Public Participation and Sustainable Urban Development in High-End Business Districts: The Case of Amsterdam's Zuidas Project

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Abstract

Keywords: Collaborative Planning, High-end business district, Public Participation, Sustainable Urban Development, Sustainability Goals, Stakeholder Involvement, Zuidas district

The thesis explores the profound role of public participation in achieving public sustainability goals, using the case study of the Zuidas high-end business district and deploying Arnstein's ladder and Healey's participation framework to analyse public participation. The study emphasizes the relationship between community involvement and urban development, particularly in high-end business regions, where alignment with societal aims and public interests is crucial for sustainability and the project development. In the Zuidas district, a multi-level approach was employed, involving community members early on in the planning process. This was characterized by transparency, ongoing dialogue, collaboration, and the employment of digital platforms to manage public involvement. The Zuidas experience illustrates that by giving a voice to various stakeholders and including them in the decision-making process, a sense of ownership and alignment with community interests can be observed. This strong participation also led to a higher acceptance rate for the transformation in the area. Transparency played a key role in establishing trust between the authorities and the public. By allowing stakeholders to access information easily, an environment was created that encouraged active contribution. Transparency not only allowed for the alignment of community needs with the framework of the transitions in the Zuidas but also facilitated collaboration, leading to the inclusion of fresh perspectives and ideas and initiating feedback mechanisms. The inclusive design of the participation processes in the Zuidas project was instrumental in connecting the community's needs with the transformations of the Verdi and Ravel neighbourhoods. Collaborations with community members provided a sense of ownership, and the continuous dialogue ensured that the project outcomes were adjusted to better align with public expectations. Furthermore, the use of digital platforms opened up opportunities for diverse stakeholders to participate, leading to a more well-rounded project design. The synergy between public participation and sustainability in the Zuidas has positioned the district as a benchmark for how public involvement can guide urban development in high-end business districts. The integration of sustainable practices in public participation underscored the city's commitment to sustainability goals and raised awareness within the community. This unique relationship between public participation and sustainability in Zuidas showed how public involvement could significantly impact the achievement of public sustainability objectives.

The thesis concludes with specific recommendations that can be applied to other high-end business districts. These recommendations include adopting transparent practices to build trust, involving community members from the early stages of project planning, and utilizing tools such as workshops, forums, and online platforms to foster open dialogue and collaboration. Emphasizing continuous dialogue and feedback mechanisms throughout the development cycle is essential to ensure alignment with public needs. Regular meetings, surveys, and online forums can help gather public input and make necessary adjustments. Proactive educational programs such as workshops, school programs, and community outreach initiatives could heighten awareness around sustainability. Embracing digital tools can further enhance public engagement, making participation more accessible to a larger audience. Participation processes must consider the diverse needs of the community, prioritizing engagement with marginalized groups. Integration of sustainable practices into public participation processes should also not be overlooked, as it reinforces the project's objectives and promotes broader community acceptance. The lessons drawn from the Zuidas provide a comprehensive framework for including greater public involvement in urban development projects.

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List of Abbreviations

I	Interviewee	PP	Public Participation
PPP	Public Participation Process	SUD	Sustainable Urban Development

1 Introduction

1.1 Netherlands Climate Change Objective

Climate change has been recognised as a global threat for environment and societies. The United Nations (UN) recognises the urgency and has identified climate change as one of humanity's greatest challenges, calling for immediate action to mitigate its impact (United Nations, 2022). In 2015, the Paris Climate Agreement was established, urging countries to limit global temperature rise to well below 2 degrees Celsius above pre-industrial levels, with a target of limiting the increase to 1.5 degrees Celsius. The Intergovernmental Panel on Climate Change (IPCC) has linked human activities to be affecting global temperatures negatively, which in turn have contributed to rising sea levels, more frequent weather events, and other negative impacts. The IPCC's sixth assessment report (AR6) confirms that climate change is indeed occurring and that its effects will be more severe than previously anticipated (IPCC *et al.*, 2021).

The Netherlands is considered a low-lying country with a significant size of its land being below sea level and therefore considered vulnerable to the effects of climate change. In response to this challenge, the Dutch government has set sustainability goals (SDGs), aiming to reduce greenhouse gas emissions by 95% by 2050 and achieve a 49% reduction in emissions by 2030 compared to 1990 levels. The SDGs are outlined in the National Energy and Climate Plan (NECP), which provides a range of measures to help the country achieve its targets. The NECP emphasizes the need of sustainable urban development, calling for efficient use of resources, reduced carbon emissions, and improved air quality in urban areas (Dutch Government, 2019).

