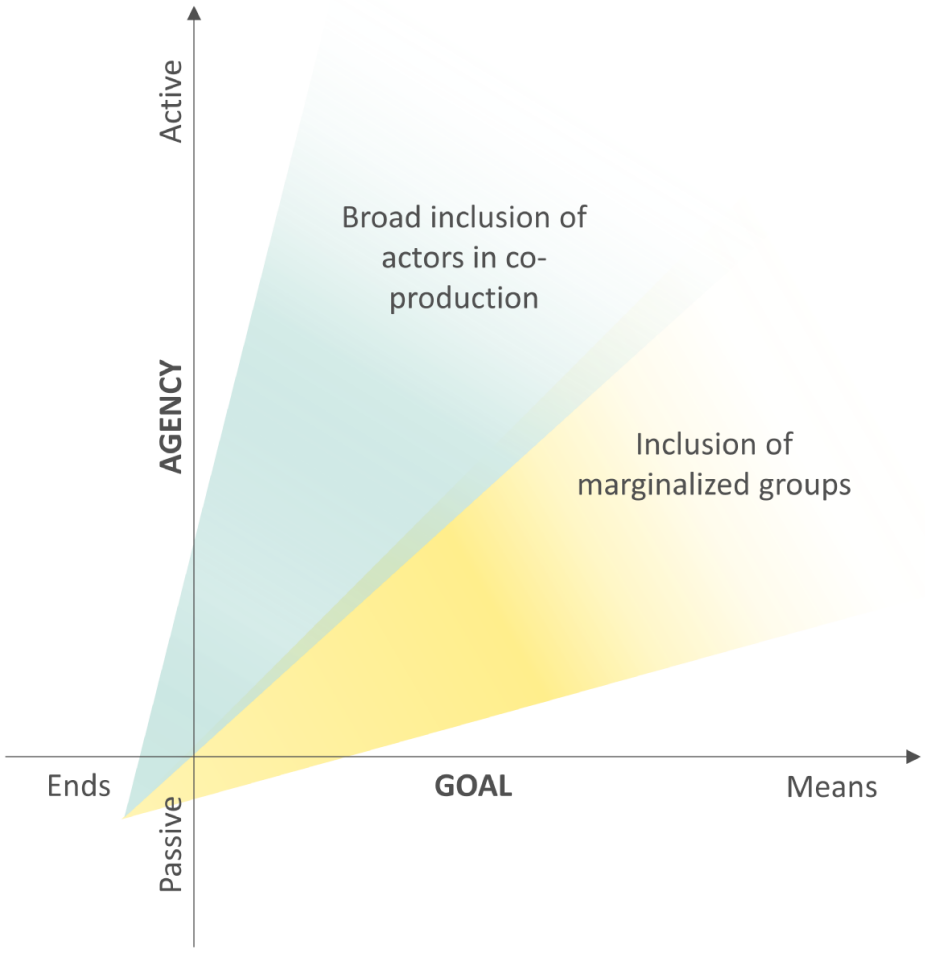

Figure 2. Conceptual framework for decoupling meanings of inclusion as an STI policy objective.

to provide additional analytical leverage to the analysis of inclusion.

3. Insights from policy frameworks promoting inclusion in the EU and the USA

According to Davis and Laas (2014), there are similarities between RRI and BIC regarding the search for science and innovation that serve society and the promotion of inclusive R&I processes with various societal stakeholders. However, inclusion as a policy objective is also approached differently in the two frameworks.

RRI emphasizes collaborative processes, partnerships, and interactive R&I throughout the process as well as ethics and R&I processes that are responsible, anticipatory, and reflexive (e.g. Owen, von Schomberg, and Macnaghten 2021). Social inclusiveness in Europe is guided by, for example, Article 21 of the Charter of Fundamental Rights of the European Union that connects inclusion to overall basic rights that must be assured in all policy domains. Inclusion is embedded in RRI in diverse ways: through the encouragement of quadruple helix collaboration and emphases on open science, gender equality, citizen science (e.g. B3; B4; B9), and social inclusion (e.g. B5; B9; B11). The Horizon Europe strategic plan for the years 2021–2024 (B11, 79) discusses multiple forms of inclusion, such as social inclusion, inclusive growth, inclusive citizenship, inclusive "mobility systems for people and goods" and inclusive food systems.

BIC is embedded in the operations of NSF through section 526 of the America COMPETES Reauthorization Act, where the criterion is defined. BIC aims at "the achievement of specific, desired societal outcomes…through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to the project" (A8, II–11). These processes should bring value to the society through direct benefits, and applicants may take diverse pathways to confront various societal and scientific challenges. Within BIC, broadening the participation of women, underrepresented minorities, and persons with disabilities in science, technology, engineering, and mathematics (STEM) improving science education and developing a diverse STEM workforce represents the diverse dimensions of inclusion (e.g. A1; A8, II–11).

In the following sub-sections of the paper, we present the results, demonstrating the decoupling meanings of inclusion as an STI policy objective in the EU and the USA. The analysis combines existing research on the frameworks and an empirical analysis of the documents, which are referenced with the codes listed in Appendix 1.

3.1 Objectives concerning the inclusion of marginalized groups

Broadening the participation of underrepresented groups in R&I and especially STEM fields is a strong focus of NSF, and it has been reinforced by legislative directions, of which the CHIPS and Science Act is a recent example. In the Horizon 2020 program, instead, gender equality was a cross-cutting issue alongside RRI. For illustrative purposes, we examine these policies against the dimensions of the theoretical framework, shedding light on the various nuances of agency and goal setting in the framing of policies for marginalized groups.

Regarding BIC, broadening participation can mean, for example, the involvement, recruitment, and mentoring of underrepresented individuals and groups in STI education and research (e.g. A1; A5; A7). According to NSF's strategic plan for 2006–2011 (cited by A2, 11), "Broadly Inclusive: Seeking and accommodating contributions from all sources while reaching out especially to groups that have been underrepresented" is a core value of NSF and in achieving this, BIC has had a central role. It highlights the potential contributions of underrepresented groups. Although this is valuable in itself, it gives little weight to the agency of these groups, and inclusion appears more as participation aimed at increasing inputs (cf. Quick and Feldman 2011). The latest NSF strategic plan for 2022–2026 (A7) takes a market-based approach to increasing wellbeing in society and advancing national goals (cf. Pansera and Owen 2018), highlighting the active agency and empowerment of marginalized individuals so they can participate in the STEM workforce: "NSF has long invested in efforts to broaden participation in STEM, it is more important now than ever to underscore that the inclusion of all people in STEM is vital to the nation's health, security and global leadership" (A7, 3). Here, inclusion serves as a strategic tool for reaching these national goals alongside the aspiration for societal equity.

BIC, however, has been under discussion due to its ambiguities (e.g. NABI 2018). Determining broader impacts is the responsibility of the applicants within the given BIC guidelines. It is possible to satisfy the criterion without addressing the specific issue of broadening the participation of underrepresented individuals. Previously, BIC had five distinct categories among which the broadening participation of underrepresented groups was one, but it was modified in 2013, following a review process, to a more open-ended description (A3). Yet the challenge of achieving and reporting inclusion and broader impacts for underrepresented groups has been confirmed to persist (Woodson and Boutilier 2023). This indicates the need to assess the objectives related to inclusion and the depth of participation, where the assessment of agency might contribute to a more comprehensive understanding. Some documents discuss longitudinal and qualitative metrics not only for recruitment but also, for example, for the success and retention of underrepresented groups (e.g. women) in STEM education and participant satisfaction, which may aid in measuring the outcomes of changes through inclusive practices (e.g. A2; A5).

In RRI, gender equality "has two dimensions: promoting the equal participation of men and women in research activities (the human capital dimension); and the inclusion and integration of gender perspectives in R&I content" (B5, 26). The viewpoint on integrating gender equality and perspectives across all activities suggests inclusion as a means to increase impact, whereas the explicit objective of gender-equal participation directs attention to inclusion as an end goal and a tool for increasing research and the STI talent pool (B9). The integration of gender and sex dimensions in R&I may result in broader impacts through inclusion in terms of, for instance, the gender-specific relevance of outcomes, contributing to heightened scientific quality and the improved adoption and significance of new innovations (B5). Considering the agency of women in STI endeavors might open up new possibilities to assess the different dimensions of inclusion beyond the mere statistical coverage of women in diverse STI policy domains.

Considering agency and outcomes, a new approach to BIC was proposed in 2021 in the context of social, behavioral, and economic (SBE) sciences, where project applicants are encouraged to consider "Who Can the Scientific Opportunities and Communicative Products Empower?" and "Whose Quality of Life Can the Empowerment Improve?" (A6, 3). Regarding the first question, applicants are encouraged to consider "who is empowered." The second question focuses on "who benefits from that empowerment" (A6, 3). This allows applicants to consider if those being included or targeted are the ones being empowered or whether their input or presence in scientific endeavors empowers somebody else through the results, as well as the impact of their actions on various groups. Empowering people suggests an emphasis on active agency and is also a central theme in the current NSF strategic plan as "Empower STEM talent to fully participate in science and engineering" is the first of four strategic goals (A7, 28).

The institutional approach to inclusion, reflecting broader changes in social structures (Heeks, Foster, and Nugroho 2014: 179), seems to be gaining increasing attention as several publications related to RRI and BIC have highlighted institutional changes and capacity-building for institutions as central for systemic and continual change. For BIC, discussions on institutional change and impact (A2) are increasingly emphasized in newer documents (A5; A7). For example, one document discusses BIC in the context of university culture and as an important component of STEM enterprises rather than as an add-on activity (A4, 5): "The America COMPETES Reauthorization Act of 2010 rearmed the importance of the broader impacts criterion and encouraged institutions of higher education and nonprofit organizations to take an institutional approach towards achieving the societal benefits championed via broader impacts." (A4: 1). The goal of programs such as NSF INCLUDES (Inclusion Across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) is to foster "institutional transformation within research and educational organizations so the nation can capitalize on the talents and ideas of all segments of the population" (A7, 30; see also A5).

On the one hand, this can be seen as reflecting the instrumental, market-based view on inclusion, harnessing all segments of the population for the benefit of national goals

(cf. Pansera and Owen 2018); on the other hand, a broader approach is visible in attempts to promote inclusion as a system-level goal. NSF INCLUDES highlights that "developing intentional collaboration and networks that are committed to common agendas and systemic approaches to solving specific STEM-inclusion challenges at a national scale" is pivotal (A5, 5). Systemic change is also mentioned in the latest NSF strategy to get the "missing millions" to join STEM fields "by catalyzing systemic changes in organizations, such as the development of more inclusive and welcoming research environments" (A7, 19).

Concerning RRI, institutional changes have been especially central in Science with and for Society (SwafS), part 16 of the Work Programme (B9), in which the number of institutional changes for RRI is a key performance indicator. Institutional change is defined as "a change (with meaningful impact) in terms of how a beneficiary governs or structures itself in relation to any of the RRI dimensions [..] and lasts beyond the lifetime of project funding" (B8, 6). These institutional changes were first piloted with Gender Equality Plans (GEPs) in the previous FP7 work program and were further employed by both Horizon programs, again suggesting more structure-based emphasis in policy framing. Sets of indicators of and for RRI and its six key dimensions, including gender equality, were developed within the MoRRI project (B7; EC et al. 2018) and by an expert group in 2015 (B5). The expert group proposed that while indicators and statistics, such as She-Figures, provide a relevant overview of gender balance in participation, "they do not seem to provide insight into the cultural issues associated with gender inequality [..] nor do they offer much insight into institutional arrangements and mechanisms for promoting gender balance" (B5, 26). They concluded "that the main focus should be on processes of institutional change to see whether these general ambitions are translated into concrete forms of action" (B5, 6).

The expert group also proposed indicators for evaluating inclusion and social justice in RRI. For example, they proposed measuring if applicants consider the impacts of their research and possible outcomes on social justice (Lieu et al. 2023), which could include, for example, "poverty prevention, access to education, labour market inclusion, social cohesion and non-discrimination, health and intergenerational justice" (B5, 39). However, this dimension is not included in the MoRRI indicators, as it followed the structure where RRI is understood through the six keys.

3.2 Objectives concerning the broad inclusion of actors in co-production

Within NSF and Horizon 2020, community consultation has been used as a tool to shape and develop policy goals (e.g. A9; B6, 6; B10, 47). This can be aimed primarily at the research community, or stakeholders outside academia, or it can be open to the wider public, including citizens. Consultation is seen as a valuable tool for participatory agenda setting, and today's digital tools allow for reaching a large number of participants to reflect the opinions and values of the public. These consultations can be seen as resembling input-based participation (Quick and Feldman 2011), which is also often connected to the broader frames of citizen and stakeholder engagement. In light of our framework, consultations assume the participants' active agency but narrow participation to active individuals and groups. Inclusion in consultation is often considered the end goal in itself, where consultation input serves as a tool to enable stakeholders to take part in formulating policies, sometimes with no further power to influence the process (cf. Quick and Feldman 2011).

Co-creation and similar cooperation approaches with stakeholders and citizens are not new, but they have been gaining momentum in the last decade. For example, the SwafS program built an extensive knowledge base on such activities (Robinson, Simone, and Mazzonetto 2021: B8; B9). The importance of stakeholder and citizen engagement and working together is highlighted in several documents. B4 (1) calls for "all stakeholders including civil society" to be "responsive to each other and take shared responsibility for the processes and outcomes of research and innovation," explained as working together, for instance, in setting the research agenda, conducting the research, and adhering to open access principles. It is also highlighted that "the grand societal challenges that lie before us will have a far better chance of being tackled if all societal actors are fully engaged in the co-construction of innovative solutions, products and services" (B3, 1). Actors are thus described as active agents throughout the processes in which inclusion acts as means to generate impact. In the current Horizon Europe program, this view is further accentuated with a co-design approach to the strategic plan, citizen science, user-led R&I and other forms of public engagement, missions and open innovation 2.0 and an increased emphasis on open science, which has become part of the evaluation criteria of research proposals (B11; Owen, von Schomberg, and Macnaghten 2021; Robinson, Simone, and Mazzonetto 2021). For example, it is noted that in order to foster "ambitious investments in new knowledge and its diffusion into relevant industries and society as a whole. [..] in a responsible and inclusive way, we will need even more collaboration – across borders and across disciplines and actors" (B11, 4). The latest NSF strategic plan refers to this phenomenon as "growth in the co-production of knowledge, a participatory, solution-oriented approach to research that is often interdisciplinary. This concept is characterized by meaningful interaction between producers and users of knowledge" (A7, 19).

Overall, the relevance of citizen, user, beneficiary, and stakeholder inputs is evidently on the rise in the shaping of STI policies and formulation of research agendas. NSF's new TIP directorate aims at "catalyzing a paradigm expansion" (A9), where societal needs inform R&I agendas and the scope expands from a traditional supply push to activities informed by the market demand (A9). More opportunities are being created to bring inventions from the lab to society, and vice versa, to yield greater research impacts. The goal is to involve societal actors in shaping and conducting research and capturing the benefits (A9). Furthermore, within TIP programs, investments are being made to foster "inclusive innovation ecosystems," for example, in the Enabling Partnerships to Increase Innovation Capacity (EPIIC) program, where partners are "working together in support of use-inspired research; the translation of such research to practise or commercial application; and the development of a skilled workforce" (NSF 2024c).

Summing up the key similarities, new approaches in TIP in terms of an emphasis on active agency in inclusive frameworks

Table 1. Key differences between the studied frameworks in their approaches to inclusion.

Key differences regarding inclusion of marginalized groups	
RRI is a comprehensive approach adopted in H2020 processes for responsible conduct of R&I. "RRI cuts across Horizon 2020, engaging society, integrating the gender and ethical dimensions, ensuring access to research outcomes, and encouraging formal and informal science education." (B9, 8) "[…] gender equality is promoted in all parts of Horizon 2020 including gender balance at all levels of personnel involved in projects." (B6, 14) There are prerequisites for projects, such as being as gender balanced a possible. Multifaceted themes of societal engagement are present from the outset to the end of the process and beyond.	BIC is a criterion NSF uses to evaluate the broader impacts and societal benefits of research proposals. "NSF strongly promotes and expects that all individuals, including those from groups that are underrepresented and/or underserved in STEM are treated equitably and inclusively in the Foundation's proposal and award process." (A8, viii) Benefit and impact can arise from any phase of the project e.g. process, outcomes and/or deliverables. The fulfilment of each impact example is not required, yet there is a clear focus on increasing the participation of underrepresented minorities, as well as diversifying STEM through inclusion.
Key differences in broad inclusion of actors in knowledge co-production	
Being open and operating in inclusive multi-stakeholder collaborations, as well as answering to society's expectations and values, is at the heart of RRI. "RRI is an ambitious challenge for the creation of research and innovation policy driven by the needs of society and engaging all societal actors via inclusive participatory approaches." (B3, 1) "Citizens and businesses expect the Union to lead on the transformation pathways in a transparent, effective and inclusive way." (B11, 3)	Alongside the traditional view on inclusion of marginalized groups and individuals, new forms of inclusion have emerged and suggest new possible ways of satisfying the BIC. "Broadly Inclusive: Seeking and accommodating contributions from all sources while reaching out especially to groups that have been underrepresented; serving scientists, engineers, educators, students and the public across the nation; and exploring every opportunity for partnerships, both nationally and internationally." (cited by A2, 11) "..what we'd like to do more of is bring users, beneficiaries, consumers to the table to help shape the research agenda" (A9, 14:55)

and the co-production of knowledge for broader impacts have many similarities with the goals of Horizon 2020 and Horizon Europe. Furthermore, the increasing emphasis on spatial equity and geographical inclusion through regional innovation policy in many ways resembles the innovation policy emphasis in the EU. Both sets of documents, especially those concerning RRI, present multiple meanings of inclusion as an STI policy objective, such as the involvement of diverse stakeholders in R&I processes (A9; B1: 57), equal access to science education pathways (B8: 36; A9), engaging with citizens "irrespective of their age, gender, ethnicity and socio-economic background" and broadening participation (B9: 36; A1; A2; A8) or responsive and open quadruple helix collaboration (B8, 19; B9, 35–36), and therefore point toward the need for their analytical scrutiny in terms of the possibilities and challenges related to broadening policy meanings. We undertake this task next and attempt to draw lessons for both the theory and practice of inclusive STI policymaking.

4. Discussion

Despite certain similarities identified between the EU and the USA regarding, for instance, increasing emphases on knowledge co-production and geographical inclusivity, the studied frameworks also have different emphases regarding the objective of inclusion (Table 1). The findings thus present different approaches to the conceptualization and operationalization of inclusion as an STI policy objective, with RRI taking a more process-oriented and BIC an outcome-oriented approach to inclusion. Yet recent changes accompanying the introduction of NSF's new TIP directorate indicate that the scope of inclusive policy rhetoric is also broadening in the USA. The differences matter, as an emphasis in one area of inclusion may create blind spots and exclusion in another (Koch 2020). This was recently noted in an expert report in Europe emphasizing the need to better recognize the diverse European population in mission-driven R&I (Mazzucato 2019: 7).

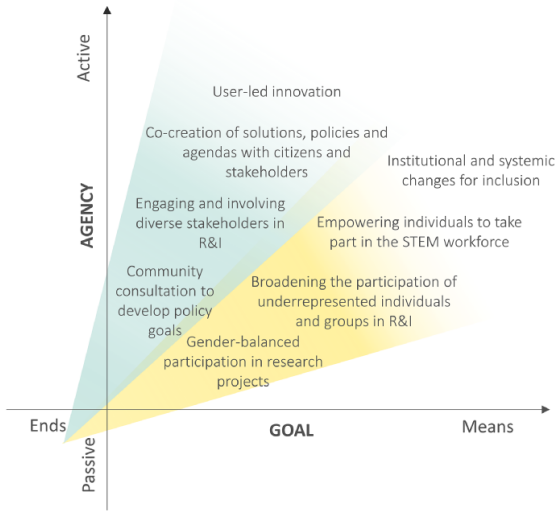

Figure 3. Examples of decoupling meanings of inclusion.

The analysis demonstrates that in the selected frameworks in the EU and the USA, inclusion refers to the inclusion of both those who might otherwise be excluded or marginalized and basically any relevant actors to the research, innovation, and diffusion processes—a dual meaning also recognized in the Oxford Dictionary (2024) definition. This decoupling—primarily discussed here as policy divergence (Graafland and Smid 2019)—becomes visible in the emphases of the analyzed frameworks and examples drawn from the data (Fig. 3).

In a complex, globalized world order, decoupling is also expected (cf. Graafland and Smid 2019: 232). On the one hand, inclusion, as a conceptual metaphor reflecting broader societal values, can be a powerful policy concept in promoting the societal impact of R&I while addressing the

needs of marginalized groups and communities through its "connection-building features" (Quick and Feldman 2011: 282). Ideally, with increased attention to the governance of inclusive policymaking (cf. Schillo and Robinson 2017) and concerted effort (George et al. 2019; Robinson, Simone, and Mazzonetto 2021), the co-existence of both recognized paths improves the inclusivity of STI activities in a comprehensive manner, building inclusive frames of knowledge for STI policy at a systemic level (cf. Heeks, Foster, and Nugroho 2014; Lieu et al. 2023). There is no simple, right or wrong approach here (Heeks, Foster, and Nugroho 2014: 178), yet one must understand what types of goals are pursued as they carry different implications, for instance, for evaluation. For example, the MoRRI project, which developed indicators for and of RRI to be used, for example, in the SwafS program, in its summary report, differentiates between inclusion and pluralization (EC et al. 2018). Enhanced inclusiveness (as opposed to e.g. input-based participation) can, at best, lead to greater satisfaction and the increased legitimacy of STI policymaking (cf. Quick and Feldman 2011). Broader approaches to inclusion are increasingly enabling the active agency of participants, empowering them and challenging persistent power dynamics, as reflected in the upper steps of the inclusion ladder regarding system-level change or philosophical and discursive change in the way society as a whole considers inclusion (Heeks, Foster, and Nugroho 2014). Increasingly visible also in policies pursuing transformative change (e.g. Schot and Steinmuller 2018), endeavors such as use-inspired research and co-creation appear to present opportunities to create an impact and address the needs of society in addition to economic growth (Robinson, Simone and Mazzonetto 2021), including people, for example, with low socioeconomic status.

However, increasing legitimacy pressures can result in "ceremonial conformity" and different forms of decoupling (Meyer and Rowan 1977: 341; Graafland and Smid 2019), although the symbolic adoption of inclusion might be restrained by a growing emphasis on its evaluation (Jabbouri, Schneckenberg, and Truong 2022). Symbolic function (Flink and Kaldewey 2018) can also come with trade-offs, as rapidly increasing policy rhetoric regarding inclusion, partially approached as a societal mandate (cf. Bertello et al. 2022), can paradoxically contribute to the discursive exclusion of alternative policy framings (cf. Pansera and Owen 2018, 32). Moreover, the costs and benefits of citizen science are increasingly being debated due to the unclear beneficiaries (Robinson, Simone, and Mazzonetto 2021: 213) and impacts on science and society (B9, 40–41). Furthermore, costs related to inclusion might conflict with efficiency demands (cf. Graafland and Smid 2019: 232; Bertello et al. 2022), and means-ends decoupling diverts resources from core goals (Bromley and Powell 2012).

5. Conclusions and directions for future research

By examining the conceptualization and operationalization of inclusion as an STI policy objective in high-income countries, the present paper contributes to the STI policy literature by shedding light on the emergent decoupling dilemma that has been neglected in literature discussing inclusion from diverse yet disconnected perspectives. Combining the literature on inclusive innovation and broader STI policy studies, which are increasingly discussing the societal impact of R&I, enabled us to tap into a broader perspective on inclusion that is decoupling from marginalization (cf. Quick and Feldman 2011). In both recognized meanings of inclusive STI policies—the inclusion of marginalized groups and the broad inclusion of actors in co-production—the analysis also unveils an increasing emphasis on active agency and the instrumental value of inclusion in contemporary STI policy. In addition to inclusion being instrumentalized to serve economic interests (cf. Pansera and Owen 2018), the analysis sheds light on the instrumental role of inclusion in the impact agenda.

Future research must account for the growing complexity and ambiguity of policy language regarding inclusion. Our conceptual framework can be used and developed further as an analytical tool to structure and stimulate research, policy, and practice debates in the broad STI policy field related, for instance, to the need to consider agency in inclusive policy frameworks that increasingly emphasize the empowerment of those included. In practice, the recognized dimensions overlap and are more fluid in nature, yet for analytical purposes, it is useful to make the distinction. Differentiating between means and ends is useful especially in light of the STI policies' emphasis on the societal impact of R&I that has recently promoted the process-based view on inclusion (e.g. Owen, Macnaghten, and Stilgoe 2012), manifested, for instance, in processes of co-creation, perhaps adding to the conceptual ambiguity. In addition, a more nuanced analysis of the diverse forms of decoupling is still needed (e.g. Bromley and Powell 2012; Jabbouri, Schneckenberg, and Truong 2022) within STI policy domain as well, which is faced with novel questions and demands for legitimacy (Flink and Kaldewey 2018) arising from the decoupling meanings and intertwining of policy goals. Increasingly detached from marginalization, the broadening and, at times, vague use of inclusion can lead to the blurring of policies and original goals focused on improving the conditions and agency of marginalized groups. If inclusion is increasingly appearing everywhere in the STI policy rhetoric, it might end up nowhere in practice.

In this paper, we were only able to scratch the surface in comparing EU and US policy frameworks regarding their wider policy contexts, cultural realities, and legislative differences. In addition, while NSF, through BIC, supports research projects, the relevant EU directorate supports projects in R&I. Reflecting upon recent developments in the new TIP directorate enabled us to broaden the scope of analysis concerning the USA as well, but future research should dive deeper into the different emphases. Differences also remain a topic for future research offering a deeper comparative examination of discursive meanings related to inclusion that are visible in the changing policy rhetoric reflecting an increasing emphasis on active agency, and extending beyond the empirical settings of the examined high-income countries and frameworks. Discourse analysis could be used to deepen such an analysis.

Finally, besides the growing interest in understanding the links between innovation and inclusion (Heeks, Foster, and Nugroho 2017), this paper directs attention to the link between inclusion and impact. This link seems to be at the heart of contemporary policy language promoting responsiveness and knowledge co-production also for improved legitimacy, dubbed as a "paradigm expansion" in NSF's new TIP directorate emphasizing the engagement of users and

beneficiaries, multi-sector teams, and societal problem-driven research (A9). Inclusion and impact have not been analytically discussed in relation to each other regarding the broadening meanings of inclusion in contemporary STI policy. This paper takes a step in this direction, but there is a need to continue on this integrative conceptual and empirical avenue in future work. Furthermore, although the inclusive innovation research community certainly still has work to do at the development studies interface (Heeks, Foster, and Nugroho 2014: 183), STI policy researchers should pay critical attention to other disciplinary connections and pathways emerging in the field of inclusive R&I due to the blurring of policy goals and related challenges to democratic legitimacy and sustainability.

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Data availability statement

The data underlying this article are listed in Appendix 1.

References

Baah, F. O., Teitelman, A. M., and Riegel, B. (2019) 'Marginalization: Conceptualizing Patient Vulnerabilities in the Framework of Social Determinants of health—An Integrative Review', *Nursing Inquiry*, 26: e12268.

Bengtsson, M. (2016) 'How to Plan and Perform a Qualitative Study Using Content Analysis', *NursingPlus Open*, 2: 8–14.

Bertello, A. et al. (2022) 'Shedding Lights on Organizational Decoupling in Publicly Funded R&D Consortia: An Institutional Perspective on Open Innovation', *Technological Forecasting and Social Change*, 176: 121433.

Bowen, G. A. (2009) 'Document Analysis as a Qualitative Research Method', *Qualitative Research Journal*, 9: 27–40.

Bozeman, B. and Youtie, J. (2017) 'Socio-economic Impacts and Public Value of Government-funded Research: Lessons from Four US National Science Foundation Initiatives', *Research Policy*, 46: 1387–98.

Bromley, P. and Powell, W. W. (2012) 'From Smoke and Mirrors to Walking the Talk: Decoupling in the Contemporary World', *The Academy of Management Annals*, 6: 483–530.

Burget, M., Bardone, E., and Pedaste, M. (2017) 'Definitions and Conceptual Dimensions of Responsible Research and Innovation: A Literature Review', *Science and Engineering Ethics*, 23: 1–19.

Chataway, J., Hanlin, R., and Kaplinsky, R. (2014) 'Inclusive Innovation: An Architecture for Policy Development', *Innovation and Development*, 4: 33–54.

Davis, M., and Laas, K. (2014) '"Broader Impacts" or "Responsible Research and Innovation"? A Comparison of Two Criteria for Funding Research in Science and Engineering', *Science and Engineering Ethics*, 20: 963–83.

EC and Directorate-General for Research and Innovation (DG RTD (2014) 'Responsible Research and Innovation: Europe's Ability to Respond to Societal Challenges', Publications Office. https://op.europa.eu/s/yX8w, accessed 20 Feb. 2024.

EC and Directorate-General for Research and Innovation (DG RTD) (2021) 'Horizon Europe – Strategic Plan 2021-2024', Publications Office of the European Union. https://op.europa.eu/s/zhdT, accessed 12 Feb. 2024.

EC DG RTD, Stilgoe, J., Peter, V., Jäger, A., et al. (2018) 'Monitoring the Evolution and Benefits of Responsible Research and Innovation – Summarising Insights from the MoRRI Project', Peter, V. and Maier, F. (eds.), Publications Office. https://op.europa.eu/s/zhdV, accessed 12. Feb. 2024.

EC (European Commission) (2019) 'FAQ on the Evaluation of Gender Aspect of H2020 Proposals', https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/faq/977, accessed 1 Mar. 2024.

Flink, T. and Kaldewey, D. (2018) 'The New Production of Legitimacy: STI Policy Discourses beyond the Contract Metaphor', *Research Policy*, 47: 14–22.

Foster, C. and Heeks, R. (2013) 'Conceptualising Inclusive Innovation: Modifying Systems of Innovation Frameworks to Understand Diffusion of New Technology to Low-income Consumers', *The European Journal of Development Research*, 25: 333–55.

Fressoli, M. et al. (2014) 'When Grassroots Innovation Movements Encounter Mainstream Institutions: Implications for Models of Inclusive Innovation', *Innovation and Development*, 4: 277–92.

George, G. et al. (2019) 'Inclusion and Innovation: A Call to Action'. in: G. George, T., Baker P., Tracey and H., Joshi (eds.) *Handbook of Inclusive Innovation: The Role of Organizations, Markets and Communities in Social Innovation*, pp. 2–22. Cheltenham: Edward Elgar.

Graafland, J. and Smid, H. (2019) 'Decoupling among CSR Policies, Programs, and Impacts: An Empirical Study', *Business & Society*, 58: 231–67.

Harsh, M. et al. (2018) 'The role of emerging technologies in inclusive innovation: the case of nanotechnology in South Africa', *Science and Public Policy*, 45: 597–607.

Heeks, R. et al. (2013) 'Inclusive Innovation: Definition, Conceptualisation and Future Research Priorities', IDPM Development Informatics Working Paper no. 53. UK: University of Manchester.

Heeks, R., Foster, C., and Nugroho, Y. (2014) 'New Models of Inclusive Innovation for Development', *Innovation and Development*, 4: 175–85.

Heeks, R., Foster, C., and Nugroho, Y. (eds.) (2017) *New Models of Inclusive Innovation for Development*. London: Routledge.

Hughes, M. M., Paxton, P., and Krook, M. L. (2017) 'Gender Quotas for Legislatures and Corporate Boards', *Annual Review of Sociology*, 43: 331–52.

Jabbouri, R., Schneckenberg, D., and Truong, Y. (2022) 'From Policy-Practice to Means-Ends Decoupling in Organizations: A Systematic Review and Paths for Future Research', *Management International*, 26: 123–48.

Kalliomäki, H., Ruoppila, S., and Airaksinen, J. (2021) 'It takes two to tango: Examining productive interactions in urban research collaboration', *Research Evaluation*, 30: 529–39.

Kidd, I. J., Chubb, J., and Forstenzer, J. (2021) 'Epistemic Corruption and the Research Impact Agenda', *Theory and Research in Education*, 19: 148–67.

Koch, S. (2020) 'Responsible Research, Inequality in Science and Epistemic Injustice: An Attempt to Open up Thinking about Inclusiveness in the Context of RI/RRI', *Journal of Responsible Innovation*, 73: 672–9.

Lieu, J. et al. (2023) 'Inclusive Stakeholder Engagement for Equitable Knowledge Co-production: Insights from the EU's Horizon 2020 Programme in Climate Change Research', *Gaia - Ecological Perspectives for Science and Society*, 32: 138–43.

Magro, E., Navarro, M., and Zabala-Iturriagagoitia, J. M. (2014) 'Coordination-Mix: The Hidden Face of STI Policy', *Review of Policy Research*, 3: 367–89.

EC, DG RTD and Mazzucato, M. (2019) 'Governing Missions in the European Union', Publications Office. https://op.europa.eu/s/zhdU, accessed 20 Feb. 2024.

McCowan, T. (2018) 'Five Perils of the Impact Agenda in Higher Education', *London Review of Education*, 16: 279–95.

Meyer, J. W. and Rowan, B. (1977) 'Institutionalized Organizations: Formal Structure as Myth and Ceremony', *American Journal of Sociology*, 83: 340–63.

Molas-Gallart, J. and Davies, A. (2006) 'Toward Theory-Led Evaluation: The Experience of European Science, Technology, and Innovation Policies', *American Journal of Evaluation*, 27: 64–82.

Mortazavi, S. et al. (2021) 'Mapping Inclusive Innovation: A Bibliometric Study and Literature Review', *Journal of Business Research*, 122: 736–7.

Muhonen, R., Benneworth, P., and Olmos-Peñuela, J. (2020) 'From Productive Interactions to Impact Pathways: Understanding the Key Dimensions in Developing SSH Research Societal Impact', *Research Evaluation*, 29: 34–47.

NABI (2018) The Current State of Broader Impacts: Advancing Science and Benefiting Society', https://researchinsociety.org/wp-content/uploads/2021/02/NabiCurrentStateOfBI-011118.pdf, accessed 1 Mar. 2024.

NSF (2024a) 'Broader Impacts', https://new.nsf.gov/funding/learn/broader-impacts, accessed 23 Feb. 2024.

NSF (2024b) 'Directorate for Technology, Innovation and Partnerships (TIP)', https://new.nsf.gov/tip/latest, accessed 1 Mar. 2024.

NSF (2024c) 'Enabling Partnerships to Increase Innovation Capacity (EPIIC)', https://new.nsf.gov/funding/opportunities/enabling-partnerships-increase-innovation-capacity, accessed 1 Mar.2024

OECD (2015) 'Scaling up Inclusive Innovations', in *Innovation Policies for Inclusive Growth*, pp. 9–34. Paris: OECD.

Owen, R., Macnaghten, P., and Stilgoe, J. (2012) 'Responsible Research and Innovation: From Science in Society to Science for Society, with Society', *Science and Public Policy*, 39: 751–60.

Owen, R., von Schomberg, R., and Macnaghten, P. (2021) 'An Unfinished Journey? Reflections on a Decade of Responsible Research and Innovation', *Journal of Responsible Innovation*, 8: 217–33.

Oxford Dictionary of English, MOT (2024) 'Inclusion', Kielikone Oy. www.sanakirja.fi/oxford_english/english-english/inclusion, accessed 27.Feb.2024.

Pansera, M. and Owen, R. (2018) 'Framing Inclusive Innovation within the Discourse of Development: Insights from Case Studies in India', *Research Policy*, 47: 23–34.

Planes-Satorra, S. and Paunov, C. (2017) 'Inclusive Innovation Policies: Lessons from International Case Studies', OECD Science, Technology and Industry Working Papers.

Quick, K. S., and Feldman, M. S. (2011) 'Distinguishing Participation and Inclusion', *Journal of Planning Education and Research*, 31: 272–90.

Robinson, D. K., Simone, A., and Mazzonetto, M. (2021) 'RRI Legacies: Co-creation for Responsible, Equitable and Fair Innovation in Horizon Europe', *Journal of Responsible Innovation*, 8: 209–16.

Schillo, R. S. and Robinson, R. M. (2017) 'Inclusive Innovation in Developed Countries: The Who, What, Why, and How', *Technology Innovation Management Review*, 7: 34–46.

Schot, J., and Steinmuller, W. E. (2018) 'Three Frames for Innovation Policy: R&D, Systems of Innovation and Transformative Change', *Research Policy*, 47: 1554–67.

Sengupta, P. (2016) 'How Effective Is Inclusive Innovation without Participation?', *Geoforum*, 75: 12–5.

Thapa, R. K., Iakovleva, T., and Foss, L. (2019) 'Responsible Research and Innovation: A Systematic Review of the Literature and Its Applications to Regional Studies', *European Planning Studies*, 27: 2470–90.

Woodson, T.S., and Boutilier, S. (2023) 'From intent to impact—The decline of broader impacts throughout an NSF project life cycle', *Research Evaluation*, 32: 348–55.

Woodson, T.S., Hoffmann, E., and Boutilier, S. (2021) "Evaluating the NSF broader impacts with the Inclusion-Immediacy Criterion: A retrospective analysis of nanotechnology grants', *Technovation*, 101: 102210.

Appendix 1.

List of analyzed documents from oldest to most recent

	NSF documents		EU documents
A1	National Science Foundation (2002). Merit Review Broader Impacts Criterion: Representative Activities. https://www.nsf.gov/pubs/2002/nsf022/bicexamples.pdf	B1	European Commission, Directorate-General for Research and Innovation, *Options for strengthening responsible research and innovation: report of the Expert Group on the State of Art in Europe on Responsible Research and Innovation*, Publications Office, 2013, https://data.europa.eu/doi/10.2777/46253
A2	Clewell, B. & Fortenberry, N. (Eds.). (30 June 2009). Framework for Evaluating Impacts of Broadening Participation Projects.	B2	European Commission (2014). Horizon 2020 Work Programme 2014–2015. Table of Contents and 1. General Introduction. Revised. European Commission Decision C (2014)4995 of 22 July 2014.
A3	National Science Board (2011). National Science Foundation's 3 (NSB/MR-11-22)* http://www.nsf.gov/nsb/publications/2011/meritreviewcriteria.pdf	B3	European Commission, Directorate-General for Research and Innovation, *Responsible research and innovation: Europe's ability to respond to societal challenges*, Publications Office, 2014 https://op.europa.eu/s/yX8X
A4	National Science Foundation (2014). Perspectives on Broader Impacts (NSF 15–008). https://nsf-gov-resources.nsf.gov/2022-09/Broader_Impacts_0.pdf	B4	Rome Declaration on Responsible Research and Innovation in Europe. 21 November 2014.
A5	NSF INCLUDES (2020). Special Report to the Nation II—Building Connections. Shared Vision, Partnerships, Goals and Metrics, Leadership and Communication, Expansion, Sustainability and Scale.	B5	European Commission, Directorate-General for Research and Innovation, *Indicators for promoting and monitoring responsible research and innovation: report from the Expert Group on policy indicators for responsible research and innovation*, Publications Office, 2015, https://data.europa.eu/doi/10.2777/9742
A6	National Science Foundation (2021). Dear Colleague Letter: A Broader Impacts Framework for Proposals Submitted to NSF's Social, Behavioral, and Economic Sciences Directorate (NSF 21–059). Arthur Lupia, Assistant Director Directorate for Social, Behavioral and Economic Sciences. https://www.nsf.gov/pubs/2021/nsf21059/nsf21059.pdf	B6	European Commission (2017). Horizon 2020 Work Programme 2016–2017. Table of Contents and 1. General Introduction. European Commission Decision C (2017)2468 of 24 April 2017.
A7	U.S. National Science Foundation. Leading the World in Discovery and Innovation, STEM Talent Development and the Delivery of Benefits from Research. NSF Strategic Plan for Fiscal Years 2022–2026. https://www.nsf.gov/pubs/2022/nsf22068/nsf22068.pdf	B7	European Commission, Directorate-General for Research and Innovation, Stilgoe, J., *Monitoring the evolution and benefits of responsible Research and Innovation*, Publications Office, 2018, https://data.europa.eu/doi/10.2777/285467
A8	National Science Foundation (2023). Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 22–1). 30 January 2023. https://nsf-gov-resources.nsf.gov/2022-10/nsf23_1.pdf?VersionId=7yfheI.bNrekBK7F5cKu9riXFbi1YjRX	B8	European Commission, Directorate-General for Research and Innovation, Delaney, N., Iagher, R., Tornasi, Z., *Institutional changes towards responsible research and innovation: achievements in Horizon 2020 and recommendations on the way forward*, Publications Office, 2020, https://data.europa.eu/doi/10.2777/682661
A9	National Science Foundation TIP. Recorded Webinar: TIP Updates. 2 June 2023. https://www.youtube.com/watch?v=T3W6Tr-5MLE	B9	European Commission (2020).. Horizon 2020 Work Programme 2018–2020. 16. Science with and for Society. European Commission Decision C(2020)6320 of 17 September 2020.
		B10	European Commission (2020). Horizon 2020 Work Programme 2018–2020. 1. General Introduction. European Commission Decision C(2020)6320 of 17 September 2020.
		B11	European Commission, Directorate-General for Research and Innovation, *Horizon Europe—Strategic plan 2021–2024*, Publications Office of the European Union, 2021, https://data.europa.eu/doi/10.2777/083753

*Pp. 1–16, 25–26, appendixes excluded except for Appendix B: Section 526 of the America COMPETES Reauthorization Act.

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Reconsidering neighbourhood communality through the lens of intersectionality: resident and authority perspectives

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ABSTRACT

This article examines how neighbourhood communality emerges and is restricted by a range of conditions, a topic that has received increasing attention in current research yet remains unresolved. The concept of communality provides a lens through which to examine how a variety of intersectional factors related to the informants' social status affect the perceptions of the sense of community in the study's focus neighbourhoods in Vaasa, Finland, where interview materials were gathered. The analysis scrutinizes the ways in which local institutions, the environment and residents interact with the three types of narration gestalts – inclusion, recollection and segregation – construing the idea of communality in the studied neighbourhoods. The study combines actor-network theory with intersectionality to gain insight into how and where people come together and interact. It became clear that the target neighbourhoods and people who live there are marginalized and seen as 'others' because of their socioeconomic status and other demographics.

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1. Introduction

Scholars in sociology, urban studies and human geography have conducted a great deal of research on neighbourhood communality and belonging. In her seminal work, *The Death and Life of Great American Cities* (1961), Jane Jacobs argued that compact, diverse neighbourhoods encouraged social interaction and a sense of community. *Bowling Alone* (2000), a book by Robert Putnam (2000), examined the decline of social capital in American communities and the influence of individualism on neighbourhood relationships (see also Klinenberg 2012; Wilson 2012).

Finnish neighbourhoods have seen a slow but significant change in their population. Neighbourhoods are becoming greyer and poorer, with increasing numbers of ethnic minorities (Vaattovaara et al. 2023). As the situation in some Swedish neighbourhoods shows, social segregation can lead to inequality and, in extreme cases, violence (Egorova, Ivanova, and Varshaver 2020; Gerell, Puur, and Guldåker 2022; Vogiazides and Mondani 2023). Despite the differences in housing and educational policies, Finland has also seen the same sorting out of people and places that has been happening throughout Europe in the last few decades.

The aim of this article is to analyse how residents and municipal authorities, from their different standpoints, narratively construct the suburban communities of Ristinummi and Olympia in the city of Vaasa, Finland. For this, we utilize the concept of 'communality' as a tool to investigate the intersections of individuals and varied social groupings in the target neighbourhoods. We

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identify different understandings of communality through a close reading of interviews in which the informants express their ideas of place-based belonging and togetherness. The intersectional discourses in our empirical data, and actor-network theory (hereafter ANT), with its emphasis on overcoming the dualism between the natural and social worlds (Arias-Maldonado 2013; Crutzen and Stoermer 2000), provide the basis for identifying and analysing the key narratives and various positions of power among the stakeholders (i.e. residents and authorities) who play a significant role in the development of the focus neighbourhoods. These theoretical and methodological extensions fill a research gap in the understanding of the mechanisms and patterns of communality in cities' neighbourhoods.

In terms of contributions to community theories, both intersectionality theory and ANT offer unique insights into the emerging complexities of social relationships and community formation. Intersectionality theory provides a critical lens for understanding the ways in which social identities and power relations interconnect to shape individual experiences of community. Intersectionality, a term first coined by Kimberle Crenshaw (1989), highlights the importance of recognizing the diversity of social groups and the ways in which different forms of social stratification intersect to create complex social hierarchies and forms of discrimination (Garcia 2016; Phoenix and Pattynama 2006). ANT, for its part, provides a framework for understanding the ways in which social actors and networks interact to shape the formation and maintenance of communities. It also emphasizes the importance of non-human actors and material objects in the construction of social networks, and the ways in which these actors can have a significant impact on the dynamics of social relationships (Farías and Bender 2010; Latour 2005).

In previous research, the obstacles and hindrances to community spirit and activity have frequently been studied from the standpoint of a lack of economic, social or cultural capital, which can be identified both at the individual and community levels or in terms of the potential for conflict between different individuals and/or groups (e.g. between the native population and immigrants) (Bourdieu 1986; Turner 2005; Elder-Vass 2012; Lehtonen 2015). Less research has been done on communality with an emphasis on different neighbourhood discourses and the intersectional characteristics of a local community. This has an impact on the social standing of its residents and, in the worst cases, activates discrimination, alienation and negative stereotyping (Back 1996; Gordon, Christie, and Robinson 1989; Kurban and Tobin 2009; Lockwood et al. 2018).

When analysing and discussing our data, we discovered that the concept of communality enables us to identify important intersections determined by local institutions, environments and residents. In this regard, the idea of communality seemed to be a more nuanced and effective tool than the concept of inclusion alone, which has been employed more frequently in neighbourhood research (Kohon 2018; Short 2021; Mirzoev et al. 2022), especially when combined with intersectionality. Thus, we believe that including our concept of communality in the body of literature adds a perspective that has frequently been neglected and should be considered more carefully because of its usefulness in facilitating analysis.

By communality, we refer to meaningful social interactions and entanglements creating a sense of belonging among individuals. We use the term 'communality' in this sense throughout this study. Accordingly, we assume that communality has relational, emotional and functional manifestations from which we can obtain discursively constructed information from our interviewees (Potter and Wetherell 1987). Furthermore, our study generates the idea of neighbourhood from research data containing three types of narrative gestalts: inclusion, recollection and segregation. These gestalts are shaped by local institutions, the environment and residents. We also discuss how neighbourhood community spaces and local development activities are viewed from different perspectives by the informants. We recognize that a shared location of residence in a neighbourhood does not necessarily mean shared values and activities among the residents (Salimi, Foroutan, and Naghdi 2019). Here it is important to note that in some literature, the word 'communality' is used to refer to conflict, even violence, between separate groups, notably those with different

religions or ethnic origins (Väyrynen 1998; Brosché 2023). In this article, we do not focus on communal violence or conflict resolution.

We seek to answer the following research questions:

(1) How do the interviewees' understandings of communality affect their perceptions of and ideas about the neighbourhoods studied and their development?
(2) How are different understandings of a desirable urban community linked with institutionalized power structures produced by socio-economic differences, privilege and disadvantage, and public authorities?

Through these questions, we identify various understandings of communality – from different positions, roles and perspectives – and the ways they interconnect at the level of urban development.

We argue that the sense of place, the sense of community and one's identity are interlinked and intra-active. By 'intra-active' we refer to agency as a dynamic process of change and mutability emerging in encounters with things, rather than as an inherent property of an actor (see Barad 2007). We further suggest that by understanding this intersecting, intra-active nature of community narratives in the formation of place, community, and self-identity, we may better understand how these accounts contribute to the marginalization and oppression of certain groups.

This article is structured as follows. The next section briefly reviews the theoretical framework of our study, including a discussion of the concept of communality. This is followed by a discussion on the role of 'new cultural geography' in conjunction with ANT and an intersectional approach that together form the theoretical lens through which we analyse our data.

In the analysis chapters, we specify and address the different narrative structures and compositions through which the understanding of communality is provided and represented by our informants. The intersectional implications that relate to different ways of narrating communality are also examined. Finally, we provide directions for future research of value to both academic researchers and practitioners, such as social workers and youth workers seeking to integrate communality initiatives into their activities. This discussion focuses, in particular, on the concept of communality and the need for supplementary research on this topic.

2. Theoretical directions

Ferdinand Tönnies (2001) famously theorized human association by distinguishing *Gemeinschaft* and *Gesellschaft*. In *Gemeinschaft*, often translated as community, individuals are associated with each other based on social bonds and common goals. According to Tönnies, family is an archetypal example of *Gemeinschaft*. In *Gesellschaft*, referring to society, common goals do not exist to the same extent, but membership is defined based on an individual's self-interest, best promoted by social networking. Despite its merits as an analytical tool, Tönnies' *Gemeinschaft/Gesellschaft* distinction is simplistic and (somewhat) limited, especially when viewed from the more recent perspective of intersectionality, a key framework for understanding how human beings are shaped and influenced by the interaction of multidimensional social identities (e.g. gender, class, sexuality, race/ethnicity, nationality, ability and age) (Phoenix and Pattynama 2006; Collins 2015; Garcia 2016). In the present study, we try to enhance and broaden Tönnies' understanding of community by considering the perspective provided by intersectionality, where social and societal roles intersect in the context of a location or place. This kind of location-related sense of community, at the intersection of multiple values, activities and drivers, can thus be called 'communality'. Limited space prevents our discussing Tönnies' viewpoints and their reception in greater detail. For the purposes of this paper, it suffices to state that despite its idealistic and normative aspects, the Tönnian concept of a community does not need to preclude conflict between community members and between different communities; in fact, it includes this possibility.

Community is also a situated, place-related concept, even though information technology and social media have changed how places are represented. As suggested by Gusfield (1975), a sense of community is both emotional (sense of place) and relational (sense of belonging). A sense of belonging causes people to socially engage with others within the community, supporting shared interests, cultural values and social well-being, characteristics that might be seen to engender a strong sense of community (Taylor, Pooley, and Carragher 2016). In actor-network theory (Latour 2005), things, ideas and people are seen as equally important in the creation of meaningful collectives and assemblages. Situated communality in neighbourhoods is never static; it is constantly living and changing in connection to the objects and people around it.

We also rely on the work of McMillan and Chavis (1986) on the four features of community (membership, influence, integration and fulfillment of needs, and a shared emotional connection). When identifying different conceptions of community in our research, we pay attention to which features are the most relevant in the opinions of our interviewees. We furthermore acknowledge that community and sense of community are relational concepts, usually connected to the place, landscape and environmental artefacts in the location. However, as Thrift (2008, 98) points out, the fabric of space is open-ended rather than enclosed. Community can also be a virtual or hybrid 'space' in which individuals share similar interests and values, without necessarily sharing the same location. Ultimately, everyone is physically interacting someplace, carrying the ideas of social networks and bringing them into their habitats. Community based on this can also be symbolic, connecting the values and ideas of a certain group of people with their behaviours.

Furthermore, we recognize that community and sense of community are not merely descriptive concepts; they also include the idea that community and communality are valued and regulatory. This can be seen, for example, in the fact that many organizations, both in the private and public sectors, have named either 'community', the 'sense of community' or 'communality' as an organizational value and a branding attribute (Jørgensen and Bozeman 2007; van der Wal, de Graaf, and Lasthuizen 2008). Thus, communities are not only interactions between people in a certain place and time, they are also discursively maintained through shared values, narratives and recognition (Lewis 2016).

As narratives are central meaning-making systems for individuals and human social networks, such as families, neighbourhoods and urban communities, it is reasonable to suggest that one's identity as a community member appears in the nexus of place, social interaction, and narratives. Accordingly, cohesion within communities and neighbourhoods derives from their shared narrative heritage (Lejano et al. 2018; Lejano, Ingram, and Ingram 2013).

It is also important to study community narratives, because stories can maintain internalized, exclusive and even detrimental social structures, such as racism or ableism. Authors such as Susan Friedman (1998), have pointed out that cultural narratives encode and encrypt the norms, values and ideologies of the social order. As narratives often draw from normative symbols and stereotypes, recognizing the prevalent aspect of community accounts is important because strong extrinsic articulations (e.g. those given by researchers, urban planners and marketeers) or hegemonic, unilateral narratives of community are at risk of conveying stereotypes and assumptions that may be a component of the oppression and marginalization of certain demographics. These dynamics can lead to the formation of imaginaries and assumptions that make some iterations of communality more desirable than others and eventually lead to segregation and exclusion.

Our approach closely reflects the key features of the new cultural geography, a theoretically informed paradigm for recognizing cultural nuances and social behaviour related to human spatiality (i.e. the fundamental physical and social feature of human life that frames and constrains all our actions). This paradigm emerged from the 'cultural turn' in geographic studies and was associated with the 'culturalization' of multiple fields of study that took place during the 1980s (Cresswell 2010; Jackson 2016). More recently, the 'new cultural geography' was enriched with paradigms such as actor-network theory (ANT) and non-representational theory (NRT) in the 1990s, which then opened a perspective to a combined theoretical standpoint ('more-than-human-geography scene'), where all living and non-living things surrounding humans are seen to be related to social,

material and semiotic meaning-making (Anderson 2006, 610; Barad 2007, Bennett 2010; Eriksson 2008; Willett 2021).

The human relationship to location and space is intrinsically connected to the idea of dwelling, which again is connected to the idea of building and the construction of meaning within it (Heidegger 1971). Lingual practices paced by culture and governance determine how the flows of physical matter and actions are coordinated within a social sign system and within narratives (Gren 1994). In addition, language not only describes the state of events, but also represents direct exercise of power (e.g. ratification of a city plan in the city hall permits the start of construction work) (Austin 1975). With reference to the political dimension of human action, ANT indicates how material is involved with human will and power (Anderson and Harrison 2010).

This enhanced paradigm also underpins the present study, in which narrativity is understood as a coproduct of a whole suburban realm, including natural and human-made environments that shape our informants' perceptions of the target neighbourhoods' potential as regards creating and maintaining communality, for example, by providing meeting and gathering places and by providing opportunities and facilities for interests and leisure time activities. Combining intersectional theory and actor-network theory provides a framework that allows us to understand how social identities and networks interact to produce systems of oppression. For example, intersectional theory suggests that particular social identities are more vulnerable to oppression in certain networks, while ANT helps to identify the actors and objects that are involved in sustaining these networks.

With these premises as a background, our interviewees' discussions about neighbourhood communities can be considered to contain symbols, indicators and insinuations, which can be interpreted as signs in the 'maps of meaning', which form the patterns of social organizations and relationships. Through these 'maps', individuals become not just humans (Clarke 1976, Jackson 2016), but also members of relational networks that connect humans, buildings, stones, plans, trees, dogs, hedgehogs, roads, bushes and lawns, as well as different stakeholders, media and politics. In the contemporary era of coproduction and inclusion, maps of meaning are objectified in social practices of mutual interpretation, and finally in the appearance of physical artefacts and environments established by urban planners and administrators.

3. Data and methods

Throughout this study, we identify different understandings of communality through a close reading and content analysis of gathered data in which our interviewees share their opinions on the communities in the Ristinummi and Olympia Quarter. We chose these Vaasa neighbourhoods to better understand the continuing urban transformation, because on the one hand, Vaasa embodies the Nordic welfare heritage; on the other hand, the city and its people have noted a reputational burden and changing population, especially in these two neighbourhoods.

Vaasa is a city on the west coast of Finland (see Figure 1). The city has a population of approximately 68,000 and is bilingual, with 70% of the population speaking Finnish as their first language and 25% speaking Swedish. Vaasa is a major university and college city and the largest energy technology hub in the Nordic countries.

The suburban communities of Ristinummi (pop. 7,048) and Olympia (pop. 800) are below the city's average income level. The Olympia Quarter, built in the beginning of the 1990s, is densely populated, predominantly with students and immigrants. Ristinummi, a typical 1970s Finnish residential area located on the outskirts of the city, has a higher unemployment rate than Vaasa on average. In addition, Ristinummi has a larger immigrant population than most other neighbourhoods in the city. In Ristinummi, 16.5% of the population speaks a foreign language (Nylén 2023).

The Olympia Quarter in the Vöyrinkaupunki area, boasts one of the most diverse demographics (pop. 4,160) in the city. The large number of new apartment complexes in the area built in the 2010s and 2020s, has benefitted the area's population development. Vöyrinkaupunki's foreign-language

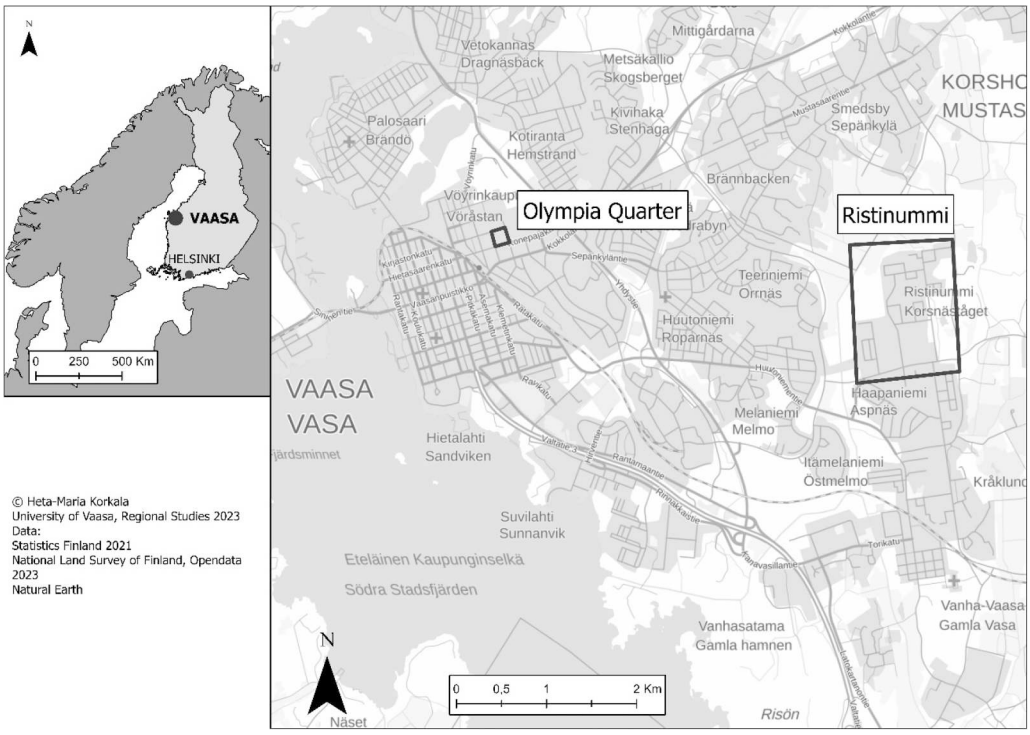

Figure 1. Map of Finland and Vaasa.

population has increased dramatically in the previous 20 years. In the 0–15 age range, the proportion of foreign-language speakers exceeds 40% (Nylén 2023.).

In this study, neighbourhood development served as a starting point for the discussions through which our respondents' experiences and perspectives could be examined. The city officials and residents had varied perspectives about the target neighbourhoods, even though they agreed on many points.

The qualitative research material consists of transcribed recordings of interviews and focus group discussions (hereafter called the Community Urban Planning Lab or CUPL), which were conducted in the Finnish language. The team's five researchers conducted 25 thematic interviews and seven CUPL sessions with 33 residents and 11 authorities during 2020 and 2021. The data were recorded using dictation equipment and online sessions, and the research material was transcribed.

The authorities we used as informants consisted of 19 local government officials and politicians, project specialists and urban planners. The resident informants represented various ethnic groups, ages and socioeconomic backgrounds. There were 33 resident respondents consisting of both immigrants (first and second generation) (n = 7) and the Finnish population (n = 26); 60% of informants were women, while 40% were men. Throughout the data gathering process, special consideration was given to disadvantaged populations such as immigrants, the unemployed, the elderly and those with disabilities. In addition, young people were considered as a special group.

According to our hypothesis, neighbourhood communities are constructed socially and culturally via customs, signification, policies and practices that are continually changing over time, and in which some individuals and groups have a more dominant position than others. Therefore, an intersectional analysis that addresses the underlying social and structural dimensions of community may not only shed new light on communality in neighbourhoods, but also help to avoid reproducing marginalization and systemic oppression by valuing particular experiences of community

while obscuring others. Furthermore, intersectional analysis contributes to place-based neighbourhood research by considering not only the physical environment and its spatial features, but also social status-influencing and governance-influencing factors that impact neighbourhood reputation, residents and communality (Gorbunova, Ambrasat, and von Scheve 2015).

We have deliberately focused on the intersectional determinants influencing the social status of residents and their sense of communality. These determinants include local institutions, the environment and residents (see Figure 2). They interact with the three types of narration gestalts – inclusion, recollection and segregation – construing the idea of communality in the studied neighbourhoods. The determinants are analysed indirectly, when only the outcome might be observable; for example, income might have an effect on the spectrum of hobbies which are possible for a resident. The narratives of our participants exemplified how varied and mutually reinforcing the factors that affect communality are, both at the individual level and at the social level.

Recent intersectional research has acknowledged the significance of place, space and location in constructing identities, social categories and oppressive structures in society (Lundström 2010; Nightingale 2011; Castán Broto and Alves 2018; Vietinghoff 2021; Blidon 2018, Baylina Ferré and Rodó-de-Zárate 2016, Datta 2007). As a location may have a recognized identity or *genius loci* of its own (Stedman 2003), the identity of a certain place also interrelates and intersects with the identities and categorizations of people residing in the location (Vietinghoff 2021). One's location within a city may thus become an element of one's identity that intersects with other identity elements (Vietinghoff 2021), but the place people inhabit may also be part of the oppressive and marginalizing structure that they face in their daily lives.

We consider the intersecting concepts of locality and communality to illuminate how certain groups of people may be marginalized as a result of the location within the city where they reside, as well as through narration gestalts connected to certain locations. In the most concrete sense, this means that residents have or do not have opportunities to realize their aspirations in relation to the

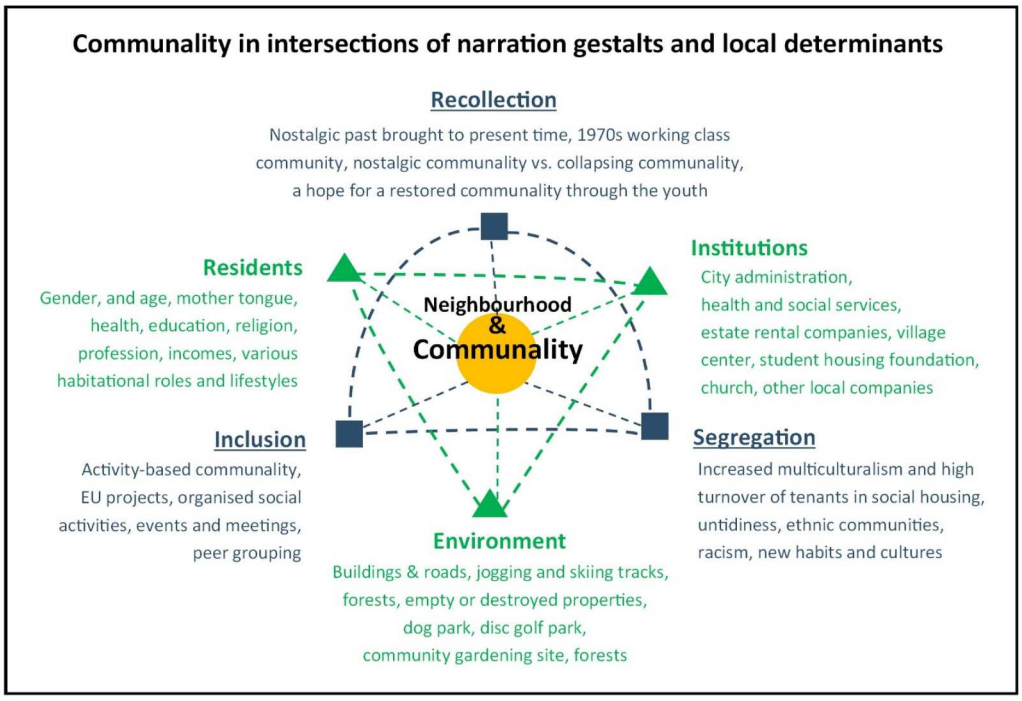

Figure 2. Communality in intersections.

environment's affordances. Considering discursively emerged and narrated communality, we want to emphasize that discourse and narratives are here considered to be part of the agential becomingness of the material world (Barad 2007; Bennett 2010; Bürk, Kühn, and Sommer 2012; Willett 2016). Furthermore, we discuss how the concept of communality is discursively and semiotically constructed when considering marginalized groups, such as ethnic minorities, refugees and immigrants living in marginalized locations, like blocks of council flats, which have a negative reputation.

4. Othering places, weaving communities

In the following section, we present and discuss our informants' views on communality and sense of community, to the extent that is necessary for detecting and identifying repeated discursive conceptualizations.

One of our research questions specifically focused on how our interviewees perceived and characterized communality. Accordingly, we asked them to respond to the following questions: 'What do you think about communality in Ristinummi or in the Olympia Quarter?' and 'Has communality changed somehow in the neighbourhood in question?'. Based on the answers given, we were able to identify three major discursive conceptualizations of communality. These narration gestalts – inclusion, recollection and segregation – reflect a range of social and organizational perspectives on living in a suburban community.

As our main method of data gathering was focus group interviewing in CUPLs with different stakeholders, the perceptions of communality appear to us to be storied and narrated. We emphasize that these narratives are not inherently distinct, but rather co-constitutive, generating complex and intersectional identities for places and the people who live in them. As Samara Brock (2009) has argued, stories about us and others, both conscious and unconscious, create either the cohesiveness or divisiveness of communities and societies. According to ANT, the structures of the physical environment, formed by stones, trees and buildings, also function as markers and symbols of, for instance, nostalgia, decadence and cooperation. Thus, stories do not determine their own sphere, but have a connection to everything that surrounds people; they point at something and frame people's views (Farías and Bender 2010).

However, as narratives are a potent tool for identification, which can be empowering, they may also be problematic. As these accounts shape the way we think and act, and thus ultimately shape the world we live in, it is crucial to discern whose stories are plausible and accountable and whose are not. Leonie Sandercock (2003) suggests that official urban discourses produced by city council planning departments, police departments and mainstream media tend to legitimize and privilege the fears of the bourgeoisie, reinforcing narratives and fears about 'others' who might invade or disrupt their familiar local spaces and their habitus.

De-humanization of certain groups may result from questioning their capability to maintain communality (Chu and Martin 2021) or by questioning the way they maintain a sense of community. Some local government officials we interviewed put forward the idea that communality refers to one's identity as a member of a community (INTV 03/03/2021; cf. McMillan and Chavis 1986). This dovetails with the ANT's concept that when people play diverse roles in their communities, they build a web that has a more holistic meaning than its individual members, both functionally and in terms of its controls, including socio-psychological impacts, such as attitudes and feelings. A feeling of belonging may be especially valuable for people who face oppression in their daily lives, and there are carefully documented examples of well-functioning urban communities formed by marginalized groups for whom a community offers a safe space to live in a hostile society (e.g. Ghaziani 2014).

However, close-knit communities formed by marginalized and oppressed people may also face stigmatization by outsiders. Thus, communality as a term may also have the potential to exercise power over marginalized people and segregated areas, by creating exclusion if discursively used to separate some groups from each other. Following this reasoning, entire city districts can be

stigmatized through questioning, by means of narrative actions, the functioning of the community in that place.

We also argue that the displacement or placement of neighbourhood residents is often produced through narrated community (cf. Anderson 2006; Jupp 2021). The dominant image of the place is created through discursive conceptualization of community with many intersectional factors contributing, such as socio-economic status, gender, and ethnic background. One of our respondents, working but not living in the Olympia Quarter, points this out by saying:

> I was walking there … and, oh yeah, it is a silent neighbourhood … Maybe in an apartment a family was having breakfast, and then a foreigner [was] smoking. Thus, I do not believe it is a communal block. I might be wrong, but during my workday, I did not notice any sign of the place being very communal. (INTV 14/02/2021)

As indicated above, the Olympia Quarter is described as silent but not completely empty, with no visible signs of communality. What is notable is that the quietness of the neighbourhood is not interpreted as a sign of residents working outside of home during typical working hours, but a proof of impaired communality, suggesting once again the widely accepted preconception of the Olympia Quarter's residents being unemployed immigrants. However, contesting the claim of deprived communality, an Olympia Quarter resident notes:

> Here [at Olympia] the sense of community is good and neighbours chat and help each other. Negative opinions do not hold true, but frankly, it is the xenophobia and racism that are reflected onto the Olympia Quarter. (INTV 08/09/2020)

Examples such as the one above, suggest existing, marginalizing narratives that form and sustain the othered status of Ristinummi and the Olympia Quarter. When a neighbourhood is slandered, the residents living there are also negatively labelled, which the informant in the above quotation wishes to disclose and correct. Catrin Lundström (2010) noted that suburban areas are often racialized and seen as 'unsafe' in the daily press, whereas white, middle-class areas are seen as neutral and non-racialized. Thus, predominantly white residential areas are normalized and construed by the racialization of certain suburban areas. In a discursive process where preferred properties qualify as the norm, places that do not hold these properties become *othered* (Staszak 2009). However, not all the residents of an 'othered' suburb necessarily feel out of place, but may, in fact, feel a sense of belonging when bonded with their peer groups. In the following subsections, we discuss how social norms, margins and otherness are created and maintained through community narratives.

4.1. Inclusion

Our informants described good community spirit by enumerating and depicting different social activities. This was somewhat expected, as social interaction and inclusion can be considered a defining feature of community spirit. Our interviews contain explanatory examples of how this atmosphere is manifested.

Understanding communality as getting together with friends and neighbours for leisure activities was most often described as a premeditated, organized event arranged by different associations or city officials, or get-togethers informally organized by people living in the area. These activities include a wide variety of social events and casual outdoor gatherings, such as the annual Ristinummi Day and summer barbeque parties with music (INTV 08/03/2020; CUPL 18/11/2020, Speakers 6 and 8; INTV 23/02/2021). Additionally, many older residents in Ristinummi reminisce about sports competitions that used to be an important part of their neighbourhood's social activities (INTV 16/11/2020; CUPL 18/11/2020, Speaker 6; CUPL 23/02/2121, Speaker 3). City officials and community developers emphasized instructive and inclusive youth activities, such as clubs and cultural events, as a meaningful contribution to creating and maintaining a sense of community (INTV 26/04/2021).

What is noteworthy is the strong emphasis on the idea that communal living requires organization (INTV 16/11/2020; CUPL 18/11/2020, Speaker 6). It also requires facilities and primarily an understanding of how one's aspirations can be connected to existing environmental and spatial opportunities. Therefore, activity-based communality is organizer-dependent (and to some extent, authority and project-dependent) and vulnerable to the replacement of human resources. For example, if a residents' association loses an active leader, all of its activity can come to a halt (INTV 08/03/2021, Speaker 1).

In our data, active participation in social leisure activities was also understood as an expression of dedication to one's neighbourhood, an opinion that combines an operational understanding and a psychological understanding of communality (McMillan and Chavis 1986). This combination was explicitly referred to in the following statement: 'Communality means feeling like home and doing outdoor activities in the yard' (INTV 21/01/2020). This statement also illuminates that in the discourse on community, there is a strong linkage between communality and outdoor infrastructure. Accordingly, our informants identified several specific buildings and outdoor areas as central for communal activities and community involvement (INTV 26/01/2021; CUPL 18/11/2020, Speaker 8; CUPL 18/11/2021, Speaker 11). In addition, very specific enhancements to develop infrastructure were suggested, such as replacing asphalt courtyards with gardens and outdoor gym equipment (INTV 12/2/2021), indicating that communality is understood as something that requires physical activities.

In addition to premeditated and organized events, the social activities mentioned in our data also included descriptions of neighbourly mutual aid and peer groups. However, most of the descriptions given were expressed by ethnic minority residents. All of them described the community spirit as good, and indicated that it creates an atmosphere of mutual help, embodied in different measures of support:

> Speaker 2: … we help each other. We know what is going on here. When outside, I meet children from other families and I will know how they are doing, and that makes us feel that we are safe and at home here in Olympia.
>
> Speaker 4: We have the connection, and the community we have is okay … and we know each other … And if we have time, we help each other voluntarily (CUPL 20/06/2021).

These informants also described communality as a network of communication rather than outdoor activity, and they linked acts like phone calls, knowledge sharing, informing and discussion between neighbours with the concept of community. Referring to the narration gestalt of segregation, it is significant that this kind of intimate and communicative network of residents is rarely visible for those who do not live in the same neighbourhood, and this may lead to the false judgement that the neighbourhood lacks inclusion and community spirit.

A commonly repeated allegation in our data is that communality is disintegrating. For example, some long-time residents of Ristinummi relayed that their neighbourhood's adolescents used to side with each other in the 80s, but no longer do (CUPL 23/02/2021, Speaker 5). In terms of ANT, this means that some connections, roles or established patterns of activity in a communality network have been broken. These informants added that whilst residents' solidarity has decreased, independent initiative that used to be strong has also vanished (CUPL 23/02/2021, Speaker 6). Various reasons for the decline of community spirit were mentioned, such as time consumed on social media (CUPL 23/02/2021, Speaker 6), language barriers in a diverse and multicultural neighbourhood (INTV 22/09/2020), and the high turnover of tenants (INTV 16/11/2020).

Although the decline of community spirit is usually something that those living in the area can experience, the physical appearance of the neighbourhood was also linked with the assumption of declining community spirit. For example, some older informants suggested that graffiti and general untidiness indicated damaged communality. They believed that communality was stronger in earlier times when there was no graffiti (INTV 25/08/2020). Thus, visual roughness and pictorial anarchy in a residential area are among the factors that push some residents out of their comfort zones

and cause them to believe that a major change in terms of communality has occurred. However, graffiti may be regarded as a territorial claim as well as a sign of identity construction. It is also a reaction to the majority's interpretation of communality.

Conclusions drawn from the existence of street art and graffiti may indeed vary among residents, as graffiti can be associated with vandalism by some (Ross 2016); however, some fashionable urban districts, such as Hackney Wick in London, have made street art part of their identity and sense of place (Evans 2016). It might be that especially older residents consider graffiti to be 'untidy', as street art has only recently become more socially acceptable. While for adolescents, the possibility of taking part in the graffiti culture may be an important way to strengthen their identity and contribute to place-making (Taylor, Pooley, and Carragher 2016). It is important to acknowledge that aesthetics are always political; by choosing to support local youth and graffiti artists by offering walls to paint on, city officers can simultaneously show support to the young locals while alleviating the anxiety of older citizens by bringing graffiti into a socially acceptable sphere.

We noticed a slight difference between the way good community spirit is described by residents and by city officials. For city officials, communality more often indicates something visible, easy to monitor and witness or an activity to attend. Thus, according to city officials, good community spirit is associated with activities, such as projects, festivals, markets, sports events and concerts taking place in the urban environment where large groups of people gather together. From the ANT perspective, local institutions such as churches, the Settlement Association, the European Union funded TEO employment project and the Student Housing Foundation in Vaasa are important actors because they offer services, peer groups and facilities for residents. By contrast, instead of describing events, residents of Ristinummi and the Olympia Quarter, especially those with migratory backgrounds, associated community spirit with mutual connectedness of neighbours. Residents also linked communal activities more often to specific locations, such as schools or club rooms, where people from different backgrounds can effortlessly meet each other.

4.2. Recollection

In our study, we found that the narration gestalt of recollection is strongly linked with nostalgic and romanticized ideas of how communities used to be in the past. This recollection has to do with the acknowledged difficulty, if not outright impossibility, of revitalizing and reinvigorating an idealized community. At the same time, nostalgia can create boundaries between those who share a common past and those who do not (Lewis 2016).

The stories of collapsing communality and nostalgic communality may also feed into each other. In our data, nostalgia functioned as a framework for acknowledging systemic changes and grievances about the present situation. For example, some of our informants painted rosy images of an ideal communality in country villages. Such communality included neighbourly help and borrowing tools, such as a saw for wood chopping (INTV 25/08/2020). Again, ANT focus on the value of agent roles and social networking is relevant here. Furthermore, it was pointed out that many blocks of flats used to have their own caretaker who was considered to be a communality-generating figure (INTV 25/08/2020). Now such caretakers have largely been replaced by faceless maintenance agencies, which is an example of a change that causes services to become distanced and at least partially out of reach of residents, in turn causing the feeling of weakened accessibility. As a result, residents felt less in control of their environment and less able to access necessary information.

Some resident informants pointed out that the bad reputation of Ristinummi was due to social welfare supported housing, such as council flats (INTV 12/02/2021). This might refer to hyperlocal problems, i.e. the problems that are centred on specific buildings or even a specific wing of a building, but could nonetheless imply an unspoken prejudice towards people who do not conform to the middle-class norm. This reflects how income level and predominant housing forms can impact the reputation of a residential area and its dwellers' social status in general (Hooks 2000).

As an indication of the lack of community spirit, the neighbourhoods' aesthetic features were also mentioned, including its untidiness. Our intersectional analysis revealed how educated and high-ranking officials perceive the same location, for example a hiding place for drug users, in vastly different ways than some local residents such as substance abusers. The hiding place is an important location for drug addicts and drinking groups to meet and socialize. City officials, on the other hand, saw the same place as an example of a degenerated and corrupt environment that must be remedied through social work and urban planning. This suggests that discourses on the need to develop a neighbourhood are strongly influenced by a range of intersectional characteristics and communality ideals in which people differ greatly depending on their roles and responsibilities.

Some informants mentioned that communality in Ristinummi was originally based on a working-class community created in the 70s when Strömberg, a Finnish company that made electromechanical products, constructed new blocks of flats for its employees (INTV 27/01/2021). Many industrial workers shared a relocation background as arrivals from rural areas to the city of Vaasa and the neighbourhood of Ristinummi. Specific blocks of flats, in which many Strömberg workers lived with their families, were central to the formation of a community. Some informants noted that in the early stages of Ristinummi, people helped each other build new houses in the area, and at that time leisure activities for various age groups flourished (INTV 25/08/2020). In their report on the cities of Plymouth and Bristol in the UK, Clarke, Gilmour, and Garner (2007) note that the nostalgic narratives of safe and integrative yet lost communities, were important for white middle-class and working-class citizens when asked to describe their understanding of community. Class identity, place and community do form a tight narrative union. It is also notable that community was understood as something ongoing and immutable, as some of our older informants had a positive view of the youth, viewing young people in the capacity of successors and continuators who preserve and maintain given traditions, rather than disrupt them (INTV 16/11/2020).

The nostalgic ideal for community described in our research is unitary and homogenous (white/Finnish speaking/working-class), and people living in the community are visibly active, playing outdoor sports and taking part in construction activities (INTV 25/08/2020). The depiction of people living in such recalled communities underlines their agency, reproducing an ideal community as a union of able-bodied, hardworking people. These accounts may indeed work as a glue between inhabitants, bringing them together with the shared oral history, but on the other hand, they may also exclude some groups that are not featured in the shared stories (Lewis 2016). As several informants with migratory backgrounds noted, opportunities to meet Finnish-speaking neighbours who would share stories of Ristinummi with them are non-existent (CUPL 10/05/2021).

Since the nostalgic recollection of the past is often linked to the area's history as a white working-class neighbourhood, it is in stark contrast to the reality of the multicultural and diverse area in the here-and-now. Whereas stories of a unitary community may have had an important social value at one time, the change of demographics and social structures may shift the function of these narratives from integrative to divisive. As the mental reproduction of idealized community has strongly affected the way the concept of community is perceived, the possibilities to formulate communality as something different are limited. This is seen in the double standard according to which the communities of populations with migratory backgrounds are considered dubious.

Whereas the nostalgic account of lost communities was seen as a model of community spirit, some respondents worried about existing communities formed by people with migratory backgrounds. Communities formed by different ethnic groups were linked to ethnic concentration (i.e. ghettoization) and were equated with low income, disadvantaged life situations and unemployment. Concentrated ethnic communities were even mentioned as weakening the reputation of the whole residential area (INTV 28/01/2021), yet the idealized, nostalgic neighbourhood of working-class, white Finns was never considered to represent a concentrated community in our data.

4.3. Segregation

Our informants described Ristinummi and the Olympia Quarter as deprived neighbourhoods and 'colourful' areas that are inhabited by immigrants (both first and second generation, thereby forming a heterogeneous group), students and the unemployed. We have also noted that community narratives are a way to create cohesion among neighbourhoods, point out deficiencies, set objectives, and create boundaries. Nonetheless, discursive acts that value certain communal activities over others may possibly fuel segregation, especially if the valuation of communal activity is linked with cultural essentialism, i.e. the view that certain characteristics of a culture are essential to the values of that ethnicity.

In our data, the discourses on family and community are often entangled, forming a foundation for the definition of a desirable community spirit. It is often the case that by defining a family and family life, the (ideal) community is defined. The status of Ristinummi and the Olympia Quarter as othered neighbourhoods is constructed through a narrative of the normalized way of living that is considered impossible to establish in these neighbourhoods:

> An average citizen: two children, a father, and a mother – an engineer and a nurse, would under no circumstances move to the Olympia Quarter. It is not seen as a good or safe place for families or, so to speak, the working population that live a so-called 'normal life'. Ristinummi is not a homogenous area, but there are places where people want to live. There is this residential area with beautiful houses where people can live a very good life. Then there is the apartment block area where one does not really want to move in. (INTV 19/01/2021)

In the above account, the normalized lifeway is depicted through the narrative of a heterosexual, nuclear family with two parents with stable incomes. Furthermore, the family is seen as able to lead a good life in a residential area, implying that owning a house is a part of the normalized way of living. The Olympia Quarter and some areas of Ristinummi were described as places where normal (*sic*) families could not lead a good life, as these places were unlikely to be safe or otherwise desirable places to live.

Some of our informants identified a high turnover of tenants as a reason for decreased communality (INTV 16/11/2020). Living in a rented flat on a continuous basis was considered 'socially suspicious' by some of the informants, which may imply possible prejudice against people with lower incomes. Again, the ANT's underlying premise is that people playing different roles with different characteristics create a web of social relations that is more significant than any of its parts. In this case, tenants form a social group that is considered an important factor in explaining the absence of the neighbourhood's communality. It was also noted that the students' willingness to be part of the local community may be lessened, by the fact that most, if not all of them, live in a student apartment (in the Olympia Quarter) for only a relatively short period of time (INTV 11/02/2021). This highlights the intersectionality of the tenant role, where the short-term nature of housing and its life-stage reasons (e.g. studying) are seen to coincide. Furthermore, our data suggests that stability and longevity of occupants is considered important for community spirit to grow.

As previously stated, some informants pointed out that despite the general decline of communality, it remains strong in immigrant families, which can be seen, for example, in large families regularly getting together for dinner (INTV 05/02/2021). It was further indicated that communities varied in size depending on the origin countries and cultures. Hence, these respondents assumed that communities (e.g. ethnic and other local communities) in Finland are relatively small compared to communities in more populous countries (INTV 05/02/2021). It was also suggested that people of different ages and cultural backgrounds have their own forms of communality (CUPL 03/06/2021, Speaker 1). Language, once again, is a major divider or potential intersection: locally Finnish-Swedish and universally all minorities speaking their own language without the ability to fully participate in the majority population's everyday life and culture. In these reports, the accounts of family function are integral drivers that determine the extent of communality among neighbours. People with migratory backgrounds were also considered to be essentially communal,

as the capacity for creating a strong sense of community is thought to be inherent to their culture. This narrative, echoing cultural essentialism (see e.g. Grillo 2003; Grillo 2008), maintains the view that inhabitants with migratory backgrounds are different from the native population.

The valuation of one lifeway over another affects the way communities are treated and the kinds of services that are targeted to the area. Local government officials also reported that immigrants have their own idea of communality and suggested that this has not helped them to integrate with the native population (INTV 26/01/2021). As a remedy for ethnic concentration, some respondents proposed that communal living of ethnic minorities should be avoided by means of social mixing. However, no evident consensus exists on social mixing being an effective way to solve structural problems, such as poverty and unemployment (Cheshire 2012). On the contrary, social mixing often seems to be a cosmetic policy, as it is rarely recommended for wealthier neighbourhoods that may be socially homogenous as well (Lees 2008). The notion of social mixing does not consider that people with migratory backgrounds form a heterogeneous group representing various life stages and multiple ethnic, cultural and religious backgrounds. Furthermore, displaced people may experience their new neighbourhood negatively if they experience loss of social ties in the process (Doff 2010).

Nevertheless, according to our data, communities within the Ristinummi and Olympia Quarter already show signs of ethnic segregation. Several respondents with migratory backgrounds reported that they felt that they were not full members of the local community (cf. McMillan and Chavis 1986). A person who belongs to a particular immigrant community in Ristinummi shared that communities in her neighbourhood are formed based on ethnic background and that while local immigrant groups have strong community spirit, they rarely meet their Finnish neighbours (CUPL 10/05/2021, Speaker 3). This notion was repeated in several responses by residents with migratory backgrounds stressing the division between the Finnish-speaking population and the population with a migratory background.

This division was considered to be a disadvantage. Ethnic minorities especially emphasized that the lack of proper meeting places limits the possibility of forming social cohesion between ethnic minorities and native Finns. Several people with migratory backgrounds also noted that the evanescence of public services, such as club rooms, youth clubs and gyms, makes it difficult, especially for children and young adults, to meet with native Finnish-speakers (CUPL 05/11/2021).

It is notable that while the non-resident respondents (i.e. city officials and local politicians) proposed breaking up the non-white communities as a means to create a heterogeneous population structure, residents with migratory backgrounds more frequently suggested *including* white, Finnish-speaking people in the already existing neighbourhood as a solution. Those with diverse ethnic backgrounds more often suggested that the obstacles to enhancing the sense of community in the neighbourhood were due to the lack of proper infrastructure in the form of meeting places. From their perspective, the problems were structural, whereas Finnish-speaking respondents more often suggested that difficulties in forming a cohesive community were cultural and lingual.

5. Conclusion

In this article, we have analysed the ways in which residents and authorities narratively construct, from their different standpoints, two suburban areas and their communities in Vaasa, Finland. Through this analysis, we have enriched and dynamized Tönnies (2001) understanding of community by considering, in addition to the *Gemeinschaft/Gesellschaft* distinction, the perspective of intersectionality. In our analysis, the authorities' and native population's view of (ideal) communality is oriented towards *Gesellschaft,* or society and its services.

Our research team devised the term 'communality' in order to facilitate intersectional analysis. The concept of communality enabled us to focus on various intersections of individuals' characteristics relevant to their sense of community, such as local institutions, environment and residency, which again were brought together with the narration gestalts of inclusion, recollection and

segregation. We observed that the intersectional characteristics of our informants undermined and reduced their social position and capabilities of versatile participation and interaction in the target neighbourhoods. We also concluded that intersectionality is connected to environmental opportunities and affordances, which manifest themselves interdependently in educational or ethnical backgrounds of residents, and more generally, to residents' other capabilities such as physical or psychological restrictions.

During this research project, an intersectional approach proved to be useful for illuminating underlying biases in urban planning and public opinion on the neighbourhoods studied (Baylina Ferré and Rodó-de-Zárate 2016; Castán Broto and Alves 2018). With reference to our research questions, we were able to track stereotyping narratives and stigmatizing discourses that reflected the residents' understandings of communality and affected their ideas on the target neighbourhoods and their development. Additionally, these narratives and discourses were recognized as affecting the way the city areas are further developed and how the residents are seen in the public debate (Blidon 2018; Collins 2015; Garcia 2016; Nightingale 2011; Phoenix and Pattynama 2006).

In our data, the term 'communality' was used in varying ways. For residents, communality was experienced in contact with their friends, families, and neighbours on a daily basis. In addition, if lack of communality was reported, it was often seen to be a result of inadequate urban planning and the shortage of public places for people to gather. Furthermore, for outsider-observers (e.g. city officials), communality was something to witness, not to experience. It was also articulated as part of the identity of the place, rather than as daily connections with neighbours. At the same time, local institutions are essential for establishing communal spaces and diverse situational opportunities for residents.

An intersectional analysis of the data illuminated how, by questioning the level of communality, the residential area is othered and stigmatized as deprived, which may lead to denouncement of the persons inhabiting the place as well (Vietinghoff 2021). As communality was seen as something that would elevate the status of the area among the 'normal' people, the inherent idea of desirable communality as Finnish-speaking middle-class was revealed. This indicates that the discourse of communality includes structurally segregated features. The nostalgic notion of (white) communality is seen as desirable and safe. To the contrary, communities of ethnic minorities are regarded with suspicion and considered to be something that should be dissolved, or at least diluted. The tone of these notions is dependent on whether they arise from inside or outside of the communities themselves. This structural and covert racism greatly affects both the possibilities and the courage needed to talk about community in general or to strive for communality.

Based on our analysis, the following narration gestalts explaining communality in a neighbourhood can be distinguished: *inclusion, recollection and segregation*. Inclusion represents a functionalist understanding that emphasizes gathering for social events, on activities and services that require a home base, such as a specific building or outdoor area. Many concrete examples were mentioned as being important for residents, such as disc golf parks, outdoor fireplaces, and heated spaces for spending time with friends. This understanding also emphasizes communality as something that is easy for outsiders to monitor and needs organization and timely investments. At the same time, this discourse lacks understanding of more intimate forms of communality with a low threshold to interact with one's neighbour, such as casual chatting and shared social media groups.

The narration gestalt of *recollection* pays attention to how nostalgic accounts were produced and consists of stories from the 'golden era' of the local community. Repeatedly, the contrast of the past to the present was added to express grievances. Thus, nostalgic narratives frequently functioned as a frame supporting the account of collapsing communality. The areal history as a unitary, white and working-class neighbourhood was often mentioned, and communal activities, such as sport competitions and collective building projects, were mentioned, depicting nostalgic community as visible and active and emphasizing the able-bodiedness of inhabitants.

Entangled with the narrative of collapsing communality, the description of nostalgic community stands out. The discourse that produces the understanding of local communality as diminished is,

in our research, linked to the feeling of change, the change of aesthetics, infrastructure and population mobility in an area. An underlying, normative narrative that good community is formed by stable, middle-class people owning their homes is implicitly present, as people living in rental apartments were considered to weaken the community spirit.

In the third category of communality narrations, we discussed community as segregated or people displaced within the community. This narrative category is linked to the stereotyping discourse of ethnic minorities and cultural essentialism, transmitting accounts of immigrant communities as concentrated and problematic. Behind this narrative, the implicit discourse of normative family structure can be found, promoting the middle-class nuclear family as a norm that people living in the area are unlikely to meet.

The narrative structures listed here overlap and are in constant interplay with each other. Together they produce an idealization of community, the side effects of which include othering and marginalization of certain residential areas and their populations. Accordingly, the narrative structures may also produce expectations that are difficult to meet, fostering the tales of a collapsing community even further. It is important to identify this kind of internalized account in order to be able to produce policies that do not strengthen already hegemonic narratives that favour people in privileged positions (Castán Broto and Alves 2018; Vietinghoff 2021). The creation of versatile imageries and the development of multiple understandings of community living are needed in order to enhance the idea of community as a diverse and mutable entity.

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References

Anderson, B. 2006. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. rev ed. London: Verso.

Anderson, B., and P. Harrison, eds. 2010. *Taking-Place: Non-Representational Theories and Geography*. London: Routledge.

Arias-Maldonado, M. 2013. "Rethinking Sustainability in the Anthropocene." *Environmental Politics* 22 (3): 428–446. https://doi.org/10.1080/09644016.2013.765161.

Austin, J. L. 1975. *How to Do Things with Words*. 2nd ed. Cambridge, MA: Harvard University Press.

Back, L. 1996. *New Ethnicities and Urban Culture: Racism and Multiculture in Young Lives*. London: UCL Press.

Barad, K. 2007. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham: Duke University Press.

Baylina Ferré, M., and M. Rodó-de-Zárate. 2016. "New Visual Methods for Teaching Intersectionality from a Spatial Perspective in a Geography and Gender Course." *Journal of Geography in Higher Education* 40 (4): 608–620.

Bennett, J. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press.

Blidon, M. 2018. "Reception and use of Intersectionality. A Reading from French Perspective." *Gender, Place & Culture* 25 (4): 591–602. https://doi.org/10.1080/0966369X.2018.1457015.

Bourdieu, P. 1986. "The Forms of Capital." In *Handbook of Theory and Research for the Sociology of Education*, edited by John Richardson, 241–258. Westport, CT: Greenwood.

Brock, S. 2009. "Changing the Mind of the City: Preparing the Public Sector for a Multicultural Society." *Where Strangers Become Neighbours: Integrating Immigrants in Vancouver, Canada*, edited by Leonie Sandercock, and Giovanni Attili, 67–112. Dordrecht: Springer.

Brosché, J. 2023. "Conflict over the Commons: Government Bias and Communal Conflicts in Darfur and Eastern Sudan". *Ethnopolitics*. https://doi.org/10.1080/17449057.2021.2018221.

Bürk, T., M. Kühn, and H. Sommer. 2012. "Stigmatisation of Cities: The Vulnerability of Local Identities." *Raumforschung und Raumordnung* 70 (4): 337–347.
Castán Broto, V., and S. N. Alves. 2018. "Intersectionality Challenges for the Co-Production of Urban Services: Notes for a Theoretical and Methodological Agenda." *Environment and Urbanization* 30 (2): 367–386. https://doi.org/10.1177/0956247818790208.
Cheshire, P. 2012. "Are Mixed Community Policies Evidence Based? A Review of the Research on Neighbourhood Effects." In *Neighbourhood Effects Research: New Perspectives*, edited by Maarten van Ham, David Manley, Nick Bailey, Ludi Simpson, and Duncan Maclennan, 267–294. Dordrecht: Springer.
Chu, C., and A. E. Martin. 2021. "The Primacy of Communality in Humanization." *Journal of Experimental Social Psychology* 97: 104224. https://doi.org/10.1016/j.jesp.2021.104224.
Clarke, John. 1976. "Style." In *Resistance Through Rituals: Youth Subcultures in Post-War Britain*, edited by Stuart Hall, and Tony Jefferson, 175–191. London: Routledge.
Clarke, S., R. Gilmour, and S. Garner. 2007. "Home, Identity and Community Cohesion." In *Identity, Ethnic Diversity and Community Cohesion*, edited by Margaret Wetherell, Michelynn Lafleche, and Robert Berkeley, 87–101. London: SAGE Publications.
Collins, P. H. 2015. "Intersectionality's Definitional Dilemmas." *Annual Review of Sociology* 41 (1): 1–20.
Crenshaw, K. 1989. "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory, and Antiracist Politics." *University of Chicago Legal Forum* 8 (1): 57–80.
Cresswell, T. 2010. "New Cultural Geography – An Unfinished Project?" *Cultural Geographies* 17 (2): 169–174. https://doi.org/10.1177/1474474010363845.
Crutzen, P. J., and E. F. Stoermer. 2000. "The 'Anthropocene'." *Global Change Newsletter* 41: 17–18.
Datta, A. 2007. "'Samudayik Shakti': Working-Class Feminism and Social Organisation in Subhash Camp, New Delhi." *Gender, Place & Culture* 14 (2): 215–231. https://doi.org/10.1080/09663690701213818.
Doff, W. 2010. *Puzzling Neighbourhood Effects: Spatial Selection, Ethnic Concentration and Neighbourhood Impacts*. Amsterdam: IOS Press / Delft: Delft University Press.
Egorova, T. D., N. S. Ivanova and E. A. Varshaver. 2020. "Formation of Immigrant Neighbourhoods in Sweden: A Case-Study of Rinkeby, Stockholm." *Journal of Siberian Federal University. Humanities & Social Sciences*, 13(7): 1112–1125. https://doi.org/10.17516/1997-1370-0629
Elder-Vass, D. 2012. *The Reality of Social Construction*. Cambridge: Cambridge University Press.
Eriksson, M. 2008. "(re)Producing a "Peripheral" Region – Northern Sweden in the News." *Geografiska Annaler: Series B, Human Geography* 90 (4): 369–388. https://doi.org/10.1111/j.1468-0467.2008.00299.x.
Evans, G. 2016. "Graffiti Art and the City: From Piece-Making to Place-Making." In *The Routledge Handbook of Graffiti and Street Art*, edited by Ross Jeffrey Ian, 168–182. London: Routledge.
Farías, I., and T. Bender, eds. 2010. *Urban Assemblages: How Actor-Network Theory Changes Urban Studies*. London: Routledge.
Friedman, S. S. 1998. *Mappings: Feminism and the Cultural Geographies of Encounter*. Princeton, NJ: Princeton University Press.
Garcia, L. 2016. "Intersectionality." *Kalfou: A Journal of Comparative and Relational Ethnic Studies* 3 (1): 102–106.
Gerell, M., M. Puur, and N. Guldåker. 2022. "Swedish Conditions? Characteristics of Locations the Swedish Police Label as Vulnerable." *Nordic Journal of Urban Studies* 2 (1): 40–62. https://doi.org/10.18261/njus.2.1.3.
Ghaziani, A. 2014. *There Goes the Gayborhood?* Princeton, NJ: Princeton University Press.
Gorbunova, L. A., J. Ambrasat, and C. von Scheve. 2015. "Neighborhood Stereotypes and Interpersonal Trust in Social Exchange: An Experimental Study." *City & Community* 14 (2): 206–225. https://doi.org/10.1111/cico.12112.
Gordon, I., D. hristie, and K. Robinson. 1989. "Social Class as Indicated by Area of Residence: A Mortality Study Within an Australian Industrial Population." *Community Health Studies* 13 (2): 170–176. https://doi.org/10.1111/j.1753-6405.1989.tb00194.x.
Gren, M. 1994. *Earth Writing. Exploring Presentation and Social Geography in-Between Meaning/Matter*. Göteborg: Department of Geography, University of Gothenburg.
Grillo, R. D. 2003. "Cultural Essentialism and Cultural Anxiety." *Anthropological Theory* 3 (2): 157–173. https://doi.org/10.1177/1463499603003002002.
Grillo, R. D. 2008. *The Family in Question: Immigrant and Ethnic Minorities in Multicultural Europe*. Amsterdam: Amsterdam University Press.
Gusfield, J. R. 1975. *Community: A Critical Response*. New York: Barnes & Noble.
Heidegger, M.. 1971. *Poetry, Language, Thought (Building, Dwelling, Thinking*). Trans. A. Hofstadter. New York: Harper & Row.
Hooks, B.. 2000. *All About Love: New Visions*. New York: William Morrow.
Jackson, P. 2016. "New Directions in Cultural Geography Revisited." *Area* 48 (3): 367–370.
Jacobs, J. 1961. *The Death and Life of Great American Cities*. New York: Random House.

Jørgensen, T.B., and B. Bozeman. 2007. "Public Values." *Administration & Society* 39 (3): 354–381. https://doi.org/10.1177/0095399707300703.
Jupp, E. 2021. "The Time-Spaces of Austerity Urbanism: Narratives of 'Localism' and UK Neighbourhood Policy." *Urban Studies* 58 (5): 977–992. https://doi.org/10.1177/0042098020929503.
Klinenberg, E. 2012. *Going Solo: The Extraordinary Rise and Surprising Appeal of Living Alone*. New York: The Penguin Press.
Kohon, J. 2018. "Social Inclusion in the Sustainable Neighborhood? Idealism of Urban Social Sustainability Theory Complicated by Realities of Community Planning Practice." *City, Culture and Society* 15: 14–22. https://doi.org/10.1016/j.ccs.2018.08.005.
Kurban, F., and J. Tobin. 2009. "'They Don't Like Us': Reflections of Turkish Children in a German Preschool." *Contemporary Issues in Early Childhood* 10 (1): 24–34. https://doi.org/10.2304/ciec.2009.10.1.24.
Latour, B. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
Lees, L. 2008. "Gentrification and Social Mixing: Towards an Inclusive Urban Renaissance?" *Urban Studies* 45 (12): 2449–2470. https://doi.org/10.1177/0042098008097099.
Lehtonen, T. 2015. "Cultural Boundaries: Imaginary or Real?" In *Borders Under Negotiation*, edited by Daniel Rellstab, and Nestori Siponkoski, 46–55. Vaasa: VAKKI.
Lejano, R., M. Ingram, and H. Ingram. 2013. *The Power of Narrative in Environmental Networks*. Cambridge: The MIT Press.
Lejano, R. P., A. P. Lejano, J. D. Constantino, A. J. P. Almadro, and M. Evaristo. 2018. *Narrative, Identity, and the City: Filipino Stories of Dislocation and Relocation*. Amsterdam: John Benjamins Publishing Company.
Lewis, C. 2016. "'Regenerating Community'? Urban Change and Narratives of the Past." *The Sociological Review* 64 (6): 912–928.
Lockwood, T., N. T. Coffee, P. Rossini, T. Niyonsenga, and S. McGreal. 2018. "Does Where You Live Influence Your Socio-Economic Status?" *Land Use Policy* 72: 152–160. https://doi.org/10.1016/j.landusepol.2017.12.045.
Lundström, C. 2010. "'Concrete Bodies': Young Latina Women Transgressing the Boundaries of Race and Class in White Inner-City Stockholm." *Gender, Place & Culture* 17 (2): 151–167. https://doi.org/10.1080/09663691003600280.
McMillan, D. W., and D. M. Chavis. 1986. "Sense of Community: A Definition and Theory." *Journal of Community Psychology* 14 (1): 6–23.
Mirzoev, T., K. I. Tull, N. Winn, G. Mir, N. V. King, and J. M. Wright. 2022. "Systematic Review of the Role of Social Inclusion Within Sustainable Urban Developments." *International Journal of Sustainable Development & World Ecology* 29 (1): 3–17. https://doi.org/10.1080/13504509.2021.1918793.
Nightingale, A. J. 2011. "Bounding Difference: Intersectionality and the Material Production of Gender, Caste, Class and Environment in Nepal." *Geoforum; Journal of Physical, Human, and Regional Geosciences* 42 (2): 153–162. https://doi.org/10.1016/j.geoforum.2010.03.004.
Nylén, J. 2023. "Väestökehitys, Vieraskieliset ja Työttömyysaste Ristinummen ja Vöyrinkaupungin Suuralueilla" (Population Development, Foreign Language Speakers, and Unemployment Rates in Ristinummi and Vöyrinkaupunki). City of Vaasa, June 2023. Unpublished report.
Phoenix, A., and P. Pattynama. 2006. "Intersectionality." *European Journal of Women's Studies* 13 (3): 187–192. https://doi.org/10.1177/1350506806065751.
Potter, J., and M. Wetherell. 1987. *Discourse and Social Psychology: Beyond Attitudes and Behaviour*. London: SAGE Publications.
Putnam, R. D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
Ross, J. I. 2016. "Introduction: Sorting It All Out." In *The Routledge Handbook of Graffiti and Street Art*, edited by Ross Jeffrey Ian, 1–10. London: Routledge.
Salimi, M., M. Foroutan, and A. Naghdi. 2019. "Analyzing Social Cohesion in Open Spaces of Multiethnic Poor Neighborhoods: A Grounded Theory Study." *Journal of Architecture and Urbanism* 43 (1): 1–13. https://doi.org/10.3846/jau.2019.6849.
Sandercock, L. 2003. *Cosmopolis II: Mongrel Cities in the 21st Century*. London: Continuum.
Short, J. R. 2021. "Social Inclusion in Cities." *Frontiers in Sustainable Cities* 3: 684572. https://doi.org/10.3389/frsc.2021.684572.
Staszak, J-F. 2009. "Other/Otherness." In *International Encyclopaedia of Human Geography*, vol. 8, edited by Rob Kitchin, and Nigel Thrift, 43–47. Oxford: Elsevier.
Stedman, R. C. 2003. "Is It Really Just a Social Construction? The Contribution of the Physical Environment to Sense of Place." *Society & Natural Resources* 16 (8): 671–685. https://doi.org/10.1080/08941920309189.
Taylor, M. F., J. A. Pooley, and G. Carragher. 2016. "The Psychology Behind Graffiti Involvement." In *Routledge Handbook of Graffiti and Street Art*, edited by Ross Jeffrey Ian, 194–203. Abingdon, OX: Routledge.
Thrift, N. 2008. *Non-Representational Theory: Space, Politics, Affect*. London: Routledge.
Tönnies, F. 2001. *Community and Civil Society*. Cambridge: Cambridge University Press.
Turner, J. H. 2005. *Sociology*. Englewood Cliffs, NJ: Prentice-Hall.

Vaattovaara, M., V. Bernelius, A. Joutsiniemi, M. Kortteinen, S. Iltanen, T. Jama, O. Rönnberg, I. R. Lobato, and M. Page. 2023. *Re:Urbia: Loppuraportti*. https://www.helsinki.fi/assets/drupal/2023-03/ReURBIA_PRE-PRINT_20230307-compressed.pdf (cited 19/04/2023).

van der Wal, Z., G. de Graaf, and K. Lasthuizen. 2008. "What's Valued Most? Similarities and Differences Between the Organizational Values of the Public and Private Sector." *Public Administration* 86 (2): 465–482. https://doi.org/10.1111/j.1467-9299.2008.00719.x.

Väyrynen, T. 1998. "Ethnic Communality and Conflict Resolution." *Cooperation and Conflict* 33 (1): 59–80. https://doi.org/10.1177/0010836798033001003.

Vietinghoff, C. 2021. "An Intersectional Analysis of Barriers to Cycling for Marginalized Communities in a Cycling-Friendly French City." *Journal of Transport Geography* 91 (3): 102967. https://doi.org/10.1016/j.jtrangeo.2021.102967.

Vogiazides, L., and H. Mondani. 2023. "Neighbourhood Trajectories in Stockholm: Investigating the Role of Mobility and In Situ Change." *Applied Geography* 150: 102823. https://doi.org/10.1016/j.apgeog.2022.102823.

Willett, J.. 2016. "The Production of Place: Perception, Reality and the Politics of Becoming." *Political Studies* 64 (2): 436–451. https://doi.org/10.1111/1467-9248.12179.

Willett, J. 2021. *Affective Assemblages and Local Economies*. London: Rowman & Littlefield.

Wilson, W. J. 2012. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. second edition. Chicago: Chicago University Press.

Inclusion in Innovation Districts: A Relational Perspective

Johanna Kalliokoski[1]

INTRODUCTION

Urbanization has increased rapidly in recent decades, and that growth is projected to continue (UN, 2018). While this development has brought prosperity to cities and nations, it has also been accompanied by multiple social and environmental challenges. A substantial body of research already exists in multiple streams on urban inclusion and social justice, including studies on inclusive cities (Liang *et al*., 2022; Zhao *et al*., 2025) and the right to the city and the just city concepts (Harvey, 2003; Fainstein, 2013). Prior research addresses multiple challenges to urban inclusion, including gentrification, segregation, and economic and social polarization (Harvey, 2003; Gerometta, Haussermann and Longo, 2005; Florida, 2017). Cities aim to counter these issues through inclusive development, planning, and policies such as community-led development, participatory planning, affordable housing and transport, fostering economic opportunities and training, and becoming accessible both physically and digitally (Armendaris *et al*., 2015; Liang *et al*., 2022; Morisson and Bevilacqua, 2019).

Concurrently, interest in knowledge-based urban development has increased during the so-called neoliberal turn of urban regeneration, placing innovation at the heart of cities (Weber, 2002). Cities use multiple strategies to enhance and support innovation, one of which is the innovation district (ID) (Yigitcanlar, Adu-McVie and Erol, 2020). Innovation districts are compact inner-city geographic areas encompassing universities, companies, entrepreneurs, and the public sector that

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are designed to enable innovation and encourage investment in a local innovation ecosystem (Katz and Wagner, 2014; Yigitcanlar, Adu-McVie and Erol, 2020). Simultaneously, inclusion has increasingly been recognized as a science, technology, and innovation policy objective, and may also refer to the involvement of various actors and organizations in innovation activities and processes, in addition to its traditional meaning of including marginalized groups (Kalliomäki *et al*., 2024).

This study examines IDs from the perspective of inclusion. Cities are both arenas of innovation and sites of social exclusion and the related challenges, making them a relevant context for observing the processes of inclusion and exclusion (Gerometta, Haussermann and Longo, 2005). Urban IDs, as intersections between urban and innovation policies, provide a unique research opportunity to scrutinize inclusion through their integrated urban planning approach (Kalliomäki, Oinas and Salo, 2024). This connection between IDs and inclusion has rarely been made except in very recent scientific contributions (Morales *et al*., 2025), as previous literature has criticized the exclusionary nature of IDs, while cities themselves are frequently viewed as nodes of neoliberal social tensions (Heaphy and Wiig, 2020; Kayanan, 2022; Kayanan, Drucker and Renski, 2022; Gerometta, Haussermann and Longo, 2005). Prior research literature has recognized the pressing need for more inclusive IDs and other innovation areas that can deliver enhanced public value (Battaglia and Tremblay, 2011; Esmaeilpoorarabi *et al*., 2020a, 2020b; Davidson *et al*., 2023; Lee, 2023). Based on the reviewed literature, I argue that examining inclusion in IDs requires a more holistic approach than is currently reflected (Pancholi, Yigitcanlar and Guaralda, 2019; Esmaeilpoorarabi *et al*., 2020a, 2020b; Lee, 2023). This need arises from the increasingly complex meaning of inclusion in both urban and innovation policies and research (Hu and Wang, 2019; Lee, 2023; Zhao, De Jong and Edelenbos, 2023; Kalliomäki *et al*., 2024). Therefore, this study employs relational theory to identify and assess the various dimensions of inclusion that should be considered in the context of IDs (Yeung, 2005). In this study, relational theory is primarily contextualized in its spatial dimension, deriving from the field of geography.

Previous research and policy have emphasized the importance of cross-sectoral cooperation and policy mixes to achieve more inclusive outcomes (Planes-Satorra and Paunov, 2017; Bramwell, 2021; Liang *et al*., 2022; Lee, 2023; Parsons *et al*., 2024). Adopting a cross-sectoral and holistic perspective on inclusion necessitates understanding the goals of inclusion from multiple interconnected viewpoints, which influence the socio-spatial experiences and opportunities that IDs can provide. Therefore, a relational viewpoint is essential. This necessity will be demonstrated through two case studies, with semi-structured

research interviews from Finland and Australia serving as the primary data sources. This study explores Melbourne Innovation Districts (hereafter MID) in Melbourne, Australia, and the Turku Science Park (hereafter TSP) in Turku, Finland. Melbourne Innovation Districts is a partnership between RMIT University, the University of Melbourne, and the City of Melbourne (MID, 2025). Turku Science Park is a spearhead project of the City of Turku (City of Turku, 2025a), which is being developed in collaboration with local stakeholders, including Business Turku and Turku Technology Properties.

Consequently, the research questions shaping this study are as follows:

1) How can inclusive innovation districts be conceptualized from a relational perspective?

2) How do the relational dimensions of inclusive innovation districts appear in the data?

Answering those questions advances the theory of IDs and inclusive urban development by recognizing them as relational phenomena. Relationality has been broadly discussed in the context of regional development and economic geography (see Yeung, 2004) and human geography (see Jones, 2009). Relations, interactions, and networks are also central to the regional innovation system (RIS) concept and literature (Stuck, Broekel and Revilla Diez, 2016), and the relational nature of urban innovation areas has been previously explored by, for instance, Battaglia and Tremblay (2011). Previous urban studies research addresses different dimensions of inclusion, including the spatial, economic, and social (Hu and Wang, 2019; Liang *et al*., 2022; Zhao *et al*., 2025). However, there is still a need for a relational conceptualization of inclusion in the specific context of IDs, as these districts are at risk of increasing exclusion in cities. Therefore, more knowledge is needed on how to develop these areas to be more inclusive and socially sustainable.

LITERATURE REVIEW

Although still a relatively new phenomenon, IDs have attracted a considerable volume of scientific research in disciplines such as economic geography and urban studies. That research has assessed IDs as place-based yet widely networked innovation systems, and scrutinized their form, function, and performance (Esmaeilpoorarabi *et al*., 2018; Pancholi, Yigitcanlar and Guaralda, 2019; Yigitcanlar, Adu-McVie and Erol, 2020; Adu-McVie *et al*., 2022). The literature is currently broadly aligned on IDs being compact inner-city geographic areas where large numbers of companies and knowledge-sector organizations have located, and where organizations can collaborate and innovate in a high-proximity, high-quality urban space, often in mixed-use

environments (Katz and Wagner, 2014; Wagner, Katz and Osha, 2019; Yigitcanlar, Adu-McVie and Erol, 2020).

Innovation districts are a new land-use type that combines characteristics of urban development and planning, economic growth strategies, innovation policy, and societal development (Yigitcanlar, Adu-McVie and Erol, 2020; Kalliomäki, Oinas and Salo, 2024). The original aspirations for IDs also included inclusive and sustainable development and growth (Katz and Wagner, 2014); however, studies have struggled to find evidence of IDs delivering on those goals (e.g., Heaphy and Wiig, 2020; Kayanan, 2022; Maalsen, Wolifson and Dowling, 2023). Kalliomäki, Oinas, and Salo (2024, p. 2) have classified IDs as strategic urban projects where "a need for integration of planning and innovation-driven economic development policies" manifests. These districts can have different types of governance structures, geographical definitions, and specializations, but most of them strive to take advantage of local economic, physical, and networking assets to boost innovative activities and economic development (Wagner, Katz and Osha, 2019). Some recent studies have also explored alternative framings for IDs, such as IDs focusing on social innovation (Fernandez and Bentley, 2022) and mission-oriented IDs for transformative change (Davidson *et al*., 2023; Fastenrath *et al*., 2023).

Defining Inclusion

Inclusion in urban settings is supported by a substantial body of scientific literature as well as policy documents developed by organizations such as the United Nations (UN), the World Bank, and the Organisation for Economic Co-operation and Development (OECD). There is no consensus on the exact definition of inclusion in literature, and the concept can be described as fuzzy (Lee, 2023). The World Bank has developed an inclusive cities framework that divides inclusion into spatial, economic, and social dimensions (Armendaris *et al*., 2015). Liang *et al*. (2022, p. 60) found "that inclusiveness is multidimensional and comprised of spatial, social, environmental, economic, and political dimensions in which the characteristics of participation, equity, accessibility, and sustainability are sometimes interwoven." Hu and Wang (2019) describe inclusiveness as a multidimensional concept that has acquired diverse meanings and theoretical grounds depending on, for example, the target group for inclusion and the different ways to operationalize urban inclusion. Bunnell (2019) states in the context of the New Urban Agenda that historically, inclusion has been easy to agree upon due to its positive connotations and vagueness. In addition to the different dimensions of inclusion, attention should be paid to issues such as agency, capacity building, and social capital to ensure that the intended policy

benefits can be realized by the recipients (Biswas, 2019; Thapa, Iakovleva and Foss, 2019; Klingler-Vidra and Liu, 2020).

In the context of innovation, inclusion plays a central role in concepts such as user innovation, citizen science, social innovation, and inclusive innovation. Additionally, mission-oriented innovation policy and the "third frame for science, technology and innovation policy" emphasize the active role of civil society in successfully implementing large-scale socio-technical changes to address the major challenges of our time, such as climate change (Schot and Steinmueller, 2018, p. 1558). The role of civil society and various publics is also central in the quadruple-helix model of innovation, which is derived from the preceding triple-helix model of innovative collaboration involving industry, the knowledge sector (e.g., universities), and the public sector (Carayannis and Campbell, 2009; Etzkowitz, 2003). Inclusion in terms of innovation activities and innovation areas can be approached from the perspectives of justice, equity, and the overall well-being of the urban population. Moreover, the concept can involve leveraging the talents of individuals from diverse backgrounds to benefit the innovation economy, highlighting the various ways the concept of inclusion can be applied and operationalized (Kalliomäki *et al*., 2024).

Previously, concepts such as the OECD's inclusive innovation policy framework have directed attention to how innovation policy can deliver benefits to wider society by focusing on inclusion (Planes-Satorra and Paunov, 2017). Inclusive innovation policy can be defined as policies designed to specifically "remove barriers to the participation of individuals, social groups, firms, sectors and regions that are underrepresented in innovation activities," as well as supporting the broader distribution of innovation benefits in society (Planes-Satorra and Paunov, 2017, p. 17). Similar to previous frameworks on urban inclusion, the OECD version identified social, economic, and territorial dimensions within inclusive innovation policy (Planes-Satorra and Paunov, 2017). It also suggests that the successful implementation of such a policy requires cross-sectoral cooperation among organizations responsible for public services, business, and education (Planes-Satorra and Paunov, 2017), an approach already evident in many IDs through their integrative development strategies aimed at advancing innovation. Lee (2023) analysed the potential of inclusive innovation as a policy framework for city governments and proposed a framework to guide its implementation: inclusive innovation in strategies, meaning, for example, decision-making; inclusive processes of innovation, meaning participation; and inclusive innovation outcomes. Lee (2023) also identifies three key challenges for inclusive innovation policy at the city level: fuzziness of the concept, neophilia, and insufficient local powers.

It is therefore observed that, at least in theory, IDs as cross-sectoral collaborative endeavours might have the potential to implement inclusive innovation policies, given applicable resources and intention (Bramwell, 2021; Parsons *et al*., 2024; Morales *et al*., 2025). However, that would require inclusion to be recognized from a relational perspective as an interconnected, multidimensional concept. In line with the views of the OECD (Planes-Satorra and Paunov, 2017), the work of Lee (2023, pp. 10–11) concludes, among other things, with a notion on policy mix: "the 'mix' of instruments which matter for inclusion will span innovation policy but also social policies, the law, policies governance, and so on. Inclusive innovation policy has more potential if embedded in a wider strategy of addressing disadvantage." The approach of policy mixing can be seen as aligning with the idea of relationality, bringing together perspectives that have traditionally been separated by silos. Given that relationality remains undertheorized in the context of inclusive innovation areas, developing a deeper understanding of its theoretical foundations and the conceptualization of IDs through a relational lens could support both academic research and the practical implementation of policies fostering impactful inclusion that counters disadvantage and provides opportunities for the broader urban population. Therefore, this study aims to conceptualize inclusive IDs from a relational perspective by developing an appropriate conceptual framework.

Inclusion and Innovation Districts

The exclusionary nature of IDs and other urban innovation areas is well-documented (Heaphy and Wiig, 2020; Esmaeilpoorarabi *et al*., 2020a; Kayanan, 2022; Kayanan, Drucker and Renski, 2022; Maalsen, Wolifson and Dowling, 2023). Heaphy and Wiig (2020) argued that these areas were largely designed to attract global technology firms and international talent, therefore mostly benefiting real estate and multinational companies without producing broader societal benefits. Kayanan, Drucker, and Renski (2022, p. 349) examined whether economic revitalization could be an inclusive strategy for IDs. Their analysis could not provide a definitive answer, and instead, the study raised questions about the evolution of public and private urban development and who the IDs serve on both small and larger scales. One of the notions proposed considers housing and how the *live, work, and play* aspirations of IDs may be contradictory when examining smaller firms and entrepreneurs who may not be able to afford trading space within the district, as well as people within the service industry with typically lower incomes (Kayanan, Drucker and Renski, 2022; Kayanan, 2022). This is a central notion considering that lively IDs depend on the active participation of both groups (Kayanan, Drucker and Renski, 2022). Kayanan (2022) continued the topic with a

critique of the ID concept and argued that IDs have not been able to deliver inclusive outcomes and have instead burdened entrepreneurs with the responsibility of city revitalization with limited support.

Other studies have explored inclusiveness as an element of IDs in terms of social integration (Pancholi, Yigitcanlar and Guaralda, 2019); policy responses to alleviate gentrification (Morisson and Bevilacqua, 2019); focus on citizen engagement and social innovation (Esmaeilpoorarabi *et al*., 2020a, 2020b; Fernandez and Bentley, 2022); and also as a mixed-use development for social integration (Gao and Lim, 2023). Social interaction and integration are crucial components of ID success, as a vibrant social life aids talent attraction and innovation processes in networks (Pancholi, Yigitcanlar and Guaralda, 2019). Morisson and Bevilacqua (2019) found that effectively implementing policies such as entrepreneurship and digitalization training for underrepresented and vulnerable societal groups, creating welcoming urban environments, and providing affordable housing can mitigate the effects of gentrification in IDs and foster the more equitable distribution of knowledge spillovers within the urban community. Gao and Lim (2023) propose incorporating a variety of land-use types, dispersed green spaces, and commercial and recreational areas, and diverse amenities connected to both residential and business zones. The study also highlights the importance of parks and green spaces between buildings to support social integration in IDs.

A recent study by Morales and others (2025) on IDs in Newcastle-upon-Tyne (England), Pittsburgh (USA), Belfast (Northern Ireland), and Medellín (Colombia) investigated the challenges of and opportunities arising from inclusive innovation in IDs. They highlighted the context-specific and locally formulated evidence-based meaning of inclusion in contrast to its previously argued fuzziness. In addition, the study identified essential elements of inclusive innovation for IDs—economic issues, health and well-being, gender perspectives, integration, poverty alleviation—and also education and climate adaptation (Morales *et al*., 2025). Further, in the context of IDs, the authors "define inclusive innovation as the co-creation of new ideas, practices or technologies with local communities, businesses and organisations to address societal challenges, ensuring equitable benefit distribution and fostering community empowerment" (Morales *et al*., 2025, p. 750). Inclusive innovation is inherently place-based, and policymakers should pay attention to outcome types, distribution of benefits, and community agency when designing inclusive innovation policy for IDs (Morales *et al*., 2025). The study also recognizes that tensions remain between inclusive aims and economic objectives within IDs (Morales *et al*., 2025).

The ID concept entails challenges for inclusive development that must be specifically managed. In summary, some well-recognized dimensions of inclusion, especially in the urban context, include spatial and territorial inclusion, such as housing (Armendaris *et al*., 2015; Planes-Satorra and Paunov, 2017; Liang *et al*., 2022; Lee, 2023); economic inclusion (Armendaris *et al*., 2015; Planes-Satorra and Paunov, 2017; Liang *et al*., 2022; Morales *et al*., 2025); social inclusion, interaction, and integration (Harvey, 2003; Fainstein, 2013; Armendaris *et al*., 2015; Planes-Satorra and Paunov, 2017; Morales *et al*., 2025); innovations that are more inclusive and have a positive impact on disadvantaged communities (Heeks *et al*., 2013; Planes-Satorra and Paunov, 2017; Lee, 2023); participation in innovation, networks, and social capital (Lee, 2023; Battaglia and Tremblay, 2011; Klingler-Vidra and Liu, 2020; Morales *et al*., 2025); and political participation (Liang *et al*., 2022). The role of green spaces and sustainability is also emphasized (Liang *et al*., 2022; Gao and Lim, 2023; Morales *et al*., 2025). As this chapter progresses, key lessons are carried over to the evolving domain of innovation-based development, which encompasses IDs. The concept of relationality in conceptualizing inclusion is discussed next, along with its implications for the current research.

Examining Inclusion Through the Lens of Relational Theory

Regarding space, relational thinking can be utilized to explore the multiple roles played by processes and objects in actively shaping the meaning of the environment in relation to one another (Murdoch, 2005; Yeung, 2005). Relational theory is often credited to Western scholars, but relationality has been a foundational principle within many Indigenous epistemologies and ways of living long before it entered the Western theoretical lexicon (see Tynan, 2021; Gould, Martinez and Hoelting, 2023). Yeung (2005, p. 44) suggest relationality in the context of economic geography be understood as "matrix-like interconnections" between different scales, structures, actors, and concepts, through which "each end of the binary achieves its meaning." In contrast to the traditional view of absolute space as a static container, relational space is a product of interrelations and interactions and is therefore dynamic and constantly in the process of making and becoming: "space is relational because objects exist only as a system of relationships to other objects" (Elden, 2009, p. 265). Space is, therefore, active in the production of socio-spatial lived experiences and interactions and is, in turn, changed by them.

Accordingly, given that IDs operate at the interface of urban, economic, and innovation policies, trying to understand inclusion within a single domain, such as economic, political,

social, or spatial aspects, might lead to unsatisfactory results (Lee, 2023). Instead, their interconnectedness and interdependence on socio-spatial experiences need to be accounted for. In addition, ID development is often linked to powerful actors, such as the public sector, universities, real estate businesses, and other private companies, including multinationals, making it essential to address matters of inclusion from a broader perspective of social sustainability.

Battaglia and Tremblay (2011, p. 1–2) adopted a relational approach to enhanced inclusiveness within IDs. The study highlighted a more integrated hybrid approach to ID governance in both spatial terms (geographical proximity of organizations) and "relational and institutional integration" (partnerships and synergy of local actors). They also highlight the role of relational proximity, as in "access to information networks and personal interactions in a given context", in addition to geographic proximity (Battaglia and Tremblay, 2011, p. 3). The role of different types of proximities in regional innovation, such as social and cognitive, and their relation to geographical proximity, has been previously explored by Boschma (2005). In this study, it was argued that "geographical proximity per se is neither a necessary nor a sufficient condition" for innovation or interactive learning, and instead a balance must be found in the amount of proximity, including social and cognitive (Boschma, 2005, p. 61).

Previous studies on social exclusion also demonstrate that individuals and groups can be burdened with multiple forms of disadvantage at the same time. Intersectional studies have shed light on how simultaneously belonging to more than one marginalized group creates additional barriers for inclusion in intersections of exclusion (Crenshaw, 1989) and how segregation processes may reinforce spatial, social, and economic exclusion (Armendaris *et al*., 2015; Florida, 2017). Policies designed to be inclusive may still fail to address the complex, underlying systems of exclusion, and merely disguise the symptoms (Lee, 2023). It is therefore proposed that attempts to enhance inclusion should also be viewed relationally, acknowledging the multiple lived experiences of people interacting with IDs, as well as the connections between different forms of disadvantage.

METHODOLOGY

This study employs a qualitative double-case study approach, with 15 semi-structured interviews conducted in 2023–2024 serving as the primary data source. The interviews followed a thematic outline, but each participant's expertise was explored further if required. Before data collection, participants received information about the study and data protection principles, and

guidelines for ethical research conduct were followed throughout the study. This study is exploratory rather than comparative in nature; informative cases were carefully selected to generate insights and extend understanding of how inclusion within IDs might be enhanced. Individuals with relevant information on IDs, urban exclusion and inclusion, social sustainability, or economic development were invited from Finland and Australia to participate in the interviews. The participants represent the knowledge sector, businesses, and the public sector, among others, and all were connected to one of the cases, so they were deemed to possess relevant information for the current study. The research was designed to ensure a diverse set of individuals (in terms of perspective and gender) were canvassed. Publicly available policy documents, along with statistical and geographic information, were reviewed to support the data analysis.

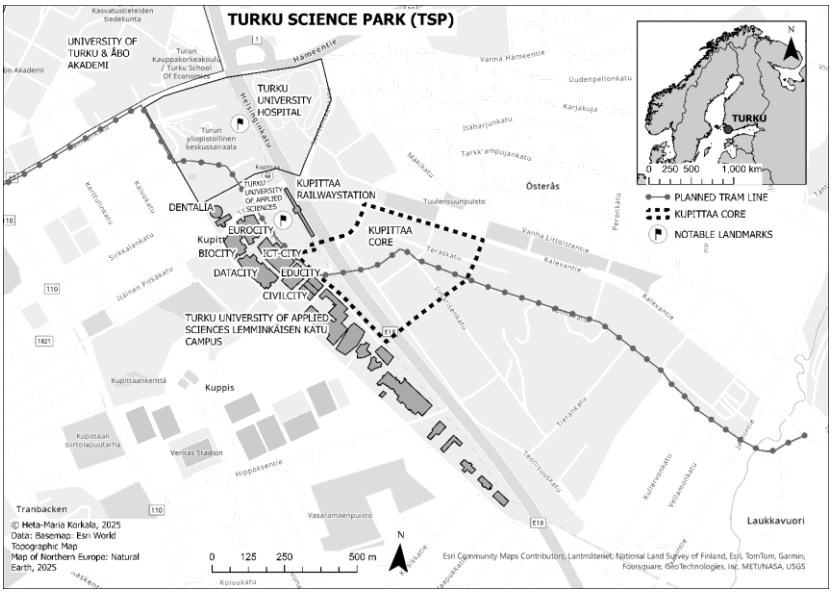
The coding of interview material followed a theory-driven inductive approach, wherein the dimensions of inclusion identified in the literature review served as an analytical lens for uncovering additional dimensions relevant to the ID context, the relational dynamics among them, and the overarching patterns they collectively form. As a result, ten dimensions for inclusion were extracted from the data: social, economic, digital, and spatial inclusion; capacity building; engagement of actors; inclusion in networks; inclusion in innovation; environment and sustainability; and inclusion in well-being. They emerged from the data intrinsically, as interviewees were allowed to elaborate on their views on inclusion quite freely, and both existing concepts as well as visions for the future were included in the results. These methods and data were selected due to the limited existing literature on inclusion and IDs.

The selected cases represent cities pursuing growth through innovation, despite facing some well-known urban challenges. Given their reputation for embodying a good quality of life, these contexts serve as meaningful points of examination for strategies aimed at creating more socially sustainable IDs. Furthermore, both cases have district renewal plans that are relevant to this study, as sustainability is highlighted as a priority in development. However, as some of the developments are still in the planning phase, future research will need to address the realized societal impacts of these endeavours. The cases serve as illustrative examples of how to utilize relational understanding of inclusion within IDs.

Turku Science Park

Finland is internationally recognized for its high standard of living, largely due to its welfare state model. However, recently Finnish cities have experienced increasing degrees of urban

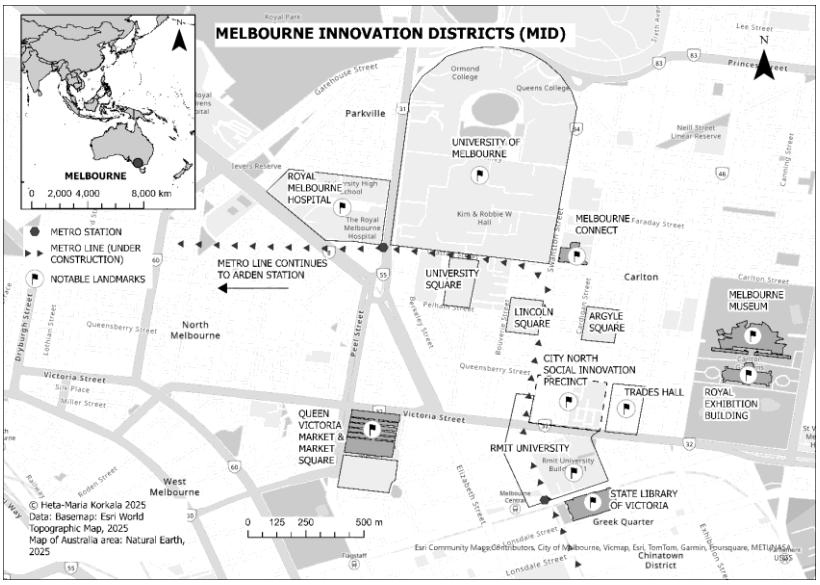
segregation, although the rate remains low in international terms (Bernelius and Huilla, 2021). Turku, a medium-sized city in Southwest Finland, is an exemplary case to illustrate this, as it currently has clear disparities among areas of socioeconomic difference (City of Turku and Ubigu, 2023). Turku Science Park is a spearhead project of the City of Turku, which has been developed as a type of ID throughout the 2010s (see Picture 1). Although the official policy language does not explicitly use the term *innovation district*, the characteristics of the area fit the international definition and can therefore be analysed as such (Kalliomäki, Oinas and Salo, 2024). The science park is projected to double in size as it expands into the nearby Itäharju industrial area with a new development called Kupittaa Core. Today, TSP hosts four higher education institutions, over 400 companies and businesses, Turku University Hospital, 40,000 higher education students, 11,000 residents, and 26,000 occupations (City of Turku, 2025b). As of now, the current TSP area is largely dominated by office buildings and other institutions, although there are no defined geographical boundaries. The key organizations developing the district include the City of Turku, Business Turku, and Turku Technology Properties. The population of Turku is around 200,000.



Picture 1. Turku Science Park (TSP). The Itäharju industrial area with the planned Kupittaa Core can be seen on the right side, and Turku University Hospital is located north of TSP. The tram line is part of the preliminary plans and is not yet officially approved and is therefore subject to change.

Melbourne Innovation Districts

The State Government of Victoria plays a central role in the urban planning and development of its state capital, Melbourne. In addition, central metropolitan Melbourne is governed by a local municipality, the City of Melbourne. Melbourne is known for its quality of life, ranking exceptionally well in the Global Liveability Index (The Economist Intelligence Unit Limited, 2023). However, Melbourne currently faces challenges not unfamiliar to other metropolitan cities, including inequality, social issues, and economic renewal (Fernandez and Bentley, 2022). The MID is a collaborative partnership between the City of Melbourne, RMIT University, and the University of Melbourne, and was established in 2017 (see Picture 2). It is located in the north of the Melbourne central business district (CBD), and while geographical boundaries are not strictly defined, the campuses of RMIT University and the University of Melbourne are within it, as well as, for instance, the State Library of Victoria, Melbourne Museum, and Queen Victoria Market. In addition, under the leadership of RMIT, a City North Social Innovation Precinct is being developed within the MID boundaries to address societal challenges together with citizens and stakeholders (RMIT, 2023). In 2023, around 177,400 people lived in the City of Melbourne, and over 5 million in the greater Melbourne area (City of Melbourne, 2023a; Australian Bureau of Statistics, 2023).



Picture 2. Melbourne Innovation Districts (MID), featuring notable institutions such as RMIT University and the University of Melbourne.

ANALYSIS AND RESULTS

The reviewed literature and interview data analysis prompted the author to create a conceptual framework (Figure 1) to help assess the different relational dimensions of inclusion in IDs. It illustrates how different dimensions are interconnected through relational understanding (Murdoch, 2005; Yeung, 2005). In addition, it acknowledges that in situations of intersecting disadvantage, such as social and economic, considering multiple dimensions simultaneously may be useful for more inclusive activities (Lee, 2023). Moreover, the importance of nature and sustainability, as well as the role of future generations, is highlighted. In addition, linking to neighbourhoods and regions further away through digital and transport connections is considered, as well as distributed innovation activities. It should be noted that, in addition to being based on previous literature (Battaglia and Tremblay, 2011; Heeks *et al*., 2013; Armendaris *et al*., 2015; Planes-Satorra and Paunov, 2017; Morisson and Bevilacqua, 2019; Klingler-Vidra and Liu, 2020; Liang *et al*., 2022; Gao and Lim, 2023; Lee, 2023; Morales *et al*., 2025; Zhao *et al*., 2025), the framework includes both already implemented activities as well as interviewee suggestions for more inclusive IDs. The ten dimensions are also defined and explained in Table 1.

Inclusion is a central strategy for all MID partners, although organizations mostly pursue their own interests. The City of Turku also prioritizes *osallisuus*, a Finnish term that is difficult to translate cleanly into English but is perhaps best rendered as *social inclusion*; however, TSP in its current form exhibits a disconnect from inclusion. This study does not claim to present a complete solution to exclusion within IDs, nor does it attempt to map all activities related to inclusion within the case districts. It does, however, direct attention toward a more socially sustainable perspective on district development. The following examples from the data illustrate how this framework helps map and evaluate various opportunities for inclusion and risks of exclusion, while accounting for their relational nature to support more inclusive innovation areas.

Table 1. The identified dimensions of inclusion for IDs

Dimension	**Definition**
Digital inclusion	The utilization of digital technologies to enhance public engagement within the district, and to connect to innovation activities occurring in surrounding areas; digital infrastructure, such as availability of Wi-Fi and computers

Spatial inclusion	Social and cultural spaces; welcoming and accessible public spaces; transport; housing; IDs acting as locations and connectors for cross-sectoral services and inclusive innovation activities, such as education and entrepreneurship support
Inclusion in innovation	Broadening the scope of innovation in IDs from traditional technology-dominant framings and definition toward more inclusive; Enhancing the role of social sciences, humanities, and local culture; the role of social innovation and community agency
Social inclusion	Reducing barriers for underrepresented communities to partake in activities within the ID, such as entrepreneurship; Non-discrimination; Support for social interaction
Inclusion in well-being	Access to healthcare facilities; ID environment that supports well-being
Capacity building	Education, opportunities for learning and personal development
Economic inclusion	Affordable commercial premises and trading spaces; Affordable housing; Diverse opportunities for employment and entrepreneurship, and related support services
Engagement of actors	Engaging diverse actors, such as citizens, third-sector organizations, businesses, and education institutions, in district development initiatives, civic participation, and dialogue with residents
Inclusion in networks	Enhancing opportunities to join collaboration, networking, and knowledge-sharing networks in the district
Environment and sustainability	Environmental sustainability and the role of nature; green spaces and vegetation; circular economy and similar initiatives; cultural sustainability

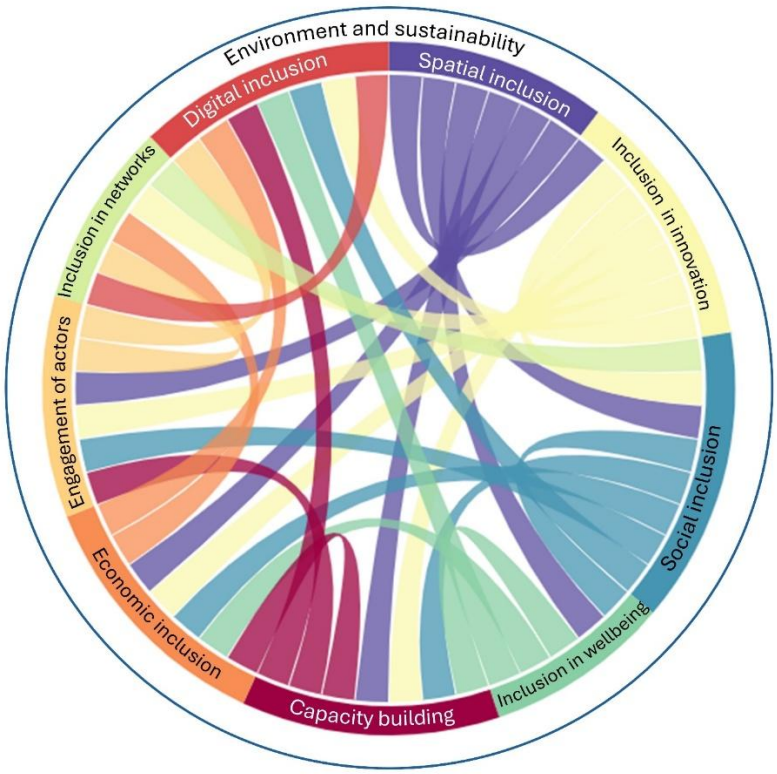


Figure 1. A conceptual framework that illustrates the multiple interconnected dimensions of inclusion within the innovation district context.

Social, economic, and spatial aspects of inclusion

In this study, particularly in its Australian context, interviewees acknowledged the potential of IDs to improve economic inclusivity by supporting entrepreneurs from disadvantaged and underrepresented groups, such as women, immigrants, marginalized communities, and Indigenous peoples (Morisson and Bevilacqua, 2019; Lee, 2023). This recognition stems from the identified barriers to inclusion in the innovation economy, as well as the need to harness the talents of diverse individuals. For instance, the LaunchVic initiative, which supports female entrepreneurs in Melbourne, was frequently mentioned. The need for financial and business premises support for entrepreneurs just starting out was also recognized. "*Now, that hasn't happened yet, but that's one of the ideas [...]. An example might be creating shop fronts to allow young entrepreneurs, maybe young people coming out of incubators with a start-up they want to develop, cheap space to use.*" (Interview 07, MID; Kayanan, 2022). An example of startup support in TSP is SparkUp, which has an open-to-all strategy and offers guidance and shared office premises free of charge.

Similarly, the employment of international students was deemed crucial in both contexts: "*The bias that prevents international students from obtaining employment as*

successfully [as native Finns] *[…], that, if anywhere, would be a place for an inclusive innovation policy*" (Interview 11, TSP). The previously recognized need to broaden the scope from job creation to address more systemic barriers of economic exclusion, such as societal discrimination, is also present here (Morales *et al*., 2025; Zhao *et al*., 2025). Given the connection between social and economic inclusion or exclusion, it is relevant to consider them relationally to enhance the lived experiences that IDs offer. Some interviewees also sought support for families and parents, particularly in terms of proximity to childcare facilities and schools within the districts. The density of IDs presents an opportunity to co-locate cross-sectoral employment and entrepreneurship services, which could facilitate a more seamless experience and lower the entry threshold for individuals with diverse life situations and backgrounds (Planes-Satorra and Paunov, 2017). Such an approach could broaden the range of visitors interacting within the district. This example also illustrates how innovation areas can support the advancement of more holistic inclusion through cross-sectoral policy mixes grounded in relationality, by serving as spatial nodes for such activities.

The spatial aspects of inclusion were a significant topic for the interviewees. Regarding the TSP, they noted the current lack of social and cultural spaces to promote community integration and activities. In MID, several interviewees expressed the need for a neutral, open space that would not be controlled by any of the key institutions. Such a space would facilitate and improve social interaction, integration and networking (Battaglia and Tremblay, 2011; Pancholi, Yigitcanlar and Guaralda, 2019). Respondents from both cities raised the importance of transport and connectivity to surrounding regions and neighbourhoods. For instance, IDs could serve the broader population by acting as connectors between schools and educational institutions throughout the city. In Melbourne, an initiative at the Science Gallery, recognized as the STEM Centre of Excellence[2], has leveraged partnerships to provide science education to children from disadvantaged schools:

> They come to experience a university campus differently through the innovation hub, and they come to engage with the science curriculum differently, using the resources of the gallery, which is focusing on the creative side of science and the intersections between art and science. […] working with disadvantaged schools to bring in students who may not otherwise come to an elite

[2] https://melbourne.sciencegallery.com/stem-centre-of-excellence (accessed 12/2025)

> university or may not aspire to go to an elite university. (Interview 07, MID).

Interviewee 11 from Finland commented in a similar way on how IDs could provide broader societal value through education. Such initiatives highlight the relational interconnectedness of various forms of support necessary for effective inclusion: socio-spatial, socioeconomic, and capacity-building dimensions. Encouraging children from diverse backgrounds to engage in science and entrepreneurship could yield long-term benefits for all. In TSP and Kupittaa Core, the forthcoming Taito Campus is seen as a significant initiative for integrating young people into the district. This vocational education institution plans to utilize the public realm in a hybrid building and offer services to the public by students in training (City of Turku, 2025c). This approach not only provides practical experience for the students but may aid in fostering a sense of community within the district (Interviews 01, 12, TSP).

In addition, creating public spaces and amenities that are welcoming to as broad a spectrum of people as possible can enhance the sense of belonging and is essential to any urban space aiming to be inclusive. This approach can help the wider population view the ID not merely as a cluster of offices for knowledge workers, but as a community resource (Interviews 11, 14; TSP). In the Kupittaa Core plans for Turku, one initiative aimed at achieving that is the 8/80 strategy, which envisions an urban environment that is safe and accessible for both 8- and 80-year-olds (Kupittaa Core Alliance, 2023). In addition, different user profiles are used to enhance the design's usability. Accessibility is also a key consideration: visually impaired people have been invited to contribute to ideation sessions to explore how auditory cues, such as recorded bird calls, could be used in specific locations to enhance navigability (Interview 12, TSP).

Housing affordability has emerged as a significant issue, particularly in Melbourne. Homelessness in Australia has become increasingly urbanized due to a shortage of affordable rental property (Batterham *et al*., 2022), and the CBD and MID areas of Melbourne also host people experiencing homelessness. Future plans for the Kupittaa Core aim to mitigate gentrification through a mix of housing tenures and a diverse, mixed-use urban environment. However, some interviewees were sceptical of the effectiveness of mixed tenures, citing uncertain correlations between tenure mix and social mix (e.g., Söderhäll and Fjellborg, 2024). As with most new residential developments in Turku, the Kupittaa Core area project is required to allocate 25% of its dwellings as family apartments with two or more bedrooms (City of Turku, 2024). A previous study by Sutela (2023) found that, compared to other large cities in Finland, Turku has not been as active in steering housing policy and markets. At the time of

writing, it remains unclear whether any new affordable housing is being developed in the vicinity of the new area. Despite these challenges, the need for affordable housing for students and individuals from diverse socioeconomic backgrounds is recognized (Heaphy and Wiig, 2020). From a relational perspective, this is essential for IDs that benefit from involving a diverse group of people in their operations. Combined socioeconomic and spatial barriers to participation in the innovation economy represent a loss for both individuals and organizations.

Spatial inclusion was also discussed in relation to the uneven development of different urban areas (Planes-Satorra and Paunov, 2017; Morales *et al*., 2025). In Melbourne, the urban experience differs significantly between residents of the city centre and those living in more distant suburbs: "*And there is a big difference between wealth and access to amenity in the City of Melbourne, as opposed to greater Melbourne, the suburbs*." (Interview 07, MID). The new metro tunnel was frequently mentioned as a means to improve access to the amenities and educational opportunities in the MID for suburban residents; similarly, interviewees in Turku mentioned plans for a new tram system. In Turku, some interviewees expressed concern about social sustainability across different parts of the city, particularly considering the increased segregation observed over the past decade (City of Turku and Ubigu, 2023). While initiatives such as the TSP and Kupittaa Core are widely recognized as important for the city's development, there was also a call to ensure that less developed areas are not left behind. The public sector is viewed as playing a crucial role in addressing this issue:

> When we are already in a situation where neighbourhoods differ, it is more difficult to get affordable housing to the more well-off areas due to the nimby effect [not in my backyard], and private investors will not get on board either, and simultaneously, private money doesn't want to invest in disadvantaged neighbourhoods (Interview 12, TSP).

The tension between economic objectives and inclusive (innovation) endeavours is therefore also evident in this study (Morales *et al*., 2025).

Well-being and sustainability

Another aspect discussed by the interviewees from various viewpoints was the role of sustainability in both environmental and cultural terms, as well as its support for well-being. In the TSP context, the interviewees mentioned initiatives such as planting native vegetation within the district and supporting local butterfly populations through thoughtful plant selection and

biodiversity efforts, highlighting including non-human entities in urban planning (interviews 04, 12, TSP). The plans for Kupittaa Core envisage environmental sustainability as a key focus, with an emphasis on the circular economy, cycling, walkability, green spaces, and public transport. The presence of health centers and hospitals was deemed important in both contexts. Melbourne, for instance, is home to a globally renowned medical precinct near the MID. Green spaces are highly valued in both cases and seen as benefiting both the natural environment and district residents. There are plans to enhance this aspect of the TSP via the Kupittaa Core, although the nearby Kupittaa Park is also a significant asset to the area, similar to the Carlton Gardens in Melbourne.

The multifaceted role of culture was highlighted in multiple instances as well:

> And RMIT, which also has a significant set of cultural assets, is also developing that cultural strategy. I think it's innovative in that it is linked to the work of the precinct. It is a mechanism for inclusion, it's a mechanism for attraction, and engagement of people who are living and working in the precinct. (Interview 07, MID).

From 2020 to 2021, a research project based in the TSP area brought interactive art into public spaces (Oinas *et al*., 2023). Despite the challenges posed by the pandemic, the project demonstrated that art can serve as both a tool and a medium for fostering social interaction. Preserving local culture, arts, and architecture was also recognized as contributing to the area's sustainability and appeal. This highlights the potential of cultural activities to foster various dimensions of inclusion and to synergize with ID initiatives in creatively supporting their attractiveness and long-term sustainability (Interview 11, TSP; Heaphy and Wiig, 2020).

Inclusion in networks and societal engagement

In addition to transport, the role of digital technologies in connecting surrounding areas was also discussed. The COVID-19 pandemic demonstrated the potential of these technologies to foster innovation and productivity, even in more remote locations, and it was suggested that this strategy could be directed more intentionally toward promoting inclusion:

> So, I think the challenge for innovation districts will be to serve the center and the regions, and to connect with each other. They really need to talk to each other and connect, and that is something that digital technology makes possible, but I think it's a different mindset too (Interview 07, MID).

Digital inclusion was also mentioned as a strategy with the potential to enhance public engagement in IDs. For instance, QR codes could be positioned in the public realm of the district to engage with current issues and recruit research participants. The potential of digitalization and virtual realities, particularly for engaging youth, was noted, with activities from Denmark serving as an inspiration. New schools and other developments could initially exist in virtual reality or as digital games, engaging young people interactively to gather their input (Interview 13, TSP). Attention should also be paid to building capacities and capabilities in digital technologies, which can serve as avenues for delivering societal value (Morisson and Bevilacqua, 2019). In Melbourne, residents have access to free city-wide Wi-Fi, and Telstra, a mobile service company, allows the public to use its payphones for free, which aids individuals experiencing homelessness, domestic violence, or other crises (City of Melbourne, 2025b; Corbin, 2023). A program that recycled computers for homeschooling use during the pandemic was also mentioned by interviewee 07 (MID). In sum, the role of digital technologies and related strategies was seen as important in bridging or overcoming the digital divide, as well as in enhancing civic engagement and regional collaboration.

Overall, the role of communication and community outreach was identified as an area needing improvement in both districts to increase inclusion. Connecting spatial inclusion with inclusion in innovation, places such as Melbourne Connect (MID) and the visitor centre Joki (TSP) were mentioned as important nodes for science exhibitions, social interaction, and as idea showcases for the wider public. Interviewees also envisioned the public realm being utilized more productively to showcase innovation:

> So that we would have different kinds of stands or platforms, where people could share their ideas, or where it would be visible [in the public realm] what is being developed here and people could comment on them, so that you don't always have to look for the information, but it would be visible just by entering the space (Interview 14, TSP).

Making these activities visible could also help highlight local strengths and differentiate the area from other business and office districts. This connects to what one interviewee said about collaboration and joint activities:

> A lot of people just can't seem to get their head around the idea that it's more than just putting some signage up and saying, 'this is the innovation district'. It's actually meant to be about what is going on there (Interview 08, MID).

The respondents were concerned that individuals might miss out on opportunities owing to a lack of information.

The inclusion of diverse actors in networks and their engagement is recognized as crucial (e.g., Battaglia and Tremblay, 2011; Hansasooksin and Tontisirin, 2020). This is understood as integrating various actors into the development and collaboration processes within districts (Lee, 2023), which include well-known theories of innovation such as the triple- and quadruple-helix models (Etzkowitz, 2003; Carayannis and Campbell, 2009), and also extend to democracy and civic participation (Heeks *et al*., 2013; Liang *et al*., 2022). One of the challenges identified in the TSP concerns social proximity, or rather the lack thereof, between the internal TSP community and urban residents:

> Anyone can come here and access services for business premises, information, or anything else, but this can also be a challenge. The community may appear so tight-knit that it is not easy to join the discussions, listen in, or ask for help. (Interview 03, TSP; Battaglia and Tremblay, 2011).

While acknowledging the importance of TSP, another interviewee also wondered how the actors within TSP measure the outcomes of their collaborative activities and the added value brought by the density (Interview 11, TSP). An interviewee from Melbourne had similar thoughts on the MID:

> We can't just draw a ring around everything we've done and say that's the product of the Melbourne innovation district, because what's the point of having it as an entity? It's not adding anything new, it's just claiming the work that people are already doing." (Interview 08, MID).

It was also mentioned that the scope of the collaboration could be broadened from an MID partner-centric approach to include other institutions and businesses (Interview 09, MID).

In terms of civic participation and democracy, it was clear that inclusion is a priority in all the partner institutions for respondents from Melbourne (see, for example, City of Melbourne, 2022). They also recognized this as increasingly important to the ID phenomena globally (Katz and Wagner, 2014; Esmaeilpoorarabi *et al*., 2020a; Davidson *et al*., 2023):

> We've known this before the pandemic, but it became even more apparent that an innovation district that excluded the general public and which, in a sense, was inaccessible to all sections of society would not work....and you can't expect it to evolve and change if you are not demonstrating broader public value and inviting the community in. (Interview 07, MID).

In TSP, and in the case of the City of Turku, several interviewees emphasized the need for greater horizontal collaboration and less siloed thinking, highlighting the importance of thematic

leadership that brings together diverse expertise to address increasingly complex societal challenges. For example, the Turku spearhead projects have aimed for more comprehensive and strategic planning and holistic development in the city across various domains (Kalliomäki, Oinas and Salo, 2024). Inclusion and innovation can be considered similarly.

Inclusion, public participation, and dialogue with residents were seen as important tools to support social sustainability and decision-making, as well as to create a sense of agency and ownership in the topics and solutions:

> So that we can create innovations and support economic development, it demands that we work together, in collaboration with residents and businesses …In public participation, a chance to influence the processes is central as well as the ownership and agency around it, and currently, it is only limited to the people who use [TSP] naturally (Interview 12, TSP).

When asked how such collaboration could be enhanced, interviewees from both cases offered a range of suggestions, including joint resource allocation; appointing an ID coordinator, secretary, or network leader; and assigning the public sector or city the responsibility of leading the creation of a collaborative platform.

Inclusion in innovation

Finally, a theme identified by this study as inclusion in innovation (Heeks *et al*., 2013; Lee, 2023) was discussed from multiple viewpoints by the interviewees. In the context of the MID, the very concept of 'innovation' was examined. As interviewees reflected on different forms of inclusion, it became clear that combining innovation activities relationally with urban, social, and cultural dimensions opens up opportunities to understand 'innovation' in a more inclusive way, moving beyond traditional, often technology-centric definitions (Interviews 07, 08, 09, MID; Fastenrath *et al*., 2023; Lee, 2023; Parsons *et al*., 2024). For example, in Turku, interviewees highlighted the strong humanities expertise at the University of Turku:

> One way to develop an improved TSP in the future would be to integrate researchers from the humanities, be curious and ask them questions, and receive different perspectives (Interview 11, TSP).

In the MID context, several interviewees emphasized the importance of continuing to address Australia's colonial history:

> It goes to the recognition of Indigenous people, so the First Nations of Australia, and the Custodians of the Land that we're on, the northern

> metropolitan region. […] We have researchers leading projects on land management and fire management because, with climate change, we are so susceptible to wildfire, and Indigenous people managed fire very effectively for millennia. I think there is a challenge and an opportunity around, including Indigenous knowledges more fully in the work of precincts. (Interview 07, MID).

This perspective is especially important in light of the historical mistreatment of Indigenous knowledge systems in academic and other institutional settings (Tynan, 2021; Gould, Martinez and Hoelting, 2023). When it comes to marginalized communities, it is crucial to provide recognition and support that empowers bottom-up agency without necessarily relying on the dominant metrics of the neoliberal innovation economy, instead placing justice and respect at the center.

Social innovation

The MID area has a history of social innovation. Respondents recognized that social innovators would also benefit from concentrating their activities, thereby generating localized benefits from the expertise in that area (Fernandez and Bentley, 2022; Davidson *et al*., 2023), a view that connects to the City North Social Innovation District plans:

> To me, it's quite apparent that it could become quite known for a certain type of thing and how it looks to support those kinds of industries and what's going to attract those types of workers to it. Because obviously, today we're online now, but it's all about getting people to see the benefits of it actually being in place, isn't it? (Interview 07, MID).

However, it was noted that current systems of measurement and evaluation do not support this kind of activity very well, and the definition of social innovation is also currently quite broad. Nonetheless, it was noted as having potential in terms of implementing mission-oriented innovation policy (Fastenrath *et al*., 2023):

> But to what extent does that translate to action on the ground, or is it just talking? I think that's where social innovation is closing that gap between what they say they want to achieve and actually being able to trace back (Interview 08, MID).

In Turku, interviewees 13 and 14 made similar observations, hoping that the new Kupittaa Core could become a place where the public, private, and third sectors could meet and solve societal challenges together:

> It would be great if they opened up a little bit so that the focus would be in the co-creation in issues especially…could we take that [social innovations]

> as one of the objectives, through which we could develop also the rest of the city and spread out the information to other neighbourhoods, I think it would be easier for people to connect with that (Interview 14, TSP).

DISCUSSION

The findings of this study align with previous research, as the interviewees recognized that many previously identified dimensions of inclusion are important for cities in general and for IDs in particular. Ten different relational dimensions were identified from the data: social, economic, digital, and spatial inclusion; capacity building; engagement of actors; inclusion in networks; inclusion in innovation; environment and sustainability; and inclusion in well-being. The contribution of this study lies in its argument that, while these dimensions are important and valuable in themselves, improved inclusion within IDs might be achieved by considering their interconnectedness and relational nature. For example, by addressing spatial and economic exclusion through the specialized cross-sectoral structure that IDs provide, new types of solutions can be found for the complex challenges of disadvantage, as well as providing increased societal value. The interdependence of these dimensions influences the socio-spatial experiences that IDs can offer.

Some of these dimensions are particularly connected to the spatial aspects of inclusion, such as housing, accessibility, and green environments, and they can be addressed through urban planning and development as highly place-based issues. For others, such as digital inclusion and inclusion in networks, the potential solutions appear largely place neutral. Other issues, such as urban inequality and inclusion in innovation, might benefit from collaboration with other policy sectors, such as education and social policy (Planes-Satorra and Paunov, 2017; Lee, 2023). The current research reveals that one of the factors complicating the task of enhancing inclusion in IDs is the inherently exclusive nature of the prevailing knowledge frameworks and systems upon which these districts are based (e.g., Heeks *et al*., 2013; Heaphy and Wiig, 2020; Esmaeilpoorarabi *et al*., 2020a, 2020b; Kayanan, 2022; Kayanan, Drucker and Renski, 2022; Maalsen, Wolifson and Dowling, 2023).

Implementing ID strategies without thoroughly considering the local context and conditions, while bearing social sustainability in mind, increases the risk of perpetuating the exclusionary nature of IDs, which may exacerbate issues such as socioeconomic polarization (Morales *et al*., 2025). Moreover, inclusion that is limited to mere extraction or surface-level

participation may be insufficient, as it can reinforce existing power dynamics and uphold narrow narratives about what qualifies as part of an ID within exclusive knowledge frameworks. At worst, such approaches risk reducing inclusion to tokenism or performative gestures with limited practical impact (Arnstein, 1969).

CONCLUSIONS

This study aimed to answer two research questions: 1) How can inclusive innovation districts be conceptualized from a relational perspective? and 2) How do the relational dimensions of inclusive innovation districts appear in the data? Prior research established that, in theory, innovation districts (IDs) have the potential to employ strategies based on inclusive innovation policies (Planes-Satorra and Paunov, 2017). This is because previous studies and policy documents from organizations such as the OECD have emphasized the role of cross-sectoral collaboration and policy mixes in achieving inclusive outcomes (Planes-Satorra and Paunov, 2017; Morisson and Bevilacqua, 2019; Lee, 2023; Parsons *et al*., 2024). Additionally, cross-sectoral and cross-organizational cooperation, as well as the physical proximity of actors, are at the heart of the ID concept.

However, it was noted that the concept of *inclusion*, which can be deployed rather ambiguously, has been assigned diverse and multifaceted meanings in both scientific literature and policy documents (Bunnell, 2019; Hu and Wang, 2019; Liang *et al*., 2022; Lee, 2023; Kalliomäki *et al*., 2024). Therefore, it was necessary to conceptualize inclusion as something relational to ensure the term encompassed the multiple dimensions it acquires in the specific context of IDs. Figure 1 was created to illustrate the interconnectedness of those dimensions. Nevertheless, what is traditionally imagined as an ID usually does not include social policy or other measures to aid those in the weaker socioeconomic positions of society (Interviewees 02, 11, TSP; Lee, 2023). In addition, even with inclusive measures in place, systemic issues such as discrimination and racism in job markets, inequality in the innovation economy, and the challenging path dependencies of the urban form and segregation create a complex system of exclusion from which IDs are not exempt (Kayanan, 2022; Kayanan, Drucker and Renski, 2022; Maalsen, Wolfson and Dowling, 2023; Lee, 2023).

Therefore, the results of this study should encourage a re-evaluation of the purpose of IDs to include their utilization as testbeds or living labs to promote inclusion through a wide variety of experiments that specifically build upon their integrative approach and a relational understanding of inclusion. This might increase the possibility of enabling social and other types of bottom-up or non-technical innovations in urban

environments. Nevertheless, as noted by Morisson and Bevilacqua (2019), this would require sufficient intention, governance, and resources. Moreover, that avenue has implications for both research and practice: future studies on more inclusive IDs should consider the relational dimensions of inclusion, while policymakers and urban planners can apply this perspective to promote more socially sustainable and inclusive knowledge-based urban development. The dimensions identified in Table 1 can be used to evaluate the state of inclusion in each ID within its specific context, and the framework in Figure 1 can be adapted to reflect the relational connections and overlapping impacts of the dimensions on ID residents, visitors, and users.

Broadening perspectives on what is considered part of an ID could be a topic of future interest. Innovation districts might also choose to attract entities such as social enterprises and not-for-profit organizations, and support well-being, local arts and culture, citizen engagement, and social innovations as integral parts of their sustainability strategy (Fernandez and Bentley, 2022). Therefore, while this study acknowledges the roles of economic development, city branding, and investments in innovation ecosystems, it also strongly emphasizes the need to assess the development of IDs from critical and diverse viewpoints. This is to avoid reinstating the pitfalls already well recognized in the literature. Cross-sectoral cooperation and the recognition of different users' and citizens' needs through relationality emerge as important aspects for increasing inclusion in IDs. For future studies, intersectional perspectives may aid in assessing the impacts of certain policy choices on different groups as well as the power relations embedded within IDs. Studies could further explore citizen perspectives via qualitative studies using approaches such as focus groups. In addition, social network analysis might aid in further unpacking the relationality of IDs.

Data availability

Interview data will not be published to protect the identity of individuals.

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REFERENCES

Adu-McVie, R., Yigitcanlar, T., Xia, B., & Erol, I. (2022). Innovation district typology classification via performance framework: insights from Sydney, Melbourne, and Brisbane. *Buildings, 12*(9), 1398. https://doi.org/10.3390/buildings12091398.

Armendaris, F., Hamilton, E., Lee, H., & Shah, P. (2015). *World - Inclusive cities approach paper*. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/402451468169453117.

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216–224. https://doi.org/10.1080/01944366908977225.

Australian Bureau for Statistics (2023). Regional population. Accessed 11.7.2025. Available at: https://www.abs.gov.au/statistics/people/population/regional-population/latest-release#key-statistics.

Battaglia, A., & Tremblay, D. G. (2011). 22@ and the Innovation District in Barcelona and Montreal: a process of clustering development between urban regeneration and economic competitiveness. *Urban Studies Research, 2011*(1), 568159. https://doi.org/10.1155/2011/568159.

Batterham, D., Cigdem-Bayram, M., Parkinson, S., Reynolds, M., & Wood, G. (2022). The spatial dynamics of homelessness in Australia: Urbanisation, intra-city dynamics and affordable housing. *Applied Spatial Analysis and Policy*, *15*(4), 1021–1043. https://doi.org/10.1007/s12061-022-09435-5.

Bernelius, V. & Huilla, H. (2021). Educational equity, social and spatial segregation and opportunities for targeted support. Publications of the Finnish Government 2021:7. http://urn.fi/URN:ISBN:978-952-383-761-4.

Biswas, A. (2019). A framework to analyse inclusiveness of urban policy. *Cities*, *87*, 174–184. https://doi.org/10.1016/j.cities.2018.09.022.

Boschma, R. (2005). Proximity and Innovation: A Critical Assessment. *Regional Studies, 39*(1), 61–74. https://doi.org/10.1080/0034340052000320887.

Bramwell, A. (2021). Inclusive innovation and the "ordinary" city: Incidental or integral?. *Local Economy, 36*(3), 242–264. https://doi.org/10.1177/02690942211019005.

Bunnell, T. (2019). Inclusiveness in urban theory and urban centred international development policy. *J. Reg. City Plan*, *30*, 89–101. DOI: 10.5614/jpwk.2019.30.2.1.

Carayannis, E. G., & Campbell, D. F. (2009). 'Mode 3'and 'Quadruple Helix': toward a 21st century fractal innovation ecosystem. *Int. J. Technology Management, 46*(3-4), 201–234. https://doi.org/10.1504/IJTM.2009.023374.

City of Melbourne (2022). Inclusive Melbourne Strategy 2022–32. Available at: https://www.melbourne.vic.gov.au/inclusive-melbourne-strategy.

City of Melbourne (2025a). City of Melbourne forecasts 2023-2043 summary infographic. Accessed 11.7.2025. Available at: https://www.melbourne.vic.gov.au/population-estimates-and-forecasts.

City of Melbourne (2025b). Free wi-fi across the city. Accessed 11.7.2025. Available at: https://www.melbourne.vic.gov.au/free-wi-fi-across-city.

City of Turku (2024). Turun kaupungin rakennusjärjestys. Available at: https://www.turku.fi/sites/default/files/atoms/files/turun_kaupungin_rakennusjarjestys_1.2.2024.pdf.

City of Turku (2025a) Turun Tiedepuisto -kärkihanke. Accessed 11.7.2025. Available at: https://www.turku.fi/projektit-ja-hankkeet/turun-tiedepuisto.

City of Turku (2025b). Turku Science Park. Accessed 11.7.2025. Available at: https://turuntiedepuisto.fi/turun-tiedepuisto/.

City of Turku (2025c). Taito-kampus. Accessed 11.7.2025. Available at: https://turuntiedepuisto.fi/kupittaankarki/taito-kampushanke/.

City of Turku & Ubigu (2023). Turun asuinalueiden eriytyminen - Paikkatietopohjainen selvitys.

Corbin, T. (2023). Free payphones have become a lifeline for Australians in need. Accessed 11.7.2025. Available at: https://www.telstra.com.au/exchange/payphone-usage-is-surging-with-nearly-two-million-free-calls-bei.

Crenshaw, K. (1989). Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics. *University of Chicago Legal Forum*: Vol. 1989: Iss. 1, Article 8. Available at: http://chicagounbound.uchicago.edu/uclf/vol1989/iss1/8.

Davidson, K., Håkansson, I., Coenen, L., & Nguyen, T. M. P. (2023). Municipal experimentation in times of crises:(Re-) defining Melbourne's innovation district. *Cities*, *132*, 104042. https://doi.org/10.1016/j.cities.2022.104042.

Elden, S. (2009). Space I. In R. Kitchin & N. Thrift (eds.), *International Encyclopedia of Human Geography*, (pp. 262–267). Elsevier Ltd.

Esmaeilpoorarabi, N., Yigitcanlar, T., Guaralda, M., & Kamruzzaman, M. (2018). Does place quality matter for innovation districts? Determining the essential place characteristics from Brisbane's knowledge precincts. *Land Use Policy*, *79*, 734–747. https://doi.org/10.1016/j.landusepol.2018.09.016.

Esmaeilpoorarabi, N., Yigitcanlar, T., Kamruzzaman, M., & Guaralda, M. (2020a). How can an enhanced community engagement with innovation districts be established? Evidence from Sydney, Melbourne and Brisbane. *Cities, 96*, 102430. https://doi.org/10.1016/j.cities.2019.102430.

Esmaeilpoorarabi, N., Yigitcanlar, T., Kamruzzaman, M., & Guaralda, M. (2020b). How does the public engage with innovation districts? Societal impact assessment of Australian innovation districts. *Sustainable Cities and Society, 52*, 101813. https://doi.org/10.1016/j.scs.2019.101813.

Etzkowitz, H. (2003). Innovation in innovation: The triple helix of university-industry-government relations. *Social science information*, *42*(3), 293–337. https://doi.org/10.1177/05390184030423002.

Fainstein, S. S. (2014). The just city. *International journal of urban Sciences*, *18*(1), 1–18. https://doi.org/10.1080/12265934.2013.834643.

Fastenrath, S., Tavassoli, S., Sharp, D., Raven, R., Coenen, L., Wilson, B., & Schraven, D. (2023). Mission-Oriented Innovation Districts: Towards challenge-led, place-based urban innovation. *Journal of Cleaner Production*, 138079. https://doi.org/10.1016/j.jclepro.2023.138079.

Fernandez, M., & Bentley, T. (2022). Early Evolution of an Innovation District: Origins and Evolution of MID and RMIT University's Social

Innovation Precinct in Melbourne's City North. *Journal of evolutionary studies in business*, *7*(2), 184–218. https://doi.org/10.1344/jesb2022.2.j111.

Florida, R. (2017). *The new urban crisis: How our cities are increasing inequality, deepening segregation, and failing the middle class-and what we can do about it*. Hachette UK.

Gao, T., & Lim, S. (2023). Socio-spatial integration in innovation districts: Singapore's mixed-use experiment. *Cities, 140*, 104405. https://doi.org/10.1016/j.cities.2023.104405.

Gerometta, J., Haussermann, H., & Longo, G. (2005). Social innovation and civil society in urban governance: Strategies for an inclusive city. *Urban studies, 42*(11), 2007–2021. https://doi.org/10.1080/00420980500279851.

Gould, R. K., Martinez, D. E., & Hoelting, K. R. (2023). Exploring Indigenous relationality to inform the relational turn in sustainability science. *Ecosystems and People, 19*(1), 2229452. https://doi.org/10.1080/26395916.2023.2229452.

Hansasooksin, S. T., & Tontisirin, N. (2021). Placemaking as an urban development strategy for making the Pattaya Innovation District. *Regional Science Policy and Practice, 13*(6), 1930–1950. https://doi.org/10.1111/rsp3.12400.

Harvey, D. (2003). The right to the city. *International Journal of Urban and Regional Research*, *27*(4), 939–941. https://doi.org/10.1111/j.0309-1317.2003.00492.x.

Heaphy, L., & Wiig, A. (2020). The 21st century corporate town: The politics of planning innovation districts. *Telematics and Informatics, 54*, 101459. https://doi.org/10.1016/j.tele.2020.101459.

Heeks, R., Amalia, M., Kintu, R., & Shah, N. (2013). Inclusive innovation: definition, conceptualisation and future research priorities. *Development informatics working paper*, (53). http://dx.doi.org/10.2139/ssrn.3438439.

Hu, W., & Wang, R. (2019). Which Chinese cities are more inclusive and why?. *Cities*, *86*, 51–61. https://doi.org/10.1016/j.cities.2018.12.010.

Jones, M. (2009). Phase space: geography, relational thinking, and beyond. *Progress in Human Geography, 33*(4), 487–506. https://doi.org/10.1177/0309132508101599.

Kalliomäki, H., Kalliokoski, J., Woodson, T., Kunttu, L., & Kuusisto, J. (2024). Inclusion as a science, technology, and innovation policy objective in high-income countries: the decoupling dilemma. *Science and Public Policy*, scae019. https://doi.org/10.1093/scipol/scae019.

Kalliomäki, H., Oinas, P., & Salo, T. (2024). Innovation districts as strategic urban projects: the emergence of strategic spatial planning for urban innovation. *European Planning Studies*, *32*(1), 78–96. https://doi.org/10.1080/09654313.2023.2216727.

Katz, B. & Wagner, J. (2014). The Rise of Innovation Districts: A New Geography of Innovation in America. Brookings.

Kayanan, C. M. (2022). A critique of innovation districts: Entrepreneurial living and the burden of shouldering urban development. *Environment and Planning A: Economy and Space*, *54*(1), 50–66. https://doi.org/10.1177/0308518X211049445.

Kayanan, C. M., Drucker, J., & Renski, H. (2022). Innovation Districts and Community Building: An Effective Strategy for Community Economic Development?. *Economic Development Quarterly*, *36*(4), 343–354. https://doi.org/10.1177/08912424221120016.

Klingler-Vidra, R. & Liu, Y. (2020). Inclusive innovation policy as social capital accumulation strategy. *International Affairs*, *96*(4), 1033–1050. https://doi.org/10.1093/ia/iiaa091.

Kupittaa Core Alliance (2023). Unpublished working document.

Lee, N. (2023). Inclusive innovation in cities: from buzzword to policy. *Regional Studies*, *59*(1). https://doi.org/10.1080/00343404.2023.2168637.

Liang, D., De Jong, M., Schraven, D., & Wang, L. (2022). Mapping key features and dimensions of the inclusive city: A systematic bibliometric analysis and literature study. *International Journal of Sustainable Development & World Ecology*, *29*(1), 60–79. https://doi.org/10.1080/13504509.2021.1911873.

Maalsen, S., Wolifson, P., & Dowling, R. (2023). Gender in the Australian innovation ecosystem: Planning Smart cities for men. *Gender, Place & Culture, 30*(2), 299–320. https://doi.org/10.1080/0966369X.2022.2053068.

Morales, D., Green, L., Marlow, D., Cadena Gaitán, C., Deitrick, S., Glass, M. R., & Kempton, L. (2025). Defining inclusive innovation: challenges and lessons for innovation districts. *Regional Studies, Regional Science, 12*(1), 740–753. https://doi.org/10.1080/21681376.2025.2543915.

MID (2025). Melbourne Innovation Districts. Accessed 11.7.2025. Available at: https://mid.org.au/.

Morisson, A., & Bevilacqua, C. (2019). Balancing gentrification in the knowledge economy: the case of Chattanooga's innovation district. *Urban Research & Practice*, *12*(4), 472–492. https://doi.org/10.1080/17535069.2018.1472799.

Murdoch, J. (2005). *Post-structuralist geography: a guide to relational space.* London: Sage.

Oinas, P., Lucia, G., Poutanen, J., Koponen, A., Lehtovuori, P. & Vahlo, J. (2023). Artists inspire creative interaction in science park [Translation from Finnish]. Research briefings 5-2023, Turku Urban Research Programme.

Pancholi, S., Yigitcanlar, T., & Guaralda, M. (2019). Place making for innovation and knowledge-intensive activities: The Australian experience. *Technological Forecasting and Social Change*, *146,* 616–625. https://doi.org/10.1016/j.techfore.2017.09.014.

Parsons, K., Delbridge, R., Uyarra, E., Waite, D., Huggins, R., & Morgan, K. (2024). Advancing inclusive innovation policy in the UK's second-tier city-regions. *Review of Regional Research, 44*(3), 313–336. https://doi.org/10.1007/s10037-024-00209-9.

Planes-Satorra, S. & C. Paunov (2017). Inclusive innovation policies: Lessons from international case studies. OECD Science, Technology and Industry Working Papers, No. 2017/02, OECD Publishing, Paris.

RMIT (2023). Creating a world-class social innovation precinct in city north. Accessed 11.7.2025. Available at: https://www.rmit.edu.au/news/all-news/2023/nov/creating-world-class-social-innovation-precinct-city-north.

Schot, J., & Steinmueller, W. E. (2018). Three frames for innovation policy: R&D, systems of innovation and transformative change. *Research policy*, *47*(9), 1554–1567. https://doi.org/10.1016/j.respol.2018.08.011.

Stuck, J., Broekel, T., & Revilla Diez, J. (2016). Network Structures in Regional Innovation Systems. *European Planning Studies, 24*(3), 423–442. https://doi.org/10.1080/09654313.2015.1074984.

Sutela, E. (2024). The role of municipalities in promoting housing affordability: an analysis of three Finnish cities. *Urban Research & Practice*, *17*(3), 347–370. https://doi.org/10.1080/17535069.2023.2206793.

Söderhäll, M., & Alm Fjellborg, A. (2024). Housing production, tenure mix and social mix. *Housing Studies*, *39*(1), 272–296. https://doi.org/10.1080/02673037.2022.2045004.

Thapa, R. K., Iakovleva, T., & Foss, L. (2019). Responsible research and innovation: A systematic review of the literature and its applications to regional studies. *European Planning Studies*, *27*(12), 2470–2490. https://doi.org/10.1080/09654313.2019.1625871.

The Economist Intelligence Unit Limited (2023). The Global Liveability Index 2023 - Optimism amid instability.

Tynan, L. (2021). What is relationality? Indigenous knowledges, practices and responsibilities with kin. *Cultural geographies, 28*(4), 597–610. https://doi.org/10.1177/14744740211029287.

UN (2018). 68% of the world population projected to live in urban areas by 2050, says UN. Accessed 18.5.2024. Available at: https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html.

Wagner, J., Katz, B. & Osha, T. (2019). The Evolution of Innovation Districts: The New Geography of Global Innovation. The Global Institute of Innovation Districts.

Weber, R. (2002). Extracting value from the city: Neoliberalism and urban redevelopment. *Antipode, 34*(3), 519–540. https://doi.org/10.1111/1467-8330.00253.

Yeung, H. W. C. (2005). Rethinking relational economic geography. *Transactions of the Institute of British Geographers*, *30*(1), 37–51. https://doi.org/10.1111/j.1475-5661.2005.00150.x.

Yigitcanlar, T., Adu-McVie, R., & Erol, I. (2020). How can contemporary innovation districts be classified? A systematic review of the literature. *Land Use Policy*, *95*, 104595. https://doi.org/10.1016/j.landusepol.2020.104595.

Zhao, R., De Jong, M., & Edelenbos, J. (2023). Will the true inclusive city rise? Mapping the strengths and weaknesses of the city ranking systems. *Cities, 143*, 104617. https://doi.org/10.1016/j.cities.2023.104617.

Zhao, R., Edelenbos, J., de Jong, M., Belabas, W., & Björner, E. (2025). Challenges of implementing inclusive city policies in three European port cities. *npj Urban Sustainability, 5*(1), 47. https://doi.org/10.1038/s42949-025-00239-3.