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**Co-Creation in Urban Climate Regeneration: Addressing Participation Barriers for  
Marginalized Groups - A Case Study of Malmi District, Helsinki**

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## ABSTRACT

This research examines how co-creation processes in urban climate regeneration can be designed to address participation barriers faced by marginalized groups, using Helsinki's Malmi District as a case study. Despite policy shifts toward inclusive approaches in European urban development, marginalized communities remain underrepresented in climate planning processes. The study employs a qualitative methodology combining interviews and field observations to investigate barriers to participation in Malmi's diverse socioeconomic context. The research identifies five interconnected barrier categories: communication and language, trust and relationship, accessibility and resources, design and process, and motivation and value. These barriers affect different marginalized groups in distinct ways, creating compound patterns of exclusion. Based on these findings, the study proposes a comprehensive framework for inclusive co-creation comprising community-centered communication systems, structural accessibility enhancement, collaborative value creation, and adapting the process to community needs. This research contributes to both theoretical understanding of participation barriers and practical implementation of equitable co-creation processes in urban climate initiatives. The findings have implications extending beyond Malmi to diverse urban contexts across Europe, offering actionable guidance for urban planners, policymakers, and community organizations seeking to develop more inclusive approaches to climate regeneration.

**Keywords:** co-creation, participation barriers, marginalized communities, urban climate regeneration, climate justice

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## **DEDICATION**

*To my fiancée; thank you for believing in me even when I struggled to believe in myself. You inspired me to start this journey and supported me through every step. This milestone is ours, not mine.*

# 1. INTRODUCTION

## 1.1. Background of the research

Climate change disproportionately impacts marginalized groups, such as elderly, low-income residents, people with special needs, and others, who contribute the least to global emissions yet face the greatest risks due to systemic inequalities in housing, healthcare, and political agency (Shi et al., 2016). Many initiatives aimed at regenerating the urban climate, while important for sustainability, often fail to effectively involve these groups in the decision-making process, thus further highlighting the issue of injustice (Angelovski et al., 2016).

Co-creation offers a promising approach to address these exclusions by positioning citizens as active co-designers rather than passive recipients of urban climate interventions (Voorberg et al., 2014). This approach is in line with recent European urban policy developments, including the European Green Deal (2021) and the New European Bauhaus (2023) initiative, which emphasize more citizen-led approaches to urban transformation. Despite this policy shift towards inclusiveness, the practical implementation of equitable co-creation remains challenging, particularly in complex urban environments.

In Helsinki's Malmi District, the GreenInCities project has developed a comprehensive “Co-creation toolbox” to engage residents in climate regeneration efforts (Balestrini et al., 2023). However, preliminary observations reveal persistent participation gaps. Non-Finnish speakers, migrants, elderly residents, individuals with limited resources, and others, remain difficult to reach, even in these projects with explicit inclusion objectives (Csala et al., 2024). While academic literature documents these challenges, initiatives in Malmi District lack specific guidance addressing its unique multicultural and socioeconomic context.

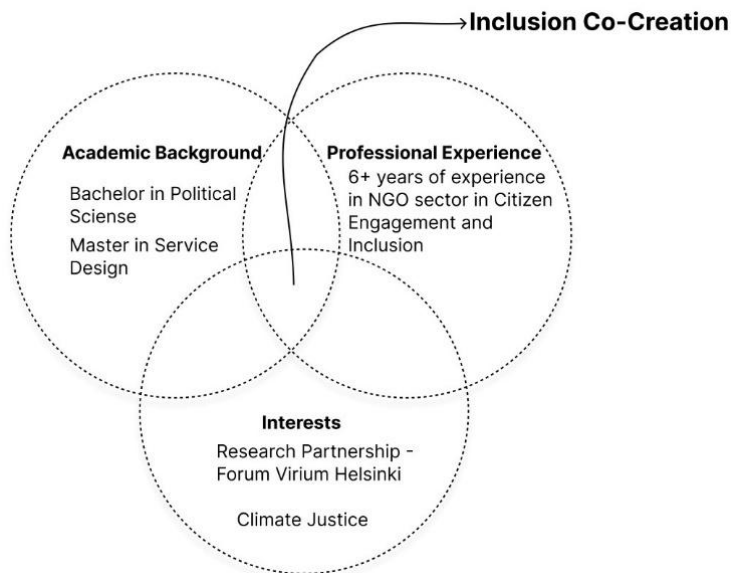
This research addresses a critical implementation gap by examining specific barriers to participation in Malmi District and developing tailored strategies to enhance inclusion. The significance of this work extends beyond local application - while addressing the immediate needs of projects in Malmi District, it also contributes to broader theoretical understandings of equitable participation in urban climate initiatives. As cities worldwide increasingly adopt

co-creation approaches, understanding how to effectively engage marginalized groups becomes essential for both climate justice and adaptation effectiveness.

## 1.2. Research motivation

My interests to this topic began during community workshops I facilitated in Kosovo, where I observed how the design of participatory processes directly shapes who engages and whose voices influence decisions. Communication methods, meeting times, language and other, either welcomed diverse participation or inadvertently excluded certain groups, often those already marginalized in other aspects of community life.

This experience guided my academic journey from Political Science to Service Design, where I focused on understanding how participation can be designed for inclusion rather than reinforcing existing power imbalances. The Malmi district, with its rich cultural diversity and socio-economic challenges, provides an ideal context to explore these questions within urban climate regeneration (Figure 1).



**Figure 1** *Personal Research Motivation*

This research represents a convergence of my professional and academic background with the practical needs of the different urban climate regeneration projects in Malmi District. By identifying and addressing barriers that prevent marginalized groups from engaging in co-

creation processes, I hope to contribute knowledge that makes urban climate initiatives more equitable and effective for all community members.

This personal motivation aligns with growing scholarly recognition that participation design directly impacts climate justice outcomes. The research questions emerge from both my practical experiences and identified gaps in current theoretical understanding of participation barriers in culturally diverse urban contexts.

### **1.3. Research goals and research questions**

This research examines how co-creation processes can be designed to address participation barriers faced by marginalized and vulnerable groups in urban climate regeneration, using Malmi District as a case study. The investigation centers on three primary objectives:

1. Identifying and categorizing the barriers to participation that marginalized groups in Malmi District face in order to participate in co-creation processes
2. Exploring co-creation mechanisms that are perceived as accessible by marginalized groups in Malmi District
3. Developing actionable strategies that would help the different initiatives to involve marginalized and vulnerable groups in Malmi District more effectively

To achieve these objectives, the research addresses one main question supported by four sub-questions:

#### **Main Question:**

*How can co-creation processes in urban climate regeneration be designed to address the barriers to participation faced by marginalized and vulnerable groups in Malmi district?*

#### **Sub-questions:**

1. What kind of barriers prevent marginalized and vulnerable groups in Malmi district from participating in the co-creation processes?
2. How do these barriers specifically affect marginalized and vulnerable groups?
3. Which co-creation mechanisms are perceived as inclusive by marginalized and vulnerable groups in Malmi?

4. What kind of strategies can help urban initiatives and similar projects to include these groups in effective way.

These research questions address both theoretical gaps in understanding context-specific participation barriers and practical challenges in implementing inclusive co-creation processes. By structuring the inquiry from barriers to mechanisms to strategies, the research creates a foundation for both scholarly contribution and practical application.

#### **1.4. Research scope**

This research focuses specifically on barriers to participation in urban climate regeneration efforts in the Malmi district, with clear boundaries defining its scope:

1. *Geographical scope:* The study examines only the Malmi district of Helsinki, an area characterized by high cultural diversity and significant socio-economic challenges. Although the findings may be relevant to similar settings, the research does not claim wider applicability.
2. *Time frame:* Data collection took place between January and April 2025. The findings reflect this timeframe rather than longitudinal patterns.
3. *Conceptual scope:* The study examines barriers to participation in co-creation processes and not all aspects of urban climate regeneration. Also, this study focuses only on aspects of citizen involvement and participation, and no other aspects of co-creation.

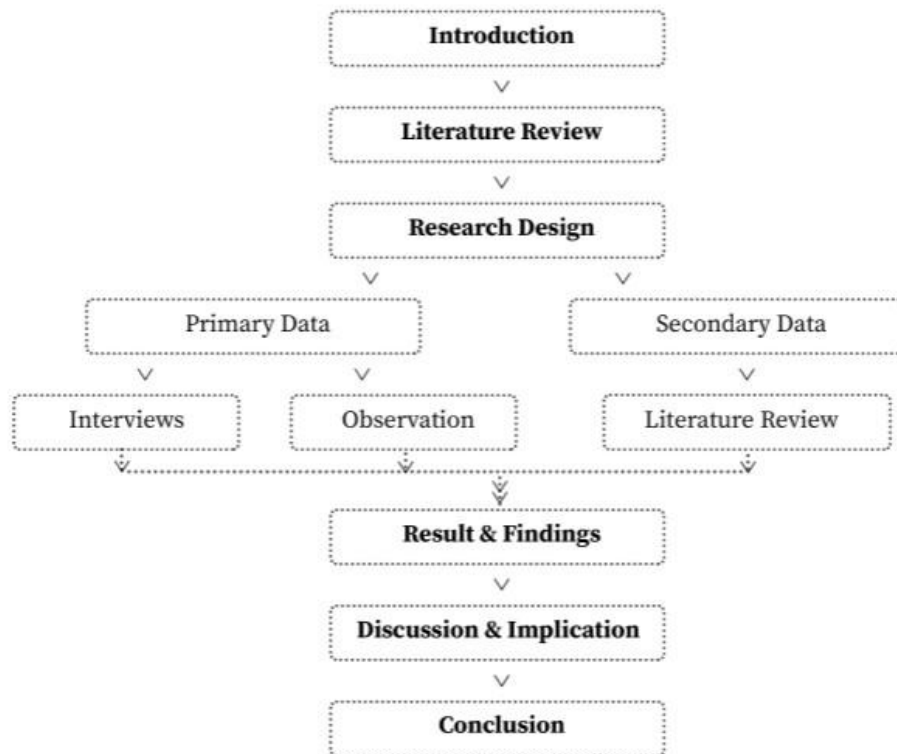
These boundaries ensure that the research maintains sufficient depth to generate meaningful knowledge while acknowledging the limits of its applicability beyond the specified context.

#### **1.5. Thesis structure overview**

This thesis is organized into six chapters that address the research questions and objectives outlined above (Figure 2):

Chapter 1 introduces the research problem, establishing its relevance and presenting the guiding questions. It outlines the research motivation, scope, and ethical considerations that frame the investigation.

Chapter 2 develops the theoretical and empirical foundation through a literature review that moves from abstract concepts (co-creation theories, vulnerability frameworks, justice principles) to practical applications (documented barriers, effective practices, Malmi context). This progression identifies key knowledge gaps that the research addresses.



**Figure 2** *Thesis Structure*

Chapter 3 explains the research design, justifying the interpretivist philosophy and qualitative methodology while detailing the data collection and analysis methods. This methodological transparency establishes the validity of the findings.

Chapter 4 presents the empirical results organized by research question, from identified barriers to their differential impacts and potential solutions. These findings emerge from analysis of resident interviews, expert perspectives, and field observations.

Chapter 5 discusses theoretical and practical implications, connecting the findings to existing literature while highlighting contributions to both scholarly understanding and practical implementation.

Chapter 6 concludes by summarizing key insights, acknowledging limitations, and suggesting directions for future research, demonstrating how the findings address the initial research questions.

Each chapter builds upon previous sections while maintaining focus on the central question of designing inclusive co-creation processes in urban climate regeneration.

## **1.6. Ethical consideration**

This research involved different participants through semi-structured interviews with both Malmi District residents (particularly those from marginalized groups) and subject matter experts. To ensure ethical research practices, several measures were implemented throughout the research process.

Letter of consent was obtained from all participants prior to their involvement. A consent letter was developed (see Appendix 2) for all participants. This letter outlined the research purpose, participant rights, confidentiality measures, data usage, and the voluntary nature of participation. Participants were informed they could withdraw from the study at any time without consequences.

For recruiting resident participants, particularly those from marginalized communities, I collaborated with the local grassroots organizations working in Malmi District. Expert participants were reached through professional networks and the Forum Virium Helsinki staff contacts.

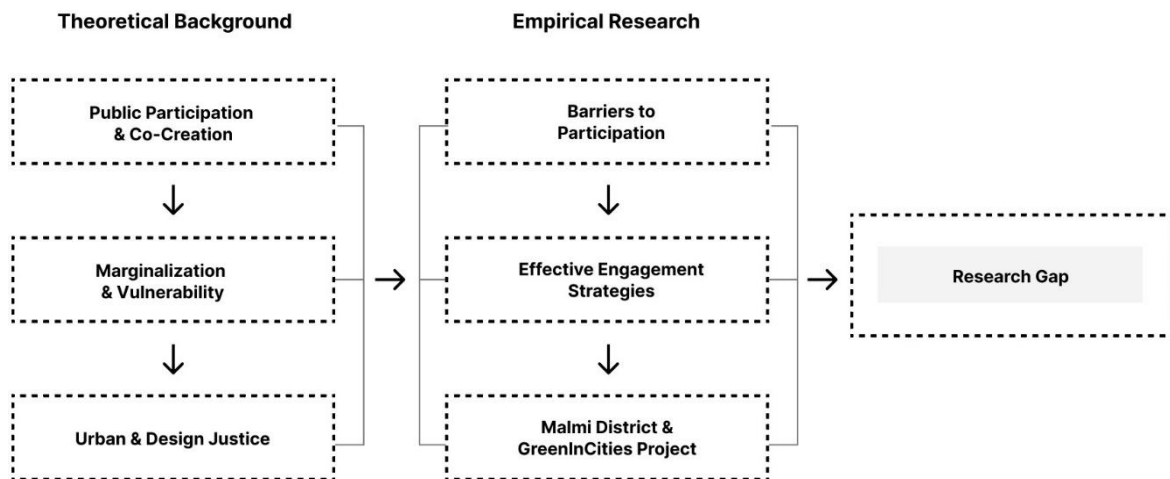
Observational of the co-creation activities was conducted with the explicit permission of the Forum Virium Helsinki staff organizers, and all individuals present were informed about the research purpose. No identifiable data was recorded during observations without specific consent.

Special attention was given to potential language barriers when working with non-native Finnish speakers. Representatives from different grassroots organizations in Malmi helped with translation during interviews, ensuring participants could fully understand the research and express their perspectives. Also, all data collected was anonymized during transcription and analysis, with pseudonyms used in place of real names.

## 2. LITERATURE REVIEW

### 2.1. Introduction

This chapter establishes a comprehensive theoretical and empirical foundation for understanding how co-creation processes can address participation barriers faced by marginalized groups in urban climate regeneration initiatives. The review follows a deliberate progression from abstract theoretical concepts to concrete practical applications, illuminating gaps in current research that this thesis aims to address (Figure 3). This deliberate progression from theoretical frameworks to empirical applications serves a crucial methodological purpose: it ensures that practical recommendations are firmly grounded in theoretical and empirical understanding. This approach helps bridge the common divide between abstract academic frameworks and practitioner's practical needs when designing inclusive co-creation processes.



**Figure 3** *Literature Review Process*

The chapter is structured in two primary sections. Section 2.2 constructs a detailed theoretical framework by examining three interconnected domains: co-creation methodologies, vulnerability and exclusion mechanisms, and justice principles. This theoretical foundation helps articulate not only what co-creation can accomplish, but why it matters for equitable climate action and how justice frameworks can guide its implementation. Section 2.3 complements the theoretical basis with empirical research examining practical applications in real-world contexts, focusing on participation barriers, successful engagement strategies, and specific findings from the Malmi District case study.

The integration of these three theoretical domains represents a novel analytical approach. While previous research has examined these frameworks separately, their intersection creates a more comprehensive understanding of participation dynamics. Co-creation theories provide process models but often overlook power dynamics; vulnerability frameworks identify who faces exclusion but offer limited intervention guidance; justice principles provide normative standards but sometimes lack practical implementation pathways. By examining their interconnections, this review develops a more holistic framework for understanding and addressing participation barriers.

By synthesizing theoretical frameworks with empirical evidence, this review identifies critical knowledge gaps and argues that while co-creation offers significant potential for inclusive urban climate regeneration, its effective implementation requires addressing context-specific barriers through tailored strategies that account for the unique characteristics of different marginalized groups. This thesis addresses this contextual gap through empirical research in Malmi District, examining both barrier patterns and effective engagement strategies to develop more nuanced understandings of how participation challenges manifest in specific urban environments.

The structure and content of this literature review directly align with the research questions presented in Chapter 1. The theoretical examination of co-creation and justice frameworks informs the main question of designing inclusive processes, while vulnerability literature addresses how barriers affect marginalized groups differently. The empirical sections on documented barriers and engagement strategies provide foundations for identifying effective mechanisms and developing actionable recommendations for the Malmi context.

### **Literature Review Process**

This review was conducted through a systematic process that included academic databases (Google Scholar, Scopus, ResearchGate, University of Lapland database, and other), practitioner publications, and grey literature. Search terms included combinations of “co-creation,” “participation barriers,” “marginalized communities,” and “urban climate initiatives.” Literature was selected based on relevance to participation barriers, timeliness (with emphasis on 2015-2025 publications), and methodological quality. A snowballing technique was also employed to identify additional relevant sources from reference lists of key publications.

## 2.2. Theoretical Foundations

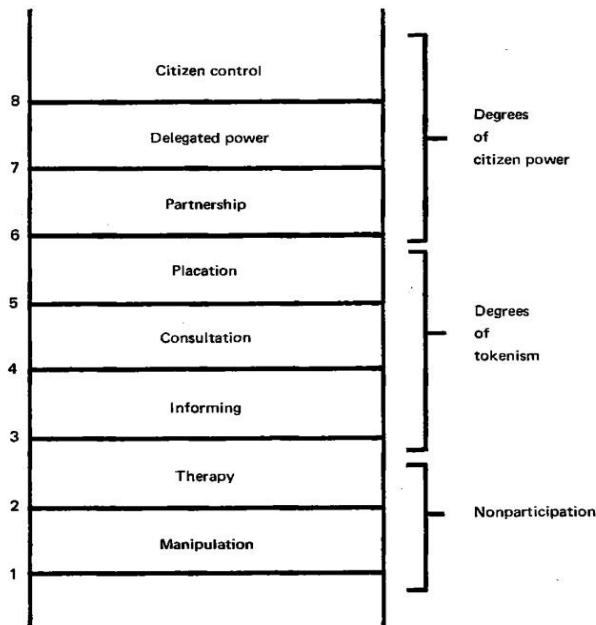
This section establishes the theoretical foundation of co-creation and examines how it intersects with vulnerability frameworks and principles of justice in urban climate initiatives (Figure 4). Rather than merely presenting these frameworks separately, this section analyses their interrelationships, contradictions, and complementary aspects to develop a comprehensive understanding of participation barriers faced by marginalized groups.



**Figure 4** *Theoretical Background Process*

### 2.2.1. Public Participation and Co-Creation

The evolution of public participation theories reflects broader power struggles over who has influence in democratic governance. This progression is not merely theoretical but mirrors real contestations over whose voices shape urban climate responses. Early frameworks such as Arnstein (1969) positioned participation as a hierarchy of power redistribution, distinguishing between “tokenistic” consultation (information sharing, consultation) and authentic citizen empowerment (partnership, delegated power, citizen control), as illustrated in Figure 5.



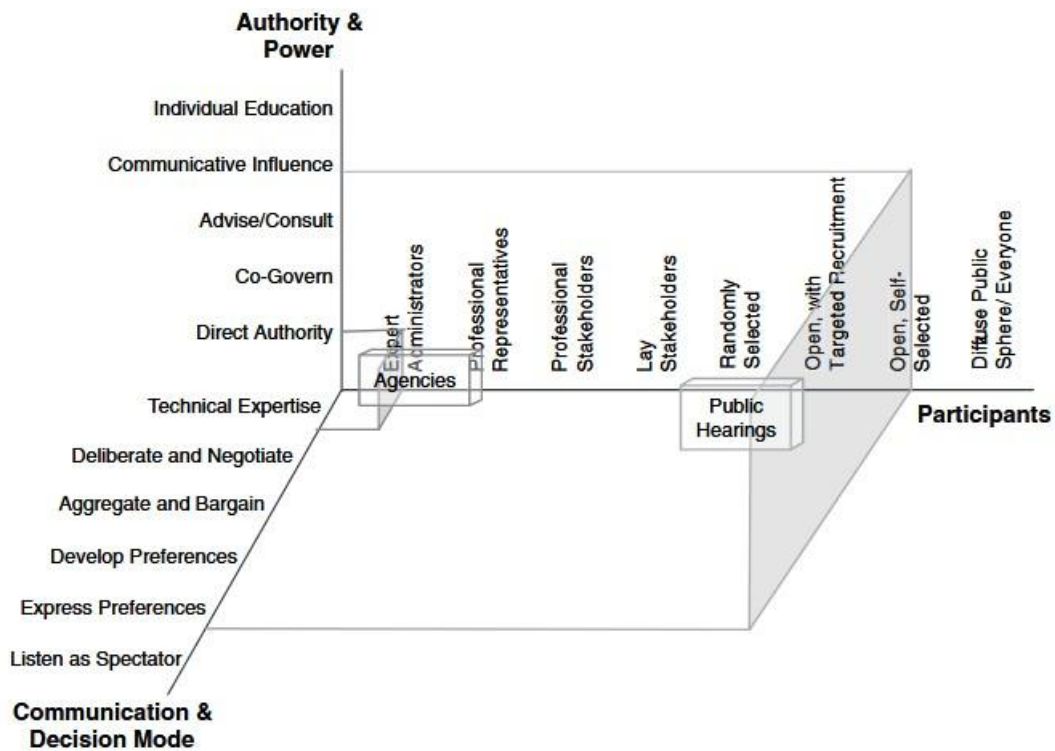
**Figure 5.** *Arnstein's (1996) Ladder of Participation*

Arnstein's framework represented a radical challenge to the power asymmetries in governance, positioning participation as fundamentally about redistributing power rather than merely collecting input. Her analysis revealed how institutions often instrumentalize participation to legitimize predetermined agendas while maintaining existing power structures - a critique that remains relevant today in urban climate initiatives. As Arnstein (1969) argues: *“Participation without redistribution of power is an empty and frustrating process for the powerless.”* This insight helps explain why marginalized groups might remain disengaged from climate initiatives despite formal participation opportunities.

However, Arnstein's ladder has faced substantive critique for oversimplifying power dynamics as a linear progression. Power in participation processes operates through more complex, multidimensional mechanisms that intersect with gender, race, language, socioeconomic status, and other factors. Fung (2006) addresses this limitation by proposing the Democracy Cube (Figure 6), which conceptualizes participation along three axes: who participates, how they communicate, and how much influence they exert on public action.

Fung's Democracy Cube offers a more nuanced approach to participation design, acknowledging that different governance challenges may require different combinations of participants, communication modes, and influence mechanisms. This framework challenges simplistic notions of participation as inherently beneficial, instead emphasizing the importance of context-specific design. Fung (2006) argues that *“no single participatory design is suited to all governance tasks,”* suggesting that effective participation mechanisms must be tailored to specific contexts and objectives.

While Arnstein's Ladder of Participation (1969) and Fung's Democracy Cube Framework (2006) provide useful insights, they primarily focus on decision-making rather than collaborative aspect that could result in the creation of new solutions. Scholars argue that the conventional participatory methods do not always achieve the involvement of all groups and they serve primarily to provide information on the basis of which the government subsequently make decisions (Michels & De Graaf, 2010). Gaventa's (2006) research further reveals how participatory processes that fail to address underlying power asymmetries may actually reinforce exclusion rather than mitigate it.



**Figure 6.** Fung's (2006) *Democracy Cube*

These limitations in conventional participation approaches have led to the emergence of co-creation as an alternative paradigm. Co-creation originated in the business sector with Prahalad & Ramaswamy (2000) work on consumer involvement in value creation, challenging traditional producer-consumer relationships (C. K. Prahalad & Ramaswamy, 2004). When adapted to public governance, co-creation represents a more fundamental shift in power relations than conventional participation methods. While co-creation is sometimes confused with co-production, important conceptual distinctions exist (Brandsen et al., 2018). Co-production typically refers to citizen involvement in service delivery (implementation phase), while co-creation encompasses the entire development cycle, including problem definition and solution design (Bovaird & Loeffler, 2012; Loeffler & Bovaird, 2016; Torfing et al., 2019).

Voorberg et al., (2014) systematic review provides a valuable analytical framework by identifying three levels of citizen involvement in co-creation:

1. **Citizens as co-implementers:** Citizens execute elements of public services with minimal influence on design

2. **Citizen as co-designers:** Citizens have influence how services or interventions are designed
3. **Citizens as co-initiators:** Citizens initiate and share services or interventions from conceptions

This framework allows for assessing the depth of co-creation in urban climate initiatives, distinguishing between superficial engagement and genuine collaboration. As Voorberg et al., (2014) demonstrate, most documented co-creation initiatives position citizens as co-implementers (50% of studied cases) rather than co-designers (28%) or co-initiators (9%), revealing a significant gap between co-creation rhetoric and practice.

To synthesize these considerations, this research defines co-creation as “*a collaborative process where diverse stakeholders, including those from marginalized groups, actively participate in multiple stages of urban climate initiatives, with influence on both process and outcomes.*” This definition emphasizes three essential characteristics: (1) inclusion of diverse stakeholders including marginalized groups, (2) participation across multiple development stages, and (3) substantive rather than symbolic influence. By specifically highlighting the inclusion of marginalized groups, this definition connects co-creation explicitly to the justice considerations discussed in Section 2.2.3 and anticipates the analysis of participation barriers elaborated in subsequent sections.

### **2.2.2. Social Vulnerability and Exclusion**

Understanding who faces barriers to participation in urban climate co-creation requires examining how vulnerability and social exclusion operate in contemporary urban contexts. This section analyses theoretical frameworks that explain why certain groups are systematically excluded from decision-making processes, establishing a foundation for identifying participation barriers and developing more inclusive engagement approaches.

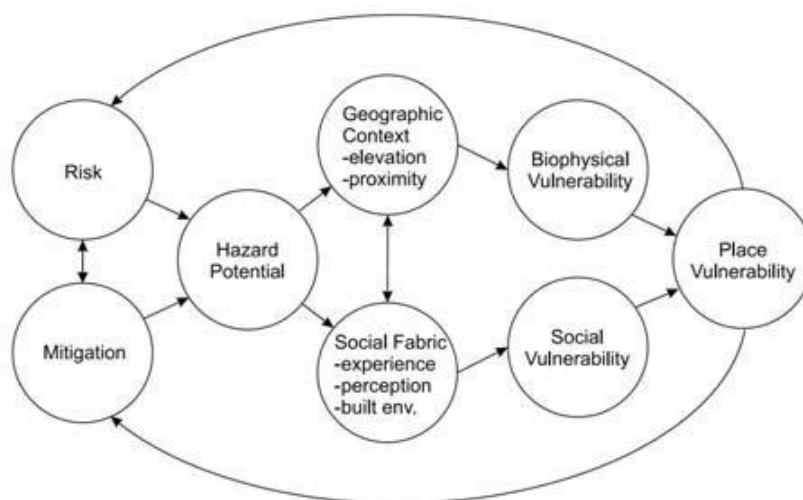
#### *Vulnerability in Urban Contexts*

The concept of vulnerability has evolved significantly from its early applications in hazards research toward more nuanced understandings of socially constructed risk. Traditional ap-

proaches defined vulnerability simply as an intrinsic risk factor of an entity or system exposed to a hazard, corresponding to its susceptibility to damage (Paul, 2013). However, this technical definition failed to address critical questions about whose vulnerability matters and how vulnerability is socially produced. As Cutter (1996) observed, these approaches failed to specify what kind of losses were being discussed and whose losses were being addressed, limiting the concept’s utility for understanding differential risk experiences across social groups.

This limitation prompted the evolution of vulnerability research along two distinct but complementary trajectories: biophysical vulnerability, which examines physical exposure to hazards, and social vulnerability, which analyses the socioeconomic and demographic conditions that affect a community’s capacity to respond to hazards (Cutter, 2024). When studied in isolation, each approach provides an incomplete understanding of vulnerability’s complex dimensions. Biophysical approaches often neglect social differentiation, while social vulnerability frameworks sometimes underestimate place-specific hazard characteristics.

Cutter (1996) “*Hazards of Place*” model represents a breakthrough in vulnerability research by integrating these previously separate traditions. Rather than treating vulnerability as either biophysically or socially determined, this model conceptualizes it as emerging from the dynamic interaction between biophysical risk factors and social conditions that shape adaptive capacity (Figure 7). This integration enables more nuanced analysis of why similar hazards produce dramatically different outcomes across urban populations.



**Figure 7** Cutter (1996) *Hazard of Place Model*

In urban climate contexts, this interactive approach explains why residents of the same neighborhood might experience climate impacts differently based on factors like income, housing quality, health status, and social networks. Recent applications of this model by Jagarnath et al. (2020) reveal how vulnerability within cities is unevenly distributed, with marginalized communities often concentrated in areas combining high physical exposure with limited adaptive capacity. This spatial coincidence of environmental and social vulnerability reflects historical patterns of discrimination in urban development rather than random distribution.

Building on this integrated understanding, Cutter et al., (2003) developed the Social Vulnerability Index (SoVI), providing a quantitative framework for measuring social vulnerability independent of hazard exposure. This index incorporates multiple socioeconomic and demographic variables, including income, age, education, housing quality, and resource access, using Principal Components Analysis (PCA) to enable comparative vulnerability assessments across regions. While initially developed for the U.S. context, researchers have adapted SoVI methodology for diverse national and urban settings, creating a flexible framework for identifying populations likely to face participation barriers in climate initiatives.

Despite its methodological sophistication, SoVI and similar index-based approaches have significant limitations for understanding participation barriers. As Rufat et al. (2019) demonstrate in their critical review, these indices often reduce vulnerability to static characteristics rather than dynamic processes, potentially reifying deficit-based perspectives of marginalized communities. Furthermore, these frameworks typically emphasize material dimensions of vulnerability while neglecting cultural, political, and historical factors that shape participation capacity. Nevertheless, vulnerability indices provide valuable starting points for identifying communities likely to face barriers to participation, particularly when supplemented with more contextually sensitive approaches.

### *Intersectionality and Exclusion*

While vulnerability frameworks identify broad patterns of risk distribution, they often inadequately capture how multiple dimensions of marginalization interact to create distinctive exclusion patterns. Conventional approaches that treat vulnerability categories as separate and additive fail to capture the complex, mutually constitutive nature of social difference.

Intersectionality theory, pioneered by legal scholar Crenshaw (1991) and later adapted to environmental contexts by Kaijser & Kronsell (2014), addresses this limitation by examining how overlapping social categories create compound patterns of exclusion and privilege (Figure 8).

Intersectionality theory is particularly valuable for understanding participation barriers because it explains why standardized engagement approaches frequently fail to reach multiply marginalized groups. As Hopkins (2019) demonstrates in her analysis of urban planning processes, individuals facing intersecting disadvantages encounter unique participation barriers that single-dimension approaches miss. For example, an elderly immigrant woman may face combined barriers related to language, digital literacy, physical mobility, and cultural expectations about public participation - a constellation of challenges not captured by addressing any single dimension in isolation. This intersectional complexity helps explain why even well-designed participation mechanisms may inadvertently exclude specific subgroups within broader “vulnerable” categories.



**Figure 8** *Intersectionality* (Hainer & Albright, 2020)

The application of intersectionality theory to participation barriers represents a significant methodological advance over traditional approaches that treat marginalized groups as internally homogeneous. By recognizing the heterogeneity within vulnerability categories, this framework enables more targeted and effective engagement strategies that account for specific barrier combinations. Climate initiatives in multicultural urban contexts particularly

benefit from intersectionality perspectives given the complex interactions between linguistic diversity, immigration status, socioeconomic position, and climate vulnerability.

Despite its explanatory power, intersectionality theory has limitations for practical application. As Osborne (2015) notes, the framework effectively identifies complex exclusion patterns but often provides insufficient guidance for designing interventions that address these patterns. This gap between theoretical understanding and practical application represents a significant opportunity for research examining specific participation barriers in diverse urban contexts.

### *Structural Injustice and Systemic Barriers*

While vulnerability and intersectionality frameworks illuminate how risk and exclusion are distributed, they must be complemented by theories explaining why these patterns persist. Young (2011) Theory of Structural Injustice provides a crucial perspective by focusing on the institutional systems that normalize inequality. Moving beyond individual-level explanations, Young critiques neoliberal ideologies that frame marginalization as resulting from personal choices rather than systemic failures.

Young's framework is particularly relevant for understanding participation barriers because it explains how institutional structures - not just individual circumstances - systematically exclude certain groups from decision-making processes. As Anguelovski et al. (2020) demonstrate in their analysis of urban climate governance, even well-intentioned participation methods often reproduce exclusion because they fail to address underlying structural inequalities in resources, time, knowledge, and power that determine who can effectively engage. This perspective helps explain why simply creating formal opportunities for participation rarely ensures equitable engagement without addressing structural conditions that enable or constrain participation.

The structural injustice framework has important implications for co-creation processes. Legitimate co-creation requires addressing not just immediate barriers to participation but the underlying institutional arrangements that generate these barriers. Without addressing these

structural dimensions, participation initiatives risk becoming what Fraser (1997) terms “affirmative remedies”, approaches that address symptoms of exclusion without transforming the systems producing it.

*Synthesis: Integrated understanding*

These three theoretical perspectives - vulnerability frameworks, intersectionality theory, and structural injustice - offer complementary insights for understanding participation barriers in urban climate co-creation. Their integration creates a more powerful analytical framework than any single perspective could provide. Vulnerability frameworks help identify which groups and locations face disproportionate climate risks and limited adaptive capacity, establishing the initial basis for prioritizing inclusion efforts. Intersectionality theory explains how multiple dimensions of identity create unique exclusion patterns requiring tailored engagement approaches rather than one-size-fits-all solutions. Structural injustice theory illuminates the institutional arrangements that systematically reproduce these patterns despite inclusive intentions, shifting focus from individual deficits to systemic reform.

Together, these frameworks suggest that addressing participation barriers requires multi-level interventions targeting both immediate obstacles to engagement and their underlying structural causes. This establishes the basis for examining specific participation barriers in urban climate co-creation and developing strategies that promote more equitable engagement. The next section explores how justice frameworks in climate, environmental, and design contexts can guide the development of these strategies.

### **2.2.3. Justice in Climate and Design**

The vulnerability and exclusion frameworks examined previously establish who faces barriers to participation and why, but they offer limited normative guidance for addressing these inequities. This section examines justice frameworks that provide ethical foundations for inclusive co-creation, progressing from broad theoretical principles to practical implementation approaches. These frameworks are essential for transforming descriptive understandings of participation barriers into prescriptive strategies for more equitable climate governance.

## *Justice in Climate and Urban Contexts*

Justice considerations in urban governance have evolved substantially over recent decades, reflecting broader shifts from narrowly distributive conceptions toward more comprehensive approaches addressing recognition and procedural dimensions. This evolution parallels growing awareness that climate change presents not only technical challenges but fundamental questions of fairness across multiple dimensions.

Fainstein's (2010) "Just City" framework marked a pivotal shift in urban justice theory by directly challenging growth-centered development paradigms that dominated urban planning. Her framework establishes three essential elements of urban justice: equity (fair distribution of resources and opportunities), democracy (inclusive decision-making processes), and diversity (recognition of different social groups and their needs). Fainstein articulates a fundamental principle - "No policy should make marginalized groups more marginalized" - that provides a clear ethical standard for evaluating urban climate initiatives. This criterion helps distinguish between climate interventions that merely achieve environmental goals and those that simultaneously advance social justice.

While Fainstein's work established important normative foundations, it faced substantive critique for insufficient attention to implementation challenges in diverse urban contexts. As Campbell (2013) argues, abstract justice principles often fail to translate into practice when confronting entrenched power structures and competing urban priorities. This critique highlights a persistent tension in justice frameworks: they provide valuable normative guidance but frequently struggle with operationalization in complex governance settings. For co-creation processes specifically, this tension manifests in the challenge of designing participatory mechanisms that genuinely transform power relations rather than merely performing inclusion.

Building on these urban justice foundations, Schlosberg and Collins (2014) developed a more comprehensive framework specifically addressing climate justice. Their influential work established that meaningful climate justice requires attention to three interconnected dimensions: distributional justice (who bears climate impacts and receives benefits), recognition justice (whose knowledge and experiences are valued), and procedural justice (who

participates in decision-making). This trivalent approach moves beyond narrowly distributional conceptions to acknowledge that climate injustice operates across multiple, mutually reinforcing dimensions - communities facing disproportionate climate impacts (distribution) often simultaneously experience their knowledge being devalued (recognition) and their voices excluded from decision-making (procedure). This multidimensional justice framework provides critical insights for analyzing participation barriers by highlighting how exclusion operates across interconnected dimensions.

Shi et al., (2016) further operationalized these concepts by developing a coherent roadmap for just urban climate adaptation focusing on four interconnected justice issues: (1) expanding meaningful participation in adaptation planning; (2) extending adaptation strategies to cities with limited capacity; (3) implementing integrated multilevel approaches to adaptation planning; and (4) seamlessly integrating justice considerations into infrastructure and urban design processes. This framework directly connects justice theory to practical climate initiatives, establishing specific capacities communities need to participate meaningfully in climate governance.

Despite their theoretical sophistication, urban and climate justice frameworks have significant limitations for addressing participation barriers in practice. As Eriksen et al., (2021) demonstrate, even justice-oriented initiatives sometimes inadvertently reinforce existing power hierarchies through participation methods that require specific educational backgrounds, communication styles, or cultural knowledge. This creates what they term “justice traps” - situations where ostensibly inclusive processes actually reproduce exclusion due to inattention to underlying power dynamics. These critiques highlight a fundamental limitation of many justice frameworks: they articulate compelling visions of just outcomes without sufficiently addressing the power dynamics that prevent their realization. These limitations highlight the need for more practical approaches that directly address power dynamics in participation processes.

*From principles to practice: Design Justice*

While urban and climate justice frameworks provide essential normative foundations, they often offer limited practical guidance for transforming planning and design processes. Costanza-Chock's (2020) Design Justice framework addresses this gap by focusing specifically on how design processes can challenge or reinforce existing power structures. Rather than simply critiquing current practices, this model provides concrete principles for transforming design methodology to benefit historically marginalized communities (Figure 9).



**Figure 9** Costanza-Chock (2020) *Design Justice*

The Design Justice approach directly addresses a critical limitation of many participatory methods: their failure to redistribute power despite inclusive rhetoric. As Costanza-Chock explains, even participatory design methods are never neutral, they inevitably reflect and reinforce the values, biases, and power structures of their creators. This insight helps explain why conventional participation approaches often fail to engage marginalized groups despite inclusive intentions: they maintain underlying power dynamics that determine whose knowledge is valued and whose participation is considered legitimate.

The framework's most significant contribution lies in its shift from designing for communities to designing with them through several key principles:

- **Center marginalized voices** in all stages of the design process
- **Prioritize design's impact** on communities over designers' intentions

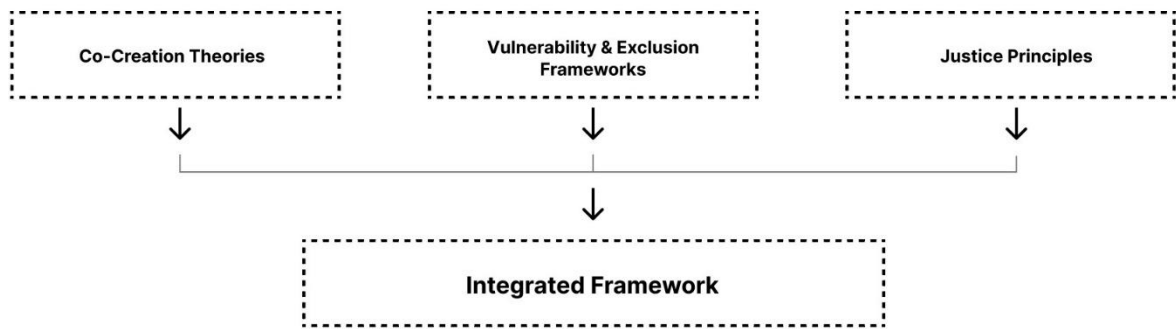
- **View design as a collaborative**, not individual practice
- **Value non-professional design knowledge** equally to technical expertise
- **Develop mechanisms for accountability** to affected communities

These principles provide practical guidance for addressing participation barriers by transforming how co-creation processes operate. Rather than simply inviting marginalized groups into pre-determined processes, Design Justice fundamentally restructures these processes to redistribute power and center previously excluded perspectives.

In conclusion, justice frameworks have evolved from identifying inequalities to implementing practical solutions. While participation is seen as a key element of justice, its traditional methods often fail to meaningfully involve marginalized groups. The Design Justice model addresses this limitation by reframing participation as essentially a redistribution of power. By moving from design for to design with marginalized communities, this approach transforms traditional participation into community-led collaboration. The research will use this model as a key basis for analyzing participation barriers in urban climate initiatives.

#### **2.2.4. Section Summary**

The theoretical frameworks outlined above, from participation models and vulnerability assessments to justice frameworks, provide the conceptual foundation for understanding how co-creation can address exclusion in urban climate regeneration. The chapter's key theoretical contribution lies in the integration of these typically separate domains into a coherent analytical framework (Figure 10). Co-creation theories establish the importance of meaningful participation across multiple development stages but require vulnerability and exclusion perspectives to identify who remains excluded and why. These vulnerability and exclusion frameworks, in turn, need justice principles to move from descriptive analysis to prescriptive strategies. Only by examining these interrelationships can we develop a comprehensive understanding of both the mechanisms of exclusion and pathways toward more inclusive practice.

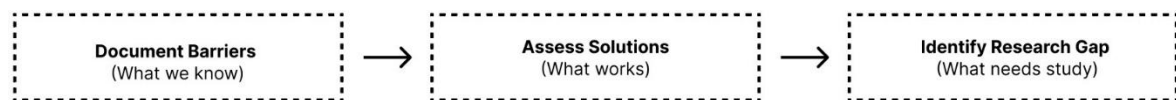


**Figure 10** *Theoretical Framework*

However, translating these frameworks into effective practice requires examining how these concepts manifest in real-world settings. The following section bridges theory and practice by examining empirical evidence of participation barriers, documented solutions, and contextual challenges within urban climate initiatives. This practical lens allows us to understand how theoretical concepts like Design Justice and vulnerability frameworks can inform actionable strategies for the Malmi District context, while also highlighting the gaps between theoretical ideals and practical realities that this research aims to address.

### 2.3. Empirical Research

This section examines empirical evidence of how participation barriers manifest in urban climate initiatives and documents strategies that European cities have used to address these challenges. Building on the theoretical frameworks established in Section 2.2, this section first synthesizes documented participation barriers, then reviews intervention strategies as potential inspiration for addressing similar challenges in different contexts. The section concludes with analysis of Malmi District's characteristics to establish why it represents an appropriate case study for this research.



**Figure 11** *Empirical Research Process*

#### 2.3.1. Barriers to Participation in Co-Creation Processes

Research across European urban contexts has identified five primary categories of barriers that prevent marginalized groups from participating effectively in co-creation processes for

urban climate initiatives. Understanding these barriers provides foundation for anticipating challenges and designing appropriate research approaches.

### *Accessibility Barriers*

The most fundamental obstacles to participation are accessibility barriers, which determine who can physically and linguistically access participation opportunities. Language differences represent the most frequently documented barrier in multilingual urban contexts. Non-native speakers struggle to understand technical terminology and express their views in the majority language (Anguelovski et al., 2016; Nunes et al., 2021). This barrier is especially pronounced in climate discussions that rely heavily on specialized vocabulary.

Beyond linguistic challenges, physical accessibility creates additional exclusion when events are held in locations difficult to reach via public transportation or inaccessible to those with mobility limitations. Fallov & Jørgensen (2018) document how participation venues in Danish marginalized neighborhoods exclude elderly residents and people with disabilities through poor location choices.

Compounding these traditional accessibility issues, digital participation methods create barriers through the digital divide that disproportionately affects immigrants, elderly residents, and lower-income groups (Nunes et al., 2021). These technological barriers often compound other forms of exclusion, creating multiple obstacles for the same individuals.

### *Trust and Relationship Barriers*

While accessibility barriers determine initial access, trust and relationship barriers affect sustained engagement. Trust deficits between marginalized communities and institutions create significant obstacles to participation. Bradley & Mahmoud (2024) document how past experiences of tokenistic participation create persistent skepticism toward new engagement initiatives. This mistrust becomes self-reinforcing when communities most vulnerable to climate impacts become least likely to participate in adaptation planning.

The relationship dimension reveals how participation approaches affect trust-building. Leino & Puumala (2021) show that Finnish urban planning's reliance on transactional, one-time consultation events fails to build the sustained relationships necessary for meaningful co-

creation. When planning teams lack diversity reflecting the community, engagement rates from minority groups remain consistently low (Kaijser & Kronsell, 2014).

#### *Design and Process Barriers*

Participation process design significantly impacts who can engage effectively. Abderhalden et al. (2025) document how conventional participation formats privilege professional communication styles and formal education backgrounds, creating environments where certain voices dominate while others are marginalized.

At the operational level, practical design elements - timing, formats, and locations - directly exclude certain demographics (Bradley & Mahmoud, 2024). More fundamentally, many participation mechanisms remain largely symbolic, offering limited opportunities for genuine dialogue or influence (Rodríguez-Izquierdo et al., 2010). Without clarity about how community input affects final decisions, participants quickly disengage (Quick & Feldman, 2011)

#### *Resource and Capacity Barriers*

Participation requires resources that are unequally distributed across society. Time constraints particularly affect working parents, shift workers, and those with multiple jobs, who often cannot attend scheduled events regardless of their interest in the issues (Bradley & Mahmoud, 2024). Financial resources also determine participation ability, as even "free" events involve hidden costs for transportation, childcare, and potentially lost income.

Additionally, knowledge disparities create barriers when participation requires understanding complex environmental concepts. Fischer (2000) shows how technical knowledge requirements privilege professionals while excluding those without specialized education. Limited organizational capacity within marginalized communities affects their ability to mobilize for sustained participation compared to neighborhoods with robust community infrastructure (Rodríguez-Izquierdo et al., 2010).

#### *Institutional and Power imbalances Factors*

Broader institutional arrangements constrain participation regardless of individual project intentions. Leino & Puumala (2021) identify how administrative structures prioritize efficiency over inclusion, with bureaucratic procedures creating systemic barriers to meaningful engagement.

Most fundamentally, power imbalances represent structural barriers to equitable participation. Lund (2018) demonstrates how those with greater political influence, economic resources, or social status dominate decision-making processes. These dynamics are particularly pronounced in climate discussions where technical expertise is highly valued, often marginalizing experiential knowledge from communities directly experiencing climate impacts.

#### *Interconnection of Barriers*

Research consistently shows these barriers operate as an interconnected system rather than isolated obstacles. Language barriers compound knowledge disparities, which further exacerbate power imbalances during discussions. Accessibility challenges intersect with trust deficits to create compound patterns of exclusion.

In conclusion, these categories of barriers present significant challenges for engaging marginalized communities in urban climate co-creation processes. The next section will examine strategies that have successfully addressed these barriers.

### **2.3.2. Strategies for Addressing Participation Barriers**

Many European cities have developed various strategies to address participation barriers and enhance marginalized group engagement in urban climate initiatives. This section catalogs documented approaches that provide potential models for addressing participation challenges.

#### *Community-Based Representation Strategies*

Empowering individuals from marginalized communities to serve as bridges between formal institutions and these groups has shown effectiveness in multiple contexts. The Black &

Green Ambassadors program in Bristol recruited and trained emerging leaders from underrepresented ethnic communities to engage with environmental issues (Wallace, 2018).

Building on this model, Copenhagen's climate ambassador program trained residents from immigrant neighborhoods to communicate complex climate concepts in culturally relevant ways, resulting in increased participation rates among diverse populations and greater retention throughout planning processes (Hofstad et al., 2021)..

#### *Local Empowerment Approached*

Vienna's "Grätzloase" (Neighborhood Oasis) program empowers residents to initiate and implement public space transformations. Since 2015, over 350 green parklets have been created, positioning residents as co-initiators rather than co-implementers. This represents the highest level of participation in Voorberg's framework.

#### *Culturally Inclusive Methods*

The URBiNAT project employed diverse participatory tools - Cultural Mapping, Motivational Interviewing, Walkthroughs, and Photovoice - to accommodate diverse cultural expressions and communication styles (Moniz et al., 2022). These methods reduced reliance on traditional verbal discussion formats, enabling participation from groups typically excluded by conventional approaches.

#### *Accessibility-Focused Approaches*

Strategies bringing participation opportunities directly to communities address physical and cultural accessibility barriers. The International City/County Management Association emphasizes using familiar local venues such as cultural centres and religious institutions (Di Giovanna, 2021). This approach builds on existing community trust networks while addressing accessibility concerns.

#### *Power Redistribution Strategies*

Copenhagen's "tenant democracy" model granted tenants formal decision-making authority over budgeting and development decisions in marginalized housing estate redevelopment.

This power redistribution resulted in higher participation rates and greater implementation success compared to conventional consultation approaches (Kjeldsen & Joseph, 2024).

### *Participatory Budgeting and Resource Allocation*

Lisbon's Participatory Budgeting allows citizens to vote on municipal fund allocation, with on-site assemblies aimed at diversifying participation. The 2020 Green Participatory Budget combined in-person engagement with digital platforms, though evaluations highlighted challenges with organized group dominance (Center for Public Impact, 2021).

### *Innovative Formats*

The LiLa4Green project in Vienna utilized playful methods such as gamified urban labs and visual brainstorming sessions to engage communities in climate adaptation discussions. These creative approaches facilitated inclusive participation by making complex topics more accessible (Pappa, 2023)

Similarly, Decidim Barcelona provided a hybrid digital platform for participatory democracy, integrating online and offline tools to enhance civic engagement. While not exclusively targeting marginalized groups, its inclusive design principles contributed to broader participation (Satorras et al., 2020)

The documented strategies reveal important patterns in how different approaches address the five categories of participation barriers identified in Section 2.3.1. Table 1 provides a systematic analysis of each strategy's effectiveness in addressing specific barrier types, revealing both the strengths and limitations of current approaches.

Method	Accessibility	Trust & Relationship	Design & Process	Resource & Capacity	Institutional & Power
Community Ambassadors	●●●	●●●	●●	●●	●
Resident-Led Initiatives	●●	●●●	●●●	●●	●●●
Visual Documentation Methods	●●●	●●	●●●	●	●
Local Venue Engagement	●●●	●●●	●●	●●	●
Tenant Democracy	●	●●●	●●●	●●	●●●
Participatory Budgeting	●●	●●	●●●	●	●●●
Hybrid Digital Platforms	●●●	●	●●●	●	●

●●● = Directly addresses barrier | ●● = Partially addresses | ● = Minimal impact

**Table 1** Effectiveness of Participation Strategies Across Barrier Categories

### 2.3.3. Malmi District

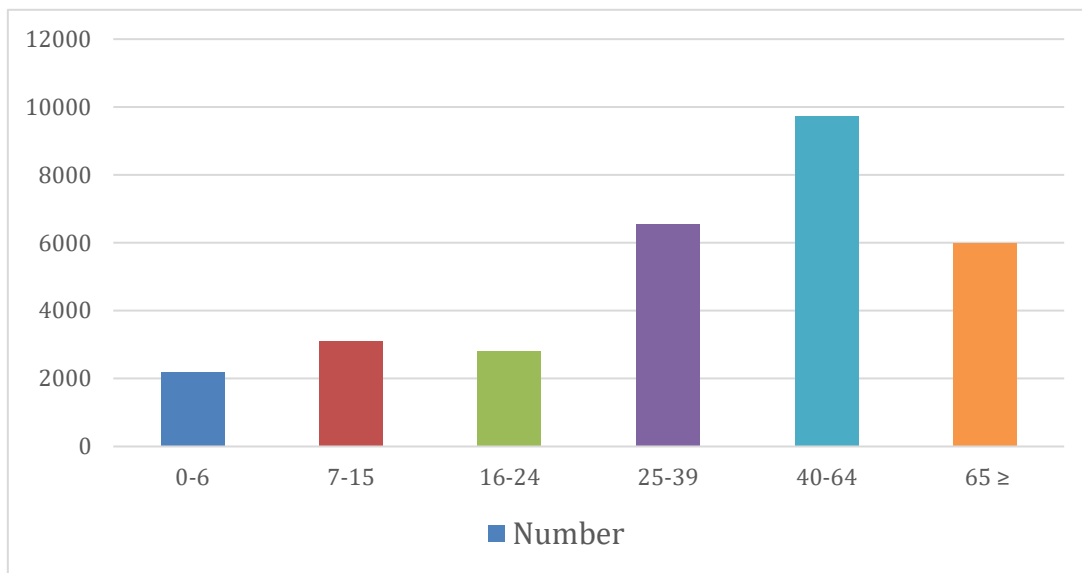
Malmi District constitutes an ideal context for investigating participation barriers and engagement strategies in urban climate initiatives (Figure 11). This section establishes the empirical rationale for case study selection based on demographic, socioeconomic, and contextual factors that make the district particularly relevant for participation research.



**Figure 12** Malmi District Map

## Demographic Composition and Diversity

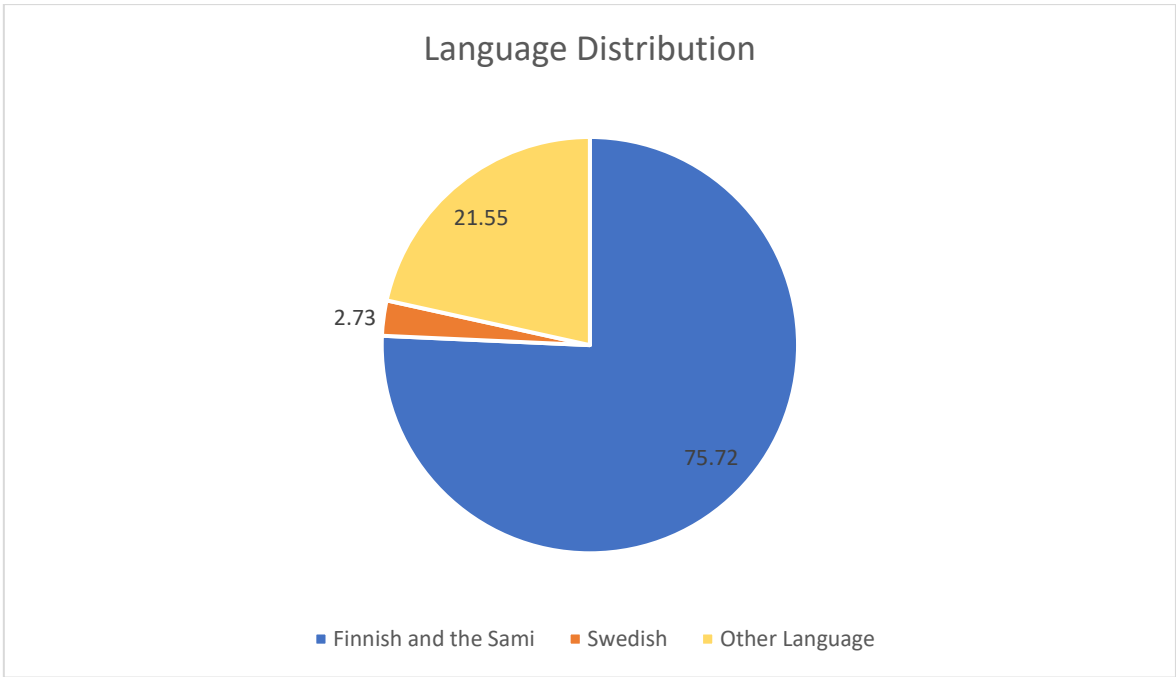
With approximately 30,000 inhabitants, Malmi exhibits significant demographic diversity across age and linguistic dimensions (City of Helsinki, 2024). According to Statistics Finland (2024) the age structure shows balanced distribution: working-age adults (40-64 years) at 32.03%, young adults (25-39 years) at 21.56%, and seniors (65+ years) at 19.70%, with youth distributed across children under 7 (7.2%), school-age children (7-15 years) at 10.20%, and adolescents/young adults (16-24 years) at 9.26% (Figure 12).



**Figure 13** *Age Structure*

This age diversity creates varied perspectives on climate priorities and distinct participation needs across life stages, making Malmi suitable for investigating how different demographic groups experience participation barriers and engage with various strategies.

Equally important for participation research, linguistic diversity represents a critical dimension. Finnish and Suomi speakers constitute 75.72% of residents, Swedish speakers 2.73%, while foreign-language speakers reach 21.55%, with Russian, Estonian, and Somali as the largest non-Finnish language communities (Statistics Finland, 2024). This linguistic heterogeneity provides opportunity to investigate how language barriers operate across multiple language groups and which communication strategies prove most effective.

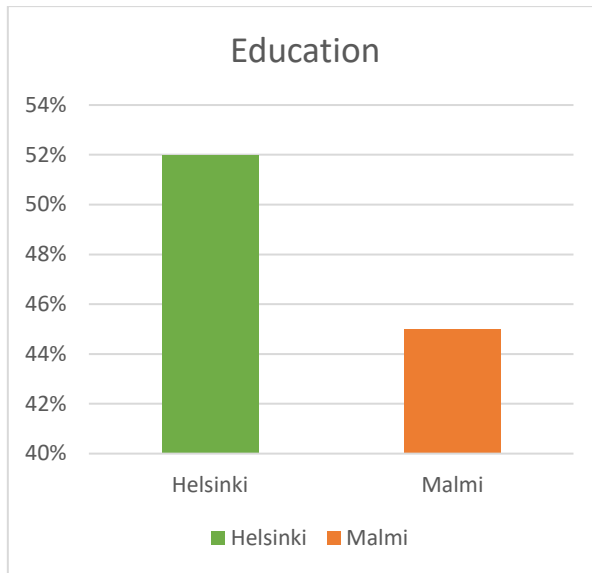


**Figure 14** *Language Distribution*

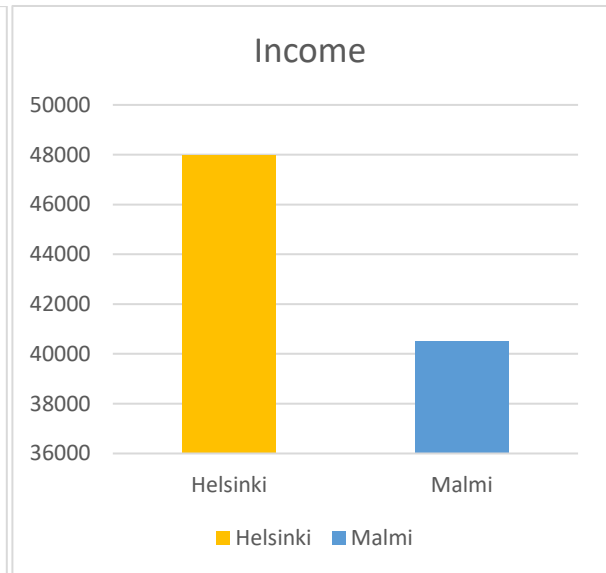
*Socioeconomic Factors*

Beyond demographic diversity, Malmi exhibits socioeconomic characteristics that research suggests create participation challenges. Approximately 45% of residents possess higher education qualifications, significantly lower than Helsinki averages, while unemployment rates exceed city levels by about 10% (City of Helsinki, 2019). Median household income falls below Helsinki averages at approximately 40,000-50,000 euros annually.

This combination of lower educational attainment, higher unemployment, and reduced income levels suggests multiple resource and capacity barriers likely affect residents’ ability to engage in co-creation processes. These characteristics make Malmi valuable for investigating how socioeconomic factors interact with other barriers to limit participation.



**Figure 16** *Education Level*



**Figure 15** *Median household income*

### *Development Trajectory*

Adding complexity to these demographic and socioeconomic factors, Malmi is undergoing significant transformation through the Malminkenttä development, converting the former airport site to accommodate approximately 25,000 new residents over coming decades, effectively doubling the district’s population (City of Helsinki, 2022). This rapid growth creates complex participation dynamics, with opportunities for establishing inclusive processes alongside challenges of ensuring existing communities maintain influence amid demographic shifts.

In this context of urban transformation, Malmi has been selected as a pilot site for the Green-InCities project, which aims to develop transformative, nature-based solutions for urban climate regeneration by exploring and experimenting with different types of green infrastructure solutions (GreenIncities, 2024).

The project, involves 11 cities across Europe. In Helsinki, the project specifically targets Longinoja Park in the Malmi district, aiming to co-create a sustainable urban green space that fosters climate adaptation, supports biodiversity, and improves community well-being through nature-based solutions (GreenIncities, 2024). This focus on co-creation with vulnerable groups makes the project particularly relevant to this research on addressing participation barriers in urban climate initiatives.

This combination of socioeconomic characteristics, linguistic diversity, imminent large-scale development, and participation in an innovative climate adaptation project makes Malmi an ideal context for examining how co-creation approaches can address participation barriers and promote more equitable outcomes in urban regeneration processes.

#### **2.4. Research Gap**

Through a series of collaborative workshops and discussions with the staff Forum Virium Helsinki in January 2025, this research topic was refined to address the specific challenges encountered in engaging marginalized groups within the GreenInCities project in Malmi District. While extensive theoretical literature documents participation barriers faced by marginalized communities in urban climate initiatives (e.g., (Anguelovski et al., 2016; Bradley & Mahmoud, 2024), there remains a significant gap in practical, context-specific strategies that account for the unique socio-economic and cultural dynamics of Malmi District. Characterized by high linguistic diversity (21.55% foreign-language speakers) and pronounced socio-economic challenges (e.g., 10% higher unemployment rate than Helsinki's average, lower median income; (Statistics of Finland), Malmi requires tailored engagement approaches that generic frameworks fail to adequately address. Furthermore, existing research predominantly focuses on identifying barriers rather than developing actionable solutions to overcome them (Voorberg et al., 2014). This study aims to bridge these gaps by not only pinpointing the specific barriers to participation in Malmi but also by proposing and evaluating practical recommendations to enhance the inclusion of marginalized groups in co-creation processes, thereby contributing directly to the successful implementation of the GreenInCities project and broader urban climate regeneration efforts.

#### **2.5. Chapter Summary**

This chapter examined key theoretical frameworks and empirical findings relevant to understanding barriers to participation in urban climate co-creation. Through the lenses of co-creation theory, vulnerability frameworks, and justice principles, we established how participation barriers systematically exclude marginalized groups. The empirical evidence revealed five interconnected barrier categories; accessibility, trust, design, resource, and institutional factors, while highlighting promising engagement strategies from European contexts. Analysis of Malmi District's distinctive demographic composition and socioeconomic

challenges provided context for our investigation of inclusive co-creation approaches. These theoretical foundations and empirical findings directly informed our research questions, which aim to generate practical strategies tailored to Malmi’s unique context while contributing to broader theoretical understanding of equitable participation in urban climate initiatives.

### 3. RESEARCH DESIGN

#### 3.1. Research strategy

This study adopts an interpretivist philosophy, which recognizes that social realities are constructed through subjective experiences and interactions (Saunders et al., 2007). This approach is well-suited to exploring the nuanced perspectives of marginalized groups in Malmi District, as it prioritizes their lived experiences over a singular, objective truth, aligning with the research’s aim to design inclusive co-creation processes. The qualitative methodology facilitates in-depth investigation of participation barriers, employing a case study approach centered on the Malmi District. This district’s socio-economic diversity and cultural heterogeneity provide a rich context for examining context-specific challenges.

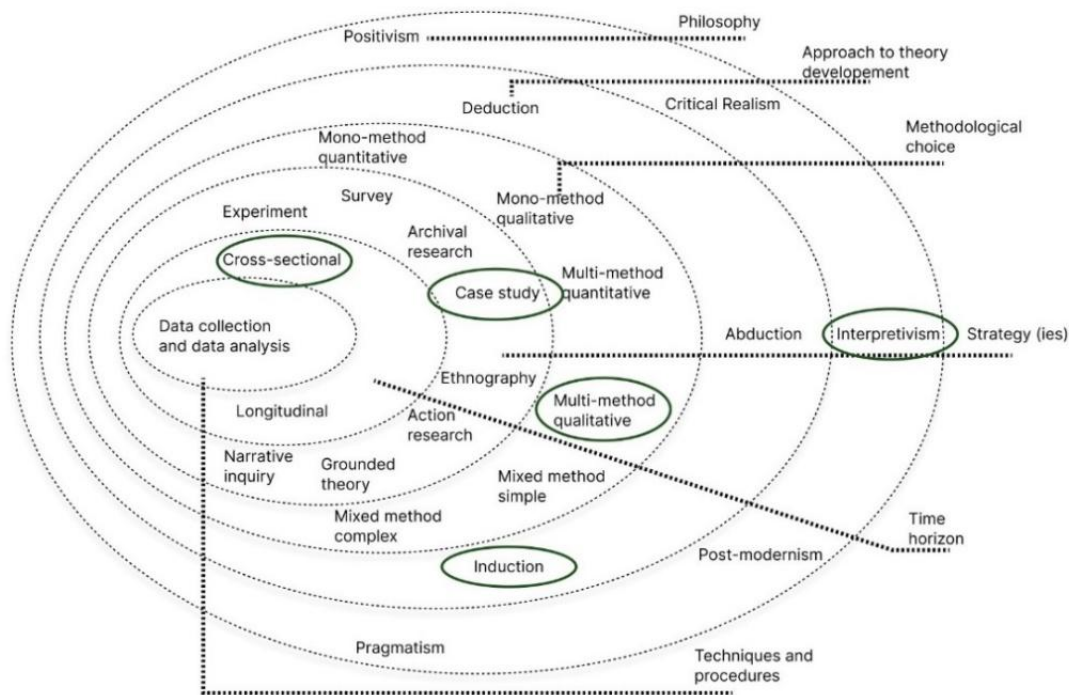
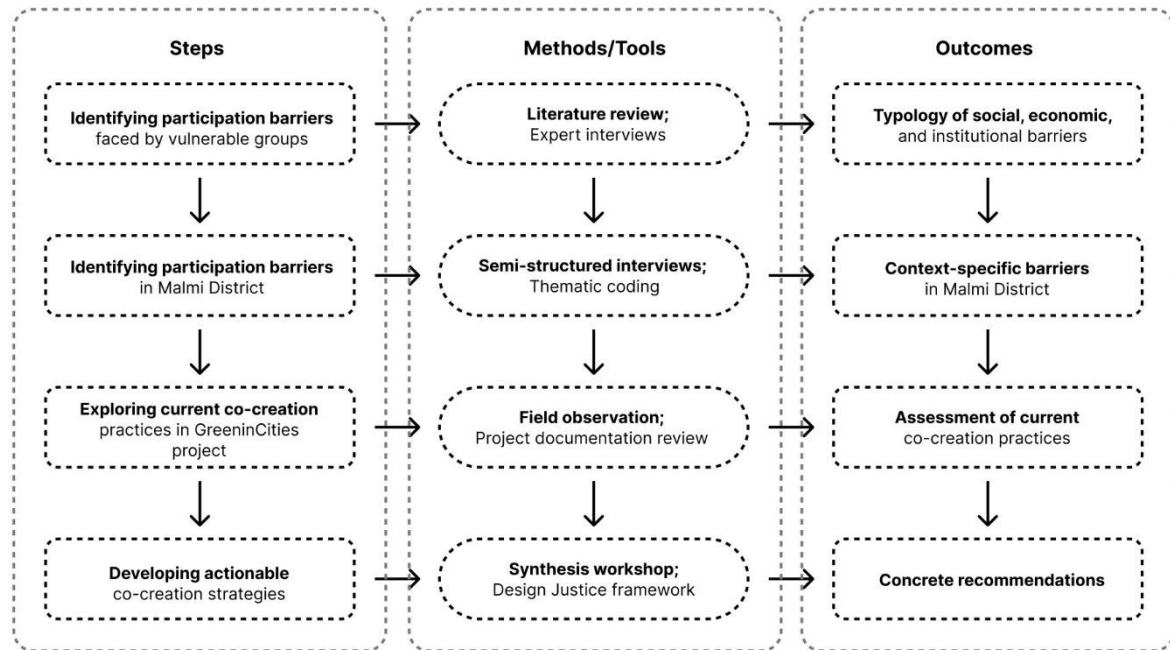


Figure 17 Research onion (Saunders et al, 2007)

### 3.2. Research method

The study employs three complementary qualitative methods to ensure a robust data set:



**Figure 18** *Research Process Framework*

- *Literature Review:* A systematic review of academic, practical, and grey literature was conducted using databases (e.g., Google Scholar, University of Lapland database) and keywords like "co-creation" and "participation barriers." Approximately 50 sources informed the theoretical framework and research gap.
- *Semi-structured Interviews:* Two interview types were conducted: brief interviews with Malmi residents (10-15 minutes) and longer sessions with subject matter experts (20-30 minutes). Questions explored barriers and inclusive mechanisms, analyzed via thematic analysis.
- *Field Observation:* Observations of a GreenInCities co-creation workshop focused on participant demographics, engagement dynamics, and organizational structure, documented using a structured analysis framework. An additional field observation was conducted with the staff of the GreenInCities project in the Malmi district.

### **3.3. Research target**

Participants were selected using purposive sampling to represent key marginalized groups identified by Statistics of Finland (2024) and Inclusive Plan (2024) created by the GreenInCities project. Using Helsinki's statistical data, we identified priority populations facing participation barriers in Malmi District. The main groups in our research include: older residents, people with low incomes, individuals with a history of substance and alcohol abuse, immigrants and non-Finnish speakers, people with disabilities, young people, and others. The sample included 2-5 participants from each identified group and 4 experts in the field. Participants were recruited through collaboration with grassroots organizations in Malmi District. These partnerships were crucial for reaching out to different people.

### **3.4. Data collection**

Data collection occurred from February to March 2025, aligning with GreenInCities activities. Expert interviews (n=4) were conducted online via Zoom (15-20 minutes each), recorded, and transcribed. Resident interviews (n=16) were held face-to-face in community settings, supported by local organizations for logistics and translation. A workshop observation on March 12, 2025, captured real-time participation dynamics. All data was anonymized, with interviews transcribed and observations documented for thematic analysis, ensuring a comprehensive exploration of barriers and strategies.

## **4. RESULTS AND FINDINGS**

### **4.1. Introduction**

This chapter presents findings from data collected through 16 semi-structured interviews with Malmi residents and 4 expert interviews, complemented by observations from a co-creation workshop conducted between February and March 2025. Resident participants represented diverse marginalized groups including elderly residents (n=4), low-income individuals (n=2), migrants/non-Finnish speakers (n=4), people with disabilities (n=2), alcohol and drug abuse (n=2) and youth (n=2). Expert participants included local expert, living lab researchers, urban planners, and community engagement specialists.

The findings are organized into four main categories: barriers to participation, the impacts of these barriers on specific marginalized groups, resident-suggested mechanisms for inclusive co-creation, and actionable inclusion strategies. All participant references have been anonymized using alphanumeric codes to ensure confidentiality while maintaining data integrity.

## **4.2. Barriers to Participation**

The analysis of resident interviews revealed six primary categories of barriers: communication and language, trust and relationship, accessibility and resources, design and process, and motivation and value. These categories align with the first research sub-question (RQ1): *What kind of barriers prevent marginalized and vulnerable groups in Malmi District from participating in co-creation processes?*

### **Communication and Language Barriers**

Communication and language barriers create two related but distinct challenges that affect who can participate in co-creation processes. These barriers work at different stages - first affecting who becomes aware of opportunities, then affecting who can engage once they know about them.

Information access creates the first challenge, determining who learns about participation opportunities. Respondent R3 (51-65 age group, migrant, 8 months in Malmi) explained: "The knowledge sharing is a barrier because people don't know how to get active and to organize. I asked people but they didn't know about activities to get together. So, it's lack of information." This shows how standard communication methods may reach some community members more effectively than others.

The consequences of information gaps become clear when residents miss opportunities they would have wanted to join. Respondent R1 (60 years old, migrant, 25 years in Malmi) explained: "I never received any invitations to participate. I would have joined if I had known about these activities. It would help to have someone explain how to participate and where to go." This pattern suggests that current information distribution methods may not reach all community segments equally.

Once people know about opportunities, language barriers affect who can engage meaningfully. As Respondent R4 (35 years old, migrant, 6 years in Malmi) stated simply: “Language is a barrier - everything is in Finnish.” When activities use only Finnish, this creates easier participation for Finnish speakers while presenting challenges for those more comfortable in other languages.

Workshop observations demonstrated these language dynamics in practice. The session used only Finnish and included technical climate discussions. This created a situation where participants were predominantly Finnish speakers.

### **Trust and Relationship Barriers**

Trust challenges reflect past experiences with participation processes rather than individual scepticism. These barriers show the importance of building real relationships with marginalized communities over time. Respondent R14 (50+ age group, with history of substance abuse, 25 years in Malmi) explained this perspective: “I question whether I can trust the process and the outcomes. Often organizations just apply for funding without delivering meaningful results. Effective initiatives should originate from community members rather than being driven primarily by financial motives.”

This perspective shows how marginalized communities evaluate whether participation processes will actually use their input meaningfully. The same respondent’s concerns about stigmatization show how trust barriers connect with identity-based challenges: “I’ve been sobered for 5 months after 20 years of alcoholism. I’m very sensitive about stigma. I want to feel welcome, be seen, and feel that I’m accepted here.” This statement shows how concerns about acceptance can affect willingness to participate.

Expert interviews confirmed that trust represents a basic requirement that needs attention. Expert E2 emphasized: “Working close together with the community where they live and having some representative for them is really important. We reached out to them with the specific local service centre to have separate sessions.” This shows that trust requires ongoing relationship-building rather than one-time invitations.

## **Accessibility and Resource Barriers**

Accessibility barriers create challenges through assumptions about what participation requires. Physical limitations combine with economic constraints to create multiple obstacles that need different solutions. Multiple elderly respondents explained how physical barriers affect them: “Physical problems with walking are a barrier” and “Physical disability is a barrier” (Respondents R10 and R9). These statements show how current formats may work better for those without mobility challenges.

Transportation creates additional barriers that have economic dimensions. Respondent R9 emphasized: “Proximity is what matters - it has to be close enough.” This requirement reflects practical needs, as transportation costs represent real barriers for people with limited income. The workshop’s location required either private vehicle or lengthy public transit, which may have affected who could attend.

Digital requirements create challenges that particularly affect elderly residents, migrants, and lower-income groups. Expert E1 identified this pattern: “The digital literacy is quite low. So, then you have to perform the surveys on paper. You have to put them yourself in the digital platform.” This shows how digital methods may exclude some community members while including others.

Time constraints create challenges for those with less flexible schedules. Respondent R6 (30 years old, native Finnish speaker, 6 months in Malmi) noted: “Timing is a challenge because of work and school commitments.” This barrier shows how participation timing may work better for some people’s schedules than others.

## **Design and Process Barriers**

Participation design affects who feels comfortable contributing through the formats and styles used. Workshop observations revealed how discussion formats can create uneven participation patterns. Some individuals spoke more frequently in group discussions, not through bad intentions but because the format worked well with their communication style, confidence level, and familiarity with meeting procedures.

The workshop's focus on open discussion showed how standard formats may work differently for different people. Some participants were comfortable speaking up while others remained quieter. Expert E1 recognized this dynamic: "You have to look from use case to use case what exactly you want to do and what is the vulnerability that they are facing. Is it financial issues? Is it lower socioeconomic status? Are they elderly people that are more frail?" This shows that different groups may benefit from different engagement approaches.

The lack of structured methods to ensure everyone could contribute equally shows how standard democratic formats may not automatically include all voices. The resulting pattern, where some speakers dominated while others stayed quiet, reflected broader differences in comfort with formal discussion settings.

### **Motivational and Value Perception Barriers**

Motivation challenges reflect practical calculations rather than lack of interest. Marginalized communities, facing multiple demands on their time and resources, need clear reasons to invest in participation. Respondent R4 (35 years old, migrant, 6 years in Malmi) articulated this calculation: "I should have a take away - not just participate. Learning skills, language - I would participate if I get something." This shows that people want to understand what they will gain from participating.

When previous participation doesn't lead to visible outcomes, this affects motivation for future involvement. Expert E5 identified this pattern: "When we explicitly showed how resident input changed the original plans, people became more willing to participate in future activities." This shows that motivation connects to seeing concrete results from participation.

These motivation patterns show how many participation processes may not clearly communicate benefits to participants. Marginalized groups, already managing multiple demands on their time, naturally prioritize activities that offer clear benefits over processes with unclear outcomes.

## Synthesis

These barrier categories work together as a connected system that creates reinforcing patterns (Table 2). Language barriers combine with trust challenges when residents cannot understand participation processes, making them uncertain about what to expect. This language exclusion then connects with design barriers when participation formats focus on verbal discussion in Finnish, making it harder for migrants and non-Finnish speakers to influence what gets discussed.

The workshop observation showed these connections in practice. The combination of Finnish-only proceedings and discussion-heavy formats created multiple barriers that affected participation along overlapping lines of language and comfort with formal discussion. The resulting participant demographics may have reinforced assumptions about community composition while making the barrier-creating processes less visible.

**Table 2** *Summary of Barriers to Participation*

<b>Barrier Category</b>	<b>Description</b>	<b>Quotes</b>
Communication and Language	Language barriers, lack of translated materials, information access challenges	“Language is a barrier - everything is in Finnish.” (R4)
Trust and Relationship	Skepticism about outcomes, feeling excluded, lack of community connections	“I question whether I can trust the process and the outcomes.” (R14)
Accessibility and Resources	Physical limitations, distance to venues, digital literacy, time constraints	“Physical problems with walking are a barrier.” (R10)
Design and Process	Domination by vocal participants, complex participation methods	Workshop observations revealed that certain individuals dominated the group discussions, potentially limiting the input from less assertive participants.
Motivation and Value	Unclear benefits, lack of visible outcomes, competing priorities	“I should have a take away - not just participate.” (R4)

### 4.3. Impact on Different Groups

This subsection analyses how barriers affect specific marginalized groups differently, addressing the second research sub-question (RQ2): *How do these barriers specifically affect marginalized and vulnerable groups?* Rather than treating marginalized communities as the

same, the analysis reveals how different identities create unique patterns that require different solutions.

### **Impact on Elderly Residents**

Elderly residents encounter different barriers. Physical accessibility challenges reflect not just individual limitations but design choices that may not accommodate different physical abilities. Multiple respondents explained these barriers: “Physical problems make it hard for both of us to participate” (R10). This shows how current approaches may be easier for those without mobility challenges.

Time preferences show how scheduling choices affect different age groups differently. Respondent R9 (51+ age group, with disability) stated: “Time is a problem - morning fits for me.” This preference reflects how energy levels and daily routines vary, and evening events may work better for some people than others. Current scheduling patterns may inadvertently work better for certain age groups.

Digital requirements create additional challenges for elderly residents who may be less familiar with online platforms or have limited technology access. These barriers increase when processes shift toward digital methods without providing alternative ways to participate.

### **Impact on Migrants and Non-Finnish Speakers**

Migrants and non-Finnish speakers experience challenges through communication systems designed around Finnish language use. Information awareness creates the primary challenge, as Respondent R1 (60 years old, migrant, 25 years in Malmi) reported: “I never got invited to participate.” This shows how standard communication methods may not reach all community members equally.

Language barriers combine with cultural differences to create multiple participation challenges. Respondent R4 (35 years old, migrant, 6 years in Malmi) noted difficulties in getting information without direct outreach, showing how passive information sharing may not reach all community members.

Community connection patterns work differently for recent migrants compared to non-Finnish speakers with longer residence. Respondent R3 (51-65 age group, migrant, 8 months in

Malmi) compared experiences: “At Vaasa there were fewer foreign people - grouping was easier when we were a smaller group. Malmi is bigger - harder to get together - you don't know who is the leader in Malmi.” This shows how community size and composition affect social network formation and participation.

Cultural adaptation needs show that standard engagement approaches may not accommodate diverse preferences. Respondent R5 (31-50 age group, migrant, 6 years in Malmi) suggested: “They should use formal text and get representatives from other ethnicities. Workshops should fit our needs.” This recommendation shows awareness that effective inclusion may require adapting approaches rather than expecting communities to adapt to standard formats.

### **Impact on People with Substance/Alcohol Abuse History**

Participants with histories of substance abuse encounter barriers through stigmatization that can prevent participation before it begins. Respondent R14 (50+ age group, with history of substance abuse, 2 months in Malmi) emphasized: “I want to feel welcome, be seen, and feel that I'm accepted here.” This need for acceptance shows how concerns about judgment can affect willingness to participate.

Past experiences with judgmental responses create lasting barriers. The same respondent described a discouraging encounter: “When I encountered a community cleaning group, they criticized our smoking instead of inviting us to participate. Their unwelcoming attitude discouraged me from joining future activities.” This experience shows how responses from representatives can affect future participation willingness.

Engagement format preferences show the importance of practical rather than abstract participation opportunities. Respondent R14 specified: “I need something practical, not just questionnaires.” This preference reflects how discussion-heavy formats may not work as well for people facing immediate, concrete challenges.

### **Impact on Low-Income Residents**

Economic barriers work through hidden costs that make supposedly “free” participation difficult for those with limited resources. Transportation costs represent real obstacles, as Respondent R4 (35 years old, migrant, 6 years in Malmi) requested: “If they could at least send

us an email to explain if there is free activity." This request shows how uncertainty about costs creates additional barriers for those managing tight budgets.

Expert interviews confirmed these economic patterns. Expert E1 explained: "Do they have the means to go there? That's something you have to arrange and facilitate for them to come to that location." This shows that meaningful accessibility may require addressing practical resource needs.

Incentive approaches recognize that marginalized communities invest time and energy when participating. Expert E2 described their approach: "They get a voucher from us that they can use to buy a book or something in their community. We also pay their transport costs to come to the facility." This approach acknowledges that meaningful inclusion may require addressing practical participation costs.

**Table 3** *Impact of Barriers on Different Groups*

<b>Group</b>	<b>Primary Barriers</b>	<b>Quotes</b>
Elderly Residents	Physical accessibility, morning time preferences	"Physical problems make it hard for both of us to participate." (R10)
Non-Finnish Speakers	Language, information access, community connection	"Language is a barrier - everything is in Finnish." (R4)
People with Substance Abuse History	Stigma, need for welcoming environment, trust	"I want to feel welcome, be seen, and accepted here." (R14)
Low-Income Residents	Transportation costs, resource limitations	"If they could send us an email to explain if there is free activity." (R4)

#### **4.4. Effective Engagement Mechanisms**

This subsection analyses mechanisms suggested by residents to create more inclusive engagement, addressing the third research sub-question (RQ3): Which co-creation mechanisms are perceived as inclusive by marginalized groups in Malmi? These mechanisms show community knowledge about effective inclusion approaches.

## **Trust-Building Through Community Representatives**

Community representatives emerged as the most effective approach for building trust connections. Respondent R5 (31-50 age group, migrant, 6 years in Malmi) explicitly recommended: “They should get representatives from other ethnicities.” This suggestion recognizes that trust often works through cultural and language connections rather than formal credibility alone.

The effectiveness of trusted intermediaries reflects the value of people who understand both community needs and process requirements. Respondent R3 (51-65 age group, migrant, 8 months in Malmi) compared different community experiences: “At Vaasa there were fewer foreign people - grouping was easier when we were a smaller group. Malmi is bigger - harder to get together - you don’t know who is the leader in Malmi.” This shows how community representatives can help recreate social connections that enable participation.

Community representatives address multiple barrier categories at once by providing cultural understanding, building trust relationships, and creating communication bridges between organizers and marginalized communities. Their effectiveness shows the value of people who can understand different perspectives and help bridge communication gaps.

## **Multi-Channel Communication Strategies**

Diversifying communication channels reflects understanding that standard communication methods may not reach all community members equally. Respondent R12 (31-50 age group, Finnish speaker, 10+ years in Malmi) recommended: “Clear and multi-channel communication, materials in different languages, and flexible participation opportunities, such as evening and weekend events.” This approach acknowledges that effective outreach requires multiple communication methods rather than assuming single channels reach everyone.

Community-specific communication preferences show the need to understand how different groups access information. Respondent R4 (35 years old, migrant, 6 years in Malmi) proposed: “Communication tools for e.g in grocery stores when everyone go.” This suggestion recognizes that effective outreach may require meeting people where they already go rather than expecting them to look for information.

Alternative communication preferences challenge assumptions about digital communication. Respondent R9 (51+ age group, with disability) specified: “Paper on the boards - not using social media.” This preference shows how communication assumptions may reflect organizer preferences rather than community needs.

### **Accessible Locations**

Location accessibility goes beyond legal requirements to include community geography and transportation networks. Respondent R9 (51+ age group, with disability) emphasized: “Proximity is what matters - it has to be close enough.” This requirement reflects practical needs, as transportation costs and mobility limitations can make distant locations difficult to reach regardless of other accessibility features.

Community space use shows the importance of familiar environments for building participation comfort. Respondent R2 (65+ age group, native Finnish speaker, lifelong Malmi resident) noted: “Community center is important for people here. In the 80s we were more together than now.” This shows how location choices can either build on existing community connections or create additional barriers through unfamiliar settings.

Familiar venues address trust concerns by reducing intimidation factors that unfamiliar settings can create for marginalized communities. When participation happens in comfortable spaces, power dynamics become less overwhelming and participation more accessible.

### **Value-based Participation Design**

Clear value propositions address the reality that marginalized communities face multiple demands on limited time and resources. Respondent R6 (30 years old, native Finnish speaker, 6 months in Malmi) emphasized: “To see the results - workshop needs to be organized in a good way - Snack if there are long hours - accessibility.” This list shows understanding that effective participation requires both immediate practical support and visible long-term outcomes.

Skill development opportunities provide concrete benefits that justify participation investment. Respondent R4 (35 years old, migrant, 6 years in Malmi) articulated: “I should have a take away - not just participate. Learning skills, language - I would participate if I get

something.” This shows that people want to understand what they will gain from participating beyond just giving input.

Value creation goes beyond individual benefits to include community capacity building. When participation processes develop residents' skills, knowledge, or networks, they create positive cycles that increase future engagement while building community capacity for self-organization.

### **Flexible Timing**

Scheduling flexibility acknowledges that marginalized communities often face constraints that other participants may not have. Respondent R6 (30 years old, native Finnish speaker, 6 months in Malmi) stated: “Flexible time formats” would help overcome scheduling challenges created by work, caregiving, and educational commitments that cannot be easily rescheduled.

Time preferences vary significantly across demographic groups, requiring multiple scheduling options rather than one-size-fits-all approaches. Respondent R9 (51+ age group, with disability) noted: “Time is a problem - morning fits for me.” This preference reflects how energy levels, medication schedules, and daily routines affect participation ability in ways that fixed scheduling may not accommodate.

Predictable scheduling supports participation planning for those with complex life circumstances. The same respondent suggested: “Some routine would be easier, for example every Monday. It makes it easier to plan.” This recommendation shows how consistent scheduling enables marginalized communities to integrate participation into challenging daily routines.

### **Welcoming Environment Creation**

Addressing stigmatization requires deliberate design to counteract discrimination and create genuinely inclusive atmospheres. Respondent R14 (50+ age group, with history of substance abuse, 2 months in Malmi) emphasized: “I want to feel welcome, be seen, and feel that I'm accepted here.” This need for acceptance shows how participation environments must actively create inclusion rather than assuming neutrality creates welcoming spaces.

Negative experiences create lasting effects that extend beyond individual events to affect future participation willingness. The same respondent described: “When I encountered a community cleaning group, they criticized our smoking instead of inviting us to participate. Their unwelcoming attitude discouraged me from joining future activities.” This experience shows how representative responses can affect long-term community engagement.

Welcoming environment creation requires preparation and awareness from representatives about how their responses affect marginalized communities’ participation decisions. Without deliberate attention to creating genuinely inclusive atmospheres, participation processes may reproduce discrimination that marginalized communities experience elsewhere.

**Table 4** *Inclusive Mechanisms Suggested by Residents*

<b>Mechanism</b>	<b>Supporting Quote</b>	<b>Address Barrier Categories</b>
Community Representatives	“They should get ambassadors from other ethnicities.”	Trust, Communication, Cultural
Multi-Channel Communication	“Clear and multi-channel communication, materials in different languages.”	Communication, Information Access
Accessible Locations	“Everything has to be close.”	Physical, Economic, Transportation
Value-Based Incentives	“I should have a take away - not just participate.”	Motivation, Economic
Flexible Timing	“Flexible time formats.”	Resource, scheduling
Welcoming Atmosphere	“I want to feel welcome, be seen, and accepted here.”	Trust, stigmatization

#### **4.5. Strategies for Inclusive Urban Initiatives**

This section addresses the fourth research question (RQ4): *What kind of strategies can help urban initiatives and similar projects include marginalized groups effectively?* These strategies combine literature review findings, expert knowledge and resident recommendations to provide actionable guidance for creating more inclusive engagement processes.

## **Building Community-Centered Communication Systems**

The findings reveal that information barriers and language challenges work together to exclude marginalized groups before participation even begins. Effective strategies must address both who receives information and how they can engage once they know about opportunities.

Multi-layered information sharing recognizes that different communities access information through different channels. While some residents use digital platforms, others rely on community boards, word-of-mouth networks, or encounters in daily spaces like grocery stores. Successful initiatives develop communication strategies that use multiple channels simultaneously rather than assuming one method reaches everyone.

Community representative networks address both trust and communication barriers by connecting projects with people who already have relationships within marginalized communities. These representatives serve as cultural translators who can explain participation opportunities in ways that make sense to their communities while also helping organizers understand community concerns and preferences.

Language accommodation goes beyond simple translation to include conceptual adaptation. Materials and discussions need to be accessible not just linguistically but also in terms of complexity and cultural relevance. This means avoiding technical jargon, providing context for concepts, and ensuring that participation methods work for people with different educational backgrounds and communication styles.

## **Creating Accessible and Welcoming Participation Environments**

The research shows that accessibility extends far beyond physical access to encompass economic, cultural, and social dimensions that determine who can participate comfortably and effectively.

Comprehensive accessibility planning addresses the multiple resource barriers that affect participation. This includes choosing locations that are reachable by public transportation, scheduling events at different times to accommodate various work patterns and energy levels, and providing practical support like childcare or refreshments for longer sessions. The

goal is removing hidden costs that make supposedly "free" participation inaccessible to those with limited resources.

Format diversity acknowledges that traditional discussion-based workshops work well for some people but exclude others. Incorporating visual methods, hands-on activities, and smaller group options creates multiple ways for people to contribute based on their comfort levels and communication preferences. This is particularly important for addressing the dominance patterns observed in conventional meetings.

Stigma-conscious environment design recognizes that marginalized groups often face discrimination in other settings and may anticipate similar treatment in participation processes. Creating welcoming atmospheres requires training staff and volunteers to respond supportively to diverse participants, establishing clear ground rules for respectful interaction, and actively demonstrating inclusion rather than assuming neutrality creates safety.

### **Demonstrating Clear Value and Impact**

The findings show that marginalized communities make rational calculations about whether participation is worth their time and energy investment. Strategies must address both immediate benefits and long-term impact visibility.

Tangible benefit provision recognizes that people facing multiple life challenges need clear reasons to prioritize participation. This might include skill development opportunities, networking possibilities, resource access, or direct compensation for time invested. The key is understanding what each community values and structuring participation to deliver those benefits.

Transparent impact tracking addresses trust concerns by showing how community input influences actual decisions and outcomes. This requires establishing clear mechanisms for documenting how resident contributions affect project development and communicating these connections back to participants in understandable ways.

Capacity building approaches create value that extends beyond individual projects by developing community skills, knowledge, and networks that support long-term civic engagement.

When participation processes strengthen community capacity for self-organization, they create sustainable foundations for continued involvement rather than one-time extraction of community input.

### **Adapting Processes to Community Needs**

Rather than expecting marginalized communities to adapt to standard participation methods, effective strategies modify processes to accommodate diverse needs and preferences.

Flexible participation design offers multiple ways to engage rather than requiring everyone to participate in the same format. This might include offering both individual and group options, providing various time commitments from brief input sessions to longer collaborative processes, and creating both formal and informal participation opportunities.

Cultural responsiveness involves understanding that different communities have different preferences for decision-making, communication, and collaboration. This requires learning about community cultures rather than making assumptions, and being willing to modify approaches based on what works best for specific groups.

Iterative process development recognizes that inclusive participation is an ongoing learning process rather than a one-time design challenge. Successful strategies include mechanisms for getting feedback on participation processes themselves and making adjustments based on what participants say works or doesn't work for them.

The interconnected nature of barriers means that effective strategies must address multiple dimensions simultaneously. Community representatives, for example, can address communication, trust, and cultural barriers at the same time. Similarly, accessible locations combined with flexible timing and practical support can remove multiple resource barriers together. The most successful approaches recognize these connections and design comprehensive solutions rather than addressing barriers in isolation.

## 5. DISCUSSION AND IMPLICATION

### 5.1. Discussion

This research set out to examine how co-creation processes in urban climate regeneration could be designed to address participation barriers faced by marginalized groups in Malmi District. The findings reveal a complex landscape of interconnected barriers that work together as systems rather than separate obstacles to systematically exclude certain community members from participation.

The identification of five barrier categories - communication/language, trust/relationship, accessibility/resources, design/process, motivation/value, and their interconnections - provides a comprehensive framework for understanding exclusion in participatory processes. This categorization builds upon existing research while offering new perspectives on participation dynamics. The most significant finding is that these barriers work together as reinforcing systems. Language barriers combine with trust challenges when residents cannot understand participation processes, which then intersects with design barriers when discussion-heavy formats exclude migrants and non-Finnish speakers from influencing what gets discussed.

This interconnection finding extends co-creation theory beyond Voorberg et al., (2014) three levels of citizen involvement (co-implementers, co-designers, co-initiators) by showing how barriers operate before these levels are even reached. Barriers filter who becomes aware of opportunities and who feels able to participate, determining the participant pool before any formal co-creation activities begin.

The workshop observations provided crucial evidence of how this works in practice. The combination of Finnish-only proceedings and discussion-heavy formats created multiple filtering mechanisms that produced demographic homogeneity among participants. This demonstrates how seemingly neutral design choices can create systematic exclusion that becomes invisible when organizers only see who participates rather than who doesn't.

The differential impact of these barriers on specific marginalized groups demonstrates the relevance of intersectionality theory (Crenshaw, 1991.; Kaijser & Kronsell, 2014) in understanding participation dynamics. The research provides concrete evidence of how intersecting identities create unique barrier combinations. For elderly residents, physical accessibility concerns combine with digital literacy challenges and timing preferences that differ from standard scheduling. Migrants and non-Finnish speakers face information access difficulties alongside cultural disconnection and language barriers that go beyond simple translation needs.

These differential impacts highlight how standardized participation approaches often fail to accommodate the diverse needs of marginalized communities. An elderly migrant woman encounters physical accessibility barriers that intersect with language challenges and cultural unfamiliarity with Finnish participation norms, creating barrier combinations that single-dimension approaches miss. This supports intersectionality theory's core insight that marginalization cannot be understood by adding separate identity categories together.

A significant finding is the sophisticated understanding that marginalized communities have about effective inclusion approaches. The identified effective engagement mechanisms align with Costanza-Chock's Design Justice framework, particularly in their emphasis on centering marginalized voices and recognizing diverse forms of expertise. The residents' suggestions for community representatives, multi-channel communication, accessible locations, flexible timing, and welcoming atmospheres demonstrate clear knowledge about what makes participation accessible and meaningful.

This challenges deficit-based approaches that assume marginalized communities lack capacity for civic engagement. The residents' suggestions for community ambassadors and culturally adapted communication strategies directly reflect Design Justice principles of shifting from designing for communities to designing with them. This convergence suggests that marginalized communities intuitively recognize effective inclusion approaches even without familiarity with formal design theory.

The research also reveals how marginalized communities make rational calculations about participation investment. While previous research has acknowledged practical obstacles, this study highlights how marginalized groups make calculated value assessments when deciding

whether to participate, weighing potential benefits against required investments of time and effort. The emphasis on “take-aways” and visible outcomes reflects practical decision-making by people facing multiple demands on limited time and resources.

The findings challenge assumptions in participation literature that creating formal opportunities automatically enables inclusion. The research shows that standard participation methods may systematically exclude marginalized groups, not through intentional discrimination but through design choices that advantage some groups over others. This extends Fung's (2006) Democracy Cube framework by demonstrating how seemingly neutral decisions about “who participates” and “how they communicate” actually create systematic advantages for those with specific cultural capital.

The workshop observations revealed how open discussion formats that appear democratic can reproduce inequality when participants have different comfort levels with formal speaking, language abilities, or cultural expectations about public participation. Some individuals dominated group discussions not through bad intentions but because the format worked well with their communication style, confidence level, and familiarity with meeting procedures.

The research provides detailed evidence about how participation barriers manifest in a multicultural, socioeconomically diverse urban context. Malmi District's linguistic diversity (21.55% non-Finnish speakers) creates specific communication challenges, but the underlying pattern - that participation processes designed around majority language use systematically exclude linguistic minorities - likely applies across diverse urban contexts.

The upcoming population doubling through the Malminkenttä development adds urgency to establishing inclusive participation patterns before demographic changes potentially alter community dynamics. The research shows how multiple urban transformations create both opportunities and challenges for inclusive participation.

## 5.2. Practical implication

This research offers several actionable recommendations for urban climate initiatives and similar projects in Malmi District and beyond. The findings suggest that addressing participation barriers requires comprehensive strategies that recognize how barriers work together as interconnected systems.

Implementing outreach through trusted representatives from marginalized communities would address multiple barrier categories simultaneously. Engaging individuals from key groups, including migrants, non-Finnish speakers, elderly residents, and those with substance abuse histories, would improve communication channels, build trust, and create culturally appropriate engagement mechanisms. These representatives should be involved in planning processes from the earliest stages rather than as an afterthought.

Adopting multi-channel, multilingual communication approaches would significantly enhance information accessibility. Projects should combine digital platforms with traditional methods (community boards, local newspapers) and direct outreach in community gathering places like grocery stores, religious centers, and community houses. Materials should be available at minimum in Finnish, Swedish, Russian, Somali, and English to reach Malmi's primary linguistic communities. However, communication strategies must go beyond translation to include conceptual adaptation that makes participation genuinely accessible.

Event design should incorporate flexible timing, accessible locations, and clear value propositions. Participation opportunities should be scheduled at various times (including mornings for elderly residents and evenings for working adults), located within walking distance of public transportation, and explicitly communicate the tangible benefits for participants.

Process design should offer multiple participation formats rather than relying primarily on verbal discussion. This includes incorporating visual methods, hands-on activities, and smaller group options that accommodate different communication styles and comfort levels. This addresses the dominance patterns observed where confident speakers overshadow quieter participants.

Accessibility planning should address hidden costs of participation by providing practical support like transportation assistance, childcare, and scheduling flexibility. The research shows that "free" participation often isn't actually free for those with limited resources, creating economic barriers that exclude low-income residents.

Creating welcoming environments requires deliberate attention to counteracting stigmatization. This includes training staff and volunteers to respond supportively to diverse participants, establishing clear ground rules for respectful interaction, and actively demonstrating inclusion rather than assuming neutrality creates safety.

The research emphasizes that marginalized communities need clear reasons to invest time and energy in participation. Value creation should ensure that participation provides tangible benefits like skill development, networking opportunities, or resource access while demonstrating how community input influences actual decisions. This addresses both motivation and trust barriers by showing concrete results from participation.

Transparency about impact requires establishing clear mechanisms for documenting how resident contributions affect project development and communicating these connections back to participants in understandable ways. When people can see that their input makes a difference, they become more willing to participate in future activities.

The research shows that effective inclusion requires understanding different communities' preferences for participation and being willing to adapt processes rather than expecting communities to adapt to standard formats. This means learning about community cultures rather than making assumptions and modifying approaches based on what works for specific groups.

Cultural adaptation requires systematic attention to diverse communication styles, participation preferences, and community engagement traditions. This includes translation services, culturally appropriate meeting formats, and materials designed with cultural sensitivity.

Beyond Malmi, these findings have implications for urban climate initiatives in diverse neighborhoods across Europe. The four strategic approaches identified - community-cen-

tered communication systems, accessible and welcoming environments, clear value and impact demonstration, and cultural responsiveness - provide transferable guidance for addressing participation barriers in contexts characterized by socioeconomic challenges and cultural diversity.

The interconnected nature of barriers means that successful interventions must address multiple dimensions simultaneously. Community representatives, for example, can address communication, trust, and cultural barriers together, making them particularly effective investments for inclusion efforts.

### **5.3. Future studies**

While this research provides valuable insights into participation barriers in Malmi District, several limitations suggest directions for future research. The study's four-month timeframe captured a snapshot of participation dynamics rather than longitudinal patterns. Future research would benefit from tracking participation over extended periods to assess how barrier impacts evolve throughout project lifecycles.

Additionally, while the sample included representatives from key marginalized groups, the small sample size (n=20) limits the generalizability of findings. More extensive quantitative research measuring barrier impacts across larger populations would complement this qualitative foundation.

The most promising direction for future research lies in testing specific intervention effectiveness. Comparative studies evaluating different engagement strategies' impacts on participation rates and quality would provide valuable evidence for optimizing inclusion approaches. Specifically, research examining the effectiveness of various representative engagement models across diverse urban contexts could generate practical knowledge for implementing these promising strategies in various cultural and socioeconomic settings.

## **6. CONCLUSION**

This thesis has examined how co-creation processes in urban climate regeneration can be designed to address participation barriers faced by marginalized groups in Helsinki's Malmi

district. Through a methodical investigation combining theoretical frameworks with empirical findings, the research has identified comprehensive strategies for more inclusive urban climate initiatives while revealing how barriers work together as interconnected systems.

The study confirms that marginalized groups in Malmi district face multidimensional barriers to participation, which can be categorized into five interconnected types: communication and language barriers, trust and relationship barriers, accessibility and resource barriers, design and process barriers, motivational and value perception barriers, and critically, the interconnections between these barriers. The most significant finding is that these barriers work together as reinforcing systems rather than separate obstacles, creating compound exclusion patterns that single-dimension solutions cannot address.

These barriers disproportionately affect specific groups in distinct ways. Elderly residents struggle with physical accessibility concerns that intersect with digital literacy challenges and timing preferences. Migrants and non-Finnish speakers encounter language barriers that combine with cultural disconnection and information access difficulties. People with substance and alcohol abuse histories face stigmatization that can prevent participation before it begins, while low-income residents confront hidden costs that make supposedly "free" participation inaccessible.

The research demonstrates that effective engagement mechanisms must be tailored to address these specific barrier combinations. Community representatives emerged as particularly effective because they can bridge cultural and linguistic divides while building trust relationships simultaneously. Multi-channel communication strategies ensure information reaches diverse audiences through channels they actually use. Accessible locations, flexible timing, value-based incentives, and welcoming atmospheres collectively create conditions where marginalized voices can contribute more effectively to urban climate initiatives.

The findings suggest that urban climate regeneration projects in Malmi would benefit from enhancing their participation approaches through four interconnected strategies: building community-centered communication systems that use trusted representatives and multiple channels to reach diverse audiences; creating accessible and welcoming participation environments that accommodate diverse needs and counteract stigmatization; demonstrating clear value and impact by providing tangible benefits and showing how input influences

decisions; and adapting processes to community needs rather than expecting communities to adapt to standard formats.

By addressing these dimensions simultaneously, co-creation processes can evolve from consultation exercises into platforms that genuinely promote more equitable urban climate futures. The interconnected nature of barriers means that successful interventions must address multiple dimensions together rather than treating barriers as separate problems. While this research focused specifically on Malmi district, the framework developed offers valuable insights for urban climate initiatives in diverse neighborhoods across Europe and beyond.

This research contributes to both scholarly understanding and practical implementation by demonstrating that effective co-creation requires deliberate, context-specific strategies that address the complex, interconnected barriers faced by marginalized groups. The findings challenge assumptions that creating formal participation opportunities automatically enables inclusion, revealing instead that genuine inclusion requires transforming processes to center community needs and knowledge. By implementing these strategies, urban climate initiatives can ensure that those most vulnerable to climate impacts have meaningful opportunities to shape the solutions that affect their lives.

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## **APPENDICES**

**Appendix 1. Interview Questionnaire 1 (PDF 1)**

**Appendix 2. . Interview Questionnaire 2 (PDF 2)**

**Appendix 3. Letter of Consent (PDF 3)**

## Interview Preparation Document

### Researcher Profile:

- **Researcher:** Besjan Haziri (Master's Degree Candidate)
- **Supervisors:** Nam Kiwoong, Satu Miettinen
- **Affiliated Institutions:** University of Lapland (Finland), Estonian Academy of Arts (Estonia), Art Academy of Latvia (Latvia)
- **Thesis Partner:** Forum Virium Helsinki

**Research Overview:** This study explores how co-creation processes can be designed to address participation barriers faced by vulnerable groups in urban climate regeneration initiatives, using the Malmi District (Helsinki, Finland) as a case study.

### Interview Questionnaire for Residents:

**Purpose:** Understand lived experiences, motivations, and barriers to participation in urban climate regeneration

#### ***Demographics & Context***

1. Age:  18–30  31–50  51–65  65+

2. Languages spoken at home:

Finnish  Swedish  English  Russian  Somali  Other: \_\_\_\_\_

3. How long have you lived in Malmi?

<1 year  1–5 years  5–10 years  10+ years

4. Do you identify with any specific community or group in Malmi?

" No  Yes: \_\_\_\_\_ (e.g., parent, elderly, migrant, volunteer)"

**Questions**

1. Have you ever participated in community projects here?

If yes: What did you enjoy? What could have been better?

If no: What would make you consider joining?

2. What, if anything, has made it difficult for you or others to join projects like improving Longinoja Park?

"Probe: "For example, time, language, childcare, or trust in organizers."

3. How could the city or local projects better support your participation?

Probe: "What tools or methods would work for you?" (e.g., translated materials, flexible hours).

4. What would make you feel excited or motivated to join future projects?

Probe: "For example, seeing results, meeting neighbors, or learning new skills."

## Interview Preparation Document

### Researcher Profile:

- **Researcher:** Besjan Haziri (Master's Degree Candidate)
- **Supervisors:** Nam Kiwoong, Satu Miettinen
- **Affiliated Institutions:** University of Lapland (Finland), Estonian Academy of Arts (Estonia), Art Academy of Latvia (Latvia)
- **Thesis Partner:** Forum Virium Helsinki

**Research Overview:** This study explores how co-creation processes can be designed to address participation barriers faced by vulnerable groups in urban climate regeneration initiatives, using the Malmi District (Helsinki, Finland) as a case study.

### Interview Questionnaire for \*\*\*:

1. Based on your experience at \*\*\*, what are the most common barriers preventing vulnerable groups from participating in co-creation processes?
2. What co-creation tools or methods have you found most effective in engaging marginalized communities in your projects?
3. Can you share a \*\*\* project where innovative co-creation mechanisms successfully overcame participation challenges?
4. How do you ensure that vulnerable groups' input meaningfully influences final decisions in your projects?
5. What's one piece of advice you'd give to researchers designing inclusive co-creation processes for urban climate regeneration?

## Participant Consent Form

**Researcher:** Besjan Haziri (Master's Degree Candidate)

**Supervisors:** Nam Kiwoong, Satu Miettinen

**Affiliated Institutions:** University of Lapland (Finland), Estonian Academy of Arts (Estonia), Art Academy of Latvia (Latvia)

**Thesis Partner:** Forum Virium Helsinki.

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### Research Purpose

This study explores how co-creation processes can be designed to address participation barriers faced by vulnerable groups in urban climate regeneration initiatives, using the Malmi District (Helsinki, Finland) as a case study.

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### Data Collection

1. **Types of Data Collected:**

- Interview recordings (audio or video, with your consent).
- Transcripts of the interview.

2. **Use of Data:**

- Academic analysis for the researcher's Master Thesis.
- Potential anonymized quotes in publications, reports, or presentations.

3. **Anonymity:**

- Your name, role, and contact details will **not** be publicly linked to responses.
  - Data will be anonymized (e.g., "Interlocutor A").
- 

### Data Storage & Security

- **Storage:** Encrypted digital files on password-protected devices and secure cloud storage (e.g., OneDrive)
  - **Access:** Only the researcher and supervisors will access raw data.
- 

### Your Rights

Under GDPR, you have the right to:

1. **Access** your data.
  2. **Correct** inaccurate information.
  3. **Withdraw consent** at any time (data will be deleted if not already anonymized).
  4. **Request deletion** of your data (unless anonymized and used in published results).
- 

### Consent Statements

Please check (✓) your consent:

- I agree to participate in this interview and understand the research purpose.
  - I consent to audio/video recording of this interview.
  - I consent to anonymized quotes from my responses being used in academic publications or presentations.
- 

### Participant Declaration

*By signing below, I confirm that:*

- I have read and understood this consent form.
- I voluntarily agree to participate.
- I may withdraw at any time without consequence.

Name and Surname \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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### Contact Information

For questions or to exercise your GDPR rights, contact:

- **Researcher:** Besjan Haziri – bhaziri@ulapland.fi