1.2 Public Participation and Sustainability in Urban Development: The Case of SDGs in Amsterdam

Urban areas are increasingly recognized as essential players in addressing climate change, promoting sustainability, and act as areas for mitigating its effects (United Nations, 2018). Rapid urbanization and population growth put pressure on resources such as water, food, and land, which can increase climate change by increasing greenhouse gas emissions (Belčáková, Świąder and Bartyna-Zielińska, 2019). Furthermore, urban expansion often comes at the expense of taking up terrestrial and marine ecosystems, leading to the loss of natural and valuable ecosystem services (Andersson *et al.*, 2014). As subjects of climate change, urban areas are vulnerable to its consequences, such as the increasing frequency and intensity of extreme weather events. To address these challenges, sustainable urban development, including public participation in planning and decision-making processes, has become a priority to come up with innovative solutions (Innes and Booher, 2018).

Amsterdam, as a leading European city in sustainability and innovation, has committed to becoming a green frontrunner within the Netherlands and internationally (Dutch Government, 2019). In line with the national sustainability goals outlined in the NECP, the municipality of Amsterdam seeks to reduce emissions and promote sustainable urban development (Dutch Government, 2019). The city has set ambitious goals for itself, aiming to reduce greenhouse gas emissions by 55% by 2030 compared to 1990 levels and to become climate-neutral by 2050 (City of Amsterdam, 2020). In order to achieve these targets, Amsterdam is actively implementing measures to reach the United Nations' Sustainable Development Goals (SDGs), a set of 17 interconnected global goals designed to address a wide range of environmental, social, and economic challenges. Urban development plays a crucial role in achieving the SDGs in Amsterdam. The city is focusing on creating sustainable neighbourhoods, promoting green infrastructure, and encouraging efficient resource use. Key goals within this context include SDG 11 (Sustainable Cities and Communities), which aims to make cities inclusive, safe, resilient, and sustainable, and SDG 13 (Climate Action), which seeks to combat climate change and its impacts.

Amsterdam's commitment to sustainable urban development can also be seen in various citywide initiatives. These include for example the Climate Agreement, which sets specific targets and measures to reduce greenhouse gas emissions (Dutch Government, 2019); the Amsterdam Metropolitan Area's Regional Energy Strategy, which outlines the region's approach to achieving sustainable energy generation and use (Metropoolregio Amsterdam, 2020; Picchi, Oudes and Stremke, 2023); and the Amsterdam City Doughnut, a tool for transformative action that aligns the city's efforts with the SDGs (Raworth, 2020).

One of the key components in achieving these goals is fostering public participation in urban planning, ensuring that citizens have a voice in shaping the city's future (Healey, 2020). The importance of public participation in urban development has been recognized in numerous studies, highlighting the benefits of involving citizens in decision-making processes (Innes and Booher, 2018; Healey, 2020). Public participation can lead to more inclusive and sustainable urban planning, better reflecting the needs and aspirations of diverse communities (Healey, 2020). In the context of Amsterdam, public participation can be a crucial factor in realizing the city's sustainability goals. The city's unique characteristics, such as its urban history (Jacobs, 1961, 2016), diverse population (Uitermark, Rossi and Van Houtum, 2005), and commitment to sustainable development, make it an interesting case for studying the role of public participation in urban sustainability. This is particularly relevant when considering high-end business districts like the Zuidas, which face challenges related to green spaces and sustainable infrastructure but have the potential to significantly contribute to Amsterdam's overall sustainability efforts.

1.3 Public Participation, Collaborative Planning, and Sustainability in High-End Business Districts

High-end business districts, characterized by high-density development and concentrations of commercial and office buildings, often face challenges related to a lack of green spaces and sustainable infrastructure (Besseling *et al.*, 2005). However, these areas also have the potential to serve as leading examples of sustainability in urban development, given their influence within cities (Merk *et al.*, 2012). Incorporating sustainability measures in these districts can contribute to a city's overall sustainability goals, as well as improve the livability, health, and well-being of the citizens (Zimmerman, Brenner and Llopis Abella, 2019). In recent years, cities have begun to recognize the importance of integrating green infrastructure and sustainable practices in their high-end business districts. Historically, these districts have been an understudied area in terms of sustainability efforts, with a focus primarily on economic growth and development (Rode *et al.*, 2017). However, as the need for sustainable urban development becomes more pressing, the potential impact of incorporating sustainability measures in these influential districts is increasingly acknowledged. Examples of such measures include the creation of new parks and gardens, the conversion of underutilized spaces into green areas, and the implementation of green roofs and walls on buildings (Merk *et al.*, 2012; Zimmerman, Brenner and Llopis Abella, 2019). Moreover, cities are investing in active transportation infrastructure, such as bike lanes and pedestrian walkways, to further promote sustainable urban development (Zimmerman, Brenner and Llopis Abella, 2019).

Public participation and collaborative planning have been established as essential components of sustainable urban development and reaching set SDGs by the Ruimtelijke Ordening en Milieubeheer (VROM) in the Structuurvisie Randstad 2040, convinced that it will benefit the new thinking of 'People, Planet and Profit' (Meijer *et al.*, 2011). In the context of high-end business districts, where profit is of utmost importance, these approaches can play a crucial role in shaping their sustainable urban development. By involving diverse stakeholders, including citizens, in the planning and decision-making processes in the built environment, it is possible to develop more inclusive and sustainable strategies

that take into account additional interests and needs of different communities (Innes and Booher, 2018; Healey, 2020; van Dijk, 2021). Collaborative planning, with its emphasis on public participation and stakeholder engagement, has emerged as an important approach in addressing the challenges faced by high-end business districts due to their notable redevelopment measures in the spatial designs (Heurkens, 2018). Smart implementations are needed to integrate SDGs in the built environment to ensure higher liveability standards in metropolitan areas, especially in high-end business districts. built environments that integrate multiple sectors, such as transport, water management, and energy (VROM, 2008). Four notable scholars in this field are Sherry Arnstein, Patsy Healey, Judith Innes, and David Booher whose works have significantly contributed to the understanding of collaborative planning and its impact for public participation in urban planning processes.

Arnstein's (1969) ladder of participation, which places co-creation at the top of the ladder, emphasising that citizen participation is the final goal in planning. Healey's (2020), concept of collaborative planning emphasizes the need for diverse stakeholders, especially including the knowledge of local communities, in urban planning measures. She argues that planning should be understood as a process of communication and negotiation among various actors, rather than a top-down approach. In her view, collaborative planning can lead to more inclusive, sustainable, and adaptable urban development outcomes, as it acknowledges and addresses the diverse needs, values, and perspectives of all relevant stakeholders. By fostering dialogue and mutual learning, Healey's approach to collaborative planning aims to create a shared understanding of urban issues and generate innovative solutions that reflect the needs of the community. Ultimately, leading to more effective and sustainable urban development outcomes. Innes and Booher (2018), on the other hand, focus on the concept of consensus building as a means of enhancing public participation in urban planning. They claim that planning should be grounded in a process of inclusive deliberation, where diverse stakeholders engage in meaningful dialogue to reach a shared understanding of common problems and develop mutually agreed solutions. Their collaborative rationality approach emphasizes the importance of transparency, trust, and social learning in achieving sustainable urban development outcomes. According to Innes and Booher (2018), successful collaborative planning processes create a sense of ownership and commitment among stakeholders, which in turn, enhances the long-term acceptance and effectiveness of urban development initiatives. Additionally, when diverse stakeholders are involved in meaningful dialogue, they can identify opportunities in the built environment. Yet, recent literature claims, that the more stakeholders involved in the design process, the more complex the overall planning and satisfying every stakeholder (De Roo and Hillier, 2016). Nonetheless, a mix of collaborative planning combined with public-led management limits complexity, as technical and collaborative rationality are both present in the Zuidas district (Majoor, 2009; De Roo and Hillier, 2016).

Despite the growing recognition of the importance of public participation in urban planning and the potential of collaborative planning approaches to enhance sustainability in urban development, there are still research gaps that need to be addressed. For example, understanding the specific mechanisms through which public participation influences the adoption and implementation of SDGs in urban development measures in high end business districts. Furthermore, the overall presence of collaborative planning in the literature of high-end business districts, which aim for sustainable redevelopment.

1.4 The Zuidas: Amsterdam's High-End Business District and the Pursuit of Sustainable Development

The Zuidas, also known as Amsterdam's "golden mile," is the biggest and one of the most ambitious and complex contemporary urban projects in the Netherlands. This high-end business district is situated

along the A10 motorway and strategically located between Schiphol Airport in the southwest and the office parks of Amsterdam Bijlmer in the southeast (Majoor, 2008). The Zuidas is often referred to as Amsterdam's financial and commercial hub, being the country's prime office location (Jacob Trip, 2007). The area's strategic location, namely a green field site close to the international airport, is crucial for its development. Within the context of the Netherlands, the Zuidas epitomizes a project that aims to evolve into a new internationally competitive office location and a vibrant urban center (Jacob Trip, 2007). The horseshoe-like corridor to Amsterdam's south represents the most spatially dynamic region in the country. In recent decades, numerous infrastructure investments in roads and railways have significantly enhanced both the external and internal accessibility of this area. Coupled with an economic surge in the late 1990s, these developments heightened expectations from both public and private entities for the Zuidas initiative. Since the project's inception in the mid-1990s, ambitions for the area's urban development have consistently expanded in terms of scale and quality (Majoor, 2008). The latest master plan envisions the establishment of a bustling urban hub featuring around 1.1 million square meters of office space, an equal amount of residential apartments, and 500,000 square meters of facilities, to be developed over an estimated period of 30 years (Majoor, 2009).

Majoor (2008) claims, that in the beginning of 1995, the city promoted the establishment of a Zuidas Coalition to improve the commitment of private actors to the integral development of the area, instead of a development as a series of ad-hoc projects. The Zuidas Coalition initially aimed to enhance the economic value of the area and included the main potential investors in the area as well as governmental stakeholders. The Zuidas project is an example of policy-led urban development with strong market interests, as it involves collaboration between the public sector and private investors. While policy-led urban development aims to guide the project in alignment with public interests, strong market interests can overshadow these objectives, leading to a focus on economic growth and competitiveness. Despite the ambitious plans and the involvement of various stakeholders in the Zuidas project, there has been a notable lack of public involvement. Although initial efforts were made to engage nearby residents and other social players in the creation of the first master plan and urban design vision, public participation seems to have diminished over time. Social and civic groups have not been adequately integrated into the planning process, leading to a disconnection between the project and the wider community (Majoor, 2008).

This lack of public involvement raised concerns about the project's ability to facilitate a genuine sense of new urbanity and social cohesion. The Zuidas project began in the mid-1990s, and its development is expected to continue over an estimated period of 30 years (Majoor, 2009; Jacobs, Koster and van Oort, 2014).Thus, studying the Zuidas as a worse-case example of public participation in sustainable urban development can provide valuable insights into the pitfalls and challenges associated with insufficient public involvement. By analyzing the factors that have led to the lack of public participation and its consequences on the achievement of sustainability goals, this research can identify how public input can provide valuable insights through fostering a sense of collective responsibility for the area's sustainable development. The concepts of collaborative planning proposed by Healey and Innes offer valuable frameworks for understanding how effective engagement of diverse stakeholders, including citizens, can contribute to the achievement of sustainability goals. In light of these challenges, there is a clear need for further research to understand the factors contributing to this limited public participation and explore ways to enhance the role of the public in shaping the sustainable development of the Zuidas and similar high-end business districts.

1.5 Scientific and Practical Relevance

As one of the most prominent and ambitious urban development projects in the Netherlands, the Zuidas case in Amsterdam offers a unique opportunity to examine the role of public participation and collaborative planning in sustainable urban development, as it presents cases where sustainability goals and public involvement have faced challenges. Furthermore, the cases that reflect upon public participation in the Zuidas are still underway, meaning, that public participation methods could still be adjusted and improved to lead to higher quality input. As a leading European city with ambitious sustainability goals and a strong commitment to the UN's Sustainable Development Goals, Amsterdam presents an informative and relevant context for international research on sustainable urban planning and public engagement. Studying the Zuidas project can help identify the factors that contributed to the lack of public participation and the barriers to achieving sustainability. By analysing the Zuidas district, urban planners, policymakers, and research can better understand how to improve public engagement and sustainable outcomes in future urban development projects, particularly in high-end business districts.

The academic disciplines engaged in this research project include urban planning, environmental sustainability, and governmental administration. By studying the cases in the Zuidas district, this research aims to contribute to the growing body of knowledge on the relationship between collaborative planning and sustainable urban development. Furthermore, the practical relevance gained from the Amsterdam case can inform urban planners, policymakers, and researchers in other cities facing similar redevelopments in sustainable urban development through greater public engagement. By examining the specific factors influencing public participation in sustainable urban development processes in the Zuidas district, this research can provide comprehensive frameworks that can be applied to other high-end business districts. The lessons learned from this case study can contribute to the broader academic discourse on the influence of public participation in achieving a higher level of SDGs in sustainable urban development processes and ultimately tighten the literature gap of the presence of collaborative planning in business districts which are undergoing redevelopment.

1.6 Societal Relevance

The thesis explores the importance of public participation in urban development, using the Zuidas high-end business district as a case study. This project reveals a strong connection between public participation and sustainable urban growth, highlighting the societal. Societally, this study can affirm that public participation can enhance trust within governmental-led urban development projects, enrich local decision-making, and raise awareness for green urban redevelopment. It can show how giving various stakeholders a voice in the development process can lead to a sense of ownership and alignment of community needs. Even though this alignment may not be vital for the success of urban transformation, it can support civic responsibility. This study can offer a blueprint for how public participation can lead to a more inclusive urban development process. This study could guide urban planners and policymakers to create urban environments that are not only economically viable, but also socially responsible and environmentally sustainable.

1.7 Research Objective and Research Question

The aim of this research is to explore the role of public participation, which includes the input of citizens and private entities, enhances sustainable urban development processes in high-end business districts, using the case of Amsterdam's Zuidas project as an example. First, the study seeks to investigate the factors that have influenced public involvement in the planning and development process of the Zuidas project. Second, assess the effectiveness of existing public participation and collaborative planning strategies in achieving the sustainability goals of the Zuidas project. Third, identify strategies for enhancing public participation and stakeholder engagement in the Zuidas project, in order to contribute to more inclusive sustainable urban planning outcomes. This leads to the following main research question: *How does public participation in the context of governmental-led urban development with strong market interests in the Zuidas impact the achievement of Sustainable Development Goals?*

Sub-questions are the following:
1. What are the key public sustainability goals in the Zuidas and how are they reflected in the policies of public authorities?
2. How has public participation been facilitated in the Zuidas' urban development process, and what are the primary methods for obtaining public input?
3. What factors enable or hinder effective public participation in the Zuidas' urban development and how does public participation influence sustainable urban development processes?
4. In which projects within the Zuidas has public participation contributed to the achievement of sustainability goals, and how can public participation in the Zuidas' urban development process be further enhanced to improve the achievement of public sustainability goals?

This thesis is structured as follows: Chapter 2 presents the Theoretical Framework, reviewing key concepts and theories in the fields of sustainable goals in urban development, meaning of width and depth of public participation, and the role of knowledge. Chapter 3 focuses on the Methodology, discussing the research design, data collection, and data analysis techniques. Limitations and ethical considerations of the study are also addressed. Chapter 4 presents the findings, drawing comparisons between the case study analysis and the theoretical framework, examining the factors influencing public participation and the achievement of sustainability goals in Zuidas. Then, Chapter 5 offers Conclusion and Recommendations, answering the main research question and providing suggestions for enhancing public participation and stakeholder engagement in the Zuidas project and similar urban development initiatives. Lastly, Chapter 6 will focus on the Discussion, Feedback for Future Studies, and Reflection.

2 Theoretical Framework

The purpose of this theoretical framework is to establish a solid foundation for investigating the complex relationships between public participation, collaborative planning, and sustainable urban development. With global urban environments facing environmental, social, and economic sustainability challenges, it is crucial to examine the role of public participation and collaboration in shaping urban development that addresses these objectives. This framework will draw on key concepts and theories from urban planning, public participation, and sustainable development, establishing a clear understanding of the relevant literature and its implications for urban projects such as high-end business districts.

Prominent scholars, such as Patsy Healey, Judith Innes, and Arnstein have contributed significantly to our understanding of the role public participation and collaborative planning play in achieving sustainable urban development. This theoretical framework will build upon their work, providing a foundation for developing a hypotheses and methodology. Furthermore, it will contribute to the broader literature on public participation and collaborative planning by offering insights into how these processes can be effectively utilized to promote sustainable urban development in various contexts, including high-end business districts.

2.1 Sustainable Goals

Sustainability in urban development is a multidimensional concept that encompasses the long-term environmental, social, and economic well-being of urban areas, also known as People, Planet, and Prosperity. Sustainable urban development aims to balance these three dimensions, ensuring that cities grow and evolve in a way that meets the needs of current and future generations without compromising the health of the environment or depleting finite resources (Brundtland, 1985). This balance is particularly relevant in the built environment, where the intersection of corporate, commercial, and public interests creates unique challenges and opportunities for sustainable development. These districts serve as models for other areas and can significantly influence urban development patterns on a larger scale (Moir, Moonen and Clark, 2014). According to Moir et al. (2014), challenges of built environments do include increased power at local level, idea sharing and long-term consensus building with citizens. In high-end business districts, environmental sustainability is of utmost importance due to their potential for high resource consumption, waste generation, and emissions (Wilkinson, 2011). Implementing strategies such as green buildings, renewable energy sources, and efficient transportation systems can help minimize the environmental footprint of these districts while showcasing sustainable practices to other areas (Wilkinson, 2011). The social aspect is crucial in high-end business districts, as they often host a diverse array of stakeholders, including workers, residents, and visitors as many private entities reside there. Ensuring equitable access to public spaces, services, and amenities, as well as promoting social inclusivity, it is essential to create a vibrant and thriving district (Colantonio, 2009). Economic sustainability is another vital aspect of sustainable development in high-end business districts, as they are key drivers of economic growth and innovation in cities (Moir, Moonen and Clark, 2014). Encouraging sustainable economic practices, such as supporting local businesses and promoting circular economies, can contribute to the long-term economic resilience of these districts (Esposito, Tse and Soufani, 2018). The literature that will be analysed throughout this study will shed more light on how the stakeholders in the Zuidas district contribute to the overall development process and elevate sustainable innovation and contribute to the SDGs.

2.2 Public Participation in Urban Development

The concept of public participation in urban planning is rooted in the idea that engaging a diverse range of stakeholders in decision-making process leads to better outcomes (Healey, 2020). Public participation helps to address the complex environmental, social, and economic challenges associated with urban development by incorporating local knowledge and perspectives (Amado *et al.*, 2010). A key aspect of public participation in sustainable urban planning is the involvement of citizens and other stakeholders in various stages of the planning process. This can include information sharing, consultation, collaboration, and empowerment (Arnstein, 1969; Edelenbos, 2005). By involving stakeholders at an early stage, decision-making processes are more likely to be supported and facilitated, reducing the likelihood of conflicts and delay (Verweij *et al.*, 2013). Furthermore, public participation contributed to sustainability by generating diverse knowledge and expertise. Engaging stakeholders with different backgrounds and perspectives can lead to innovative solutions that address the multifaceted challenges of sustainable urban development (Mandell, 2001). In this context, public participation acts as a mechanism for integrating social, environmental, and economic dimensions of sustainability (Amado *et al.*, 2010). The Zuidas district as built environment that is going through redevelopment to include more sustainable pattern in its spatial features, can use a higher degree of public participation to improve its sustainable urban processes and have an increased quality output.

2.3 Depth and Width of Participation in Sustainable Urban Planning

This section, dives into the concepts of depth and width of participation, which are important indicators for assessing the effectiveness of public participation in sustainable urban planning.

2.3.1 Depth of Participation

Depth of participation refers to the extent to which stakeholders are involved in the decision-making process and have the opportunity of influence outcomes (Edelenbos, 2005). Arnstein's ladder of participation provides a useful framework for understanding the different levels of stakeholder engagement, from minimal involvement to significant decision-making power (Luyet *et al.*, 2012). Arnstein's ladder has ever since its publishment been adjusted to incorporate varying degrees of stakeholder involvement in the built environment differently to adhere to modern frameworks better. Luyet, et. Al (2012) has taken over an adapted version of Arnstein's 8 steps model from various researchers, ending up with the following five steps: a) information dissemination, where actors are only informed about the process; b) consultation, where stakeholders share their opinions in organised meetings, and their input considered in decision-making; c) collaboration, where stakeholders actively participate in finding solutions but possess limited authority to make decisions; d) co-decision-making, where stakeholders have equal decision-making power alongside other actors in the process, and; e) empowerment, where decision-making is taking over by stakeholders. Yet, since the Zuidas district is a purely governmental-led project, the fifth step will not be incorporated in this research. Thus, only the first four steps will be used to showcase the depth of participation.

Higher levels of depth in participation are generally associated with greater stakeholder influence and more effective decision-making processes (Luyet *et al.*, 2012; Verweij *et al.*, 2013). Engaging stakeholders at deeper levels can lead to higher acceptance of decisions, more dispersed knowledge, and improved problem-solving capacities (Van Bueren, Klijn and Koppenjan, 2003). In the context of the Zuidas project, understanding the depth of participation can provide valuable insights into the impact of stakeholders involvement on the project's sustainability outcomes.

2.3.2 Width of Participation

Width of participation refers to the diversity of stakeholders involved in the planning process, encompassing various sectors, interest groups, and demographic backgrounds (Healey, 2020). The

importance of width in participation lies in the potential for diverse perspectives and knowledge to contribute to more inclusive and innovative solutions (Amado *et al.*, 2010). A broad range of stakeholders can bring unique perspectives and experiences to the planning process, helping to address the complex challenges associated with sustainable urban development (Healey, 2020). Business districts like the Zuidas present a unique landscape of stakeholder diversity. Not only are they home to corporate entities and businesses, but they also attract a daily influx of workers who might not reside within these districts. These non-residents workers have unique stakes and concerns, distinct from those living in the neighbourhoods. According to Gehl et al. (2013): *"Planners and architects can design public space on the basis of where people are expected to go and to stay."* They interact with the infrastructure, amenities, and services of the district in specific ways, especially during peak business hours. These interactions shape their experiences and consequently, their perspectives on the area's development needs. These concerns are invaluable to planning processes. Literature highlights, that such non-residential stakeholders often have concern that might be overlook when primarily considering the interests of residents or businesses alone. For example, they might be more inclined to highlight issues related to transportation accessibility, parking facilities, or public spaces. Their unique knowledge, being essential to the business district yet not residing there, provides them with an interesting point of view that can bridge residential and commercial concerns (Gehl and Svarre, 2013).

Thus, in the context of the Zuidas district, understanding the width of participation is essential. It helps to ensure that diverse stakeholders perspective are considered. Their inclusion can offer a comprehensive view that might otherwise be overlooked. Moreover, the knowledge can support the achievement of the project's sustainability goals.

2.4 Role of Joint Knowledge

In addition to the depth and the width of participation, it is essential to consider the output of public participation, which can lead to jointly new knowledge, that can be utilised in the urban planning processes. Knowledge exchange and integration among stakeholders are crucial for understanding complex sustainability challenges and developing innovative solutions (Mandell, 2001). Knowledge plays a critical role in urban planning, particularly when it comes to achieving sustainability goals. Sustainable urban development is a complex and multifaceted endeavour, requiring a deep understanding of various environmental, social, and economic factors (Pereira *et al.*, 2018). Planners must draw upon diverse sources of knowledge to inform their decisions and develop strategies that effectively balance competing interests and address the needs of various stakeholders. One key aspect of knowledge in sustainable urban planning is integrating scientific knowledge with local knowledge (Friedmann, 1987; Luyet *et al.*, 2012). Scientific knowledge can inform planners about the environmental and technical aspects of urban development, while local knowledge provides valuable insights into the unique contexts and circumstances of a particular community (Berkes, Colding and Folke, 2000). Innes and Booher (2018) emphasize the importance of collaborative knowledge generation, where stakeholders work together to combine their expertise and create a shared understanding of the issues at hand. Another important aspect of knowledge in sustainable urban planning is the role of learning and capacity building (Healey, 2020). Planners must be adaptive and continuously update their knowledge to respond to changing conditions and new challenges. Engaging in processes of learning and reflection allows planners to improve their understanding of complex sustainability issues and develop more effective strategies for addressing them (Friedmann, 1987).

In the context of the Zuidas project, examining the impact of newly acquired knowledge in urban planning can provide insights into how it is being used, shared, and integrated in the planning process. Ultimately, how the alignment and sharing of knowledge of various stakeholders leads to adaptations in the projects result (De Groot, 2023). This helps to identify potential knowledge gaps in public

participation, contributing to the achievement of sustainability. As this research continues to explore the Zuidas project, it will further investigate the interplay between depth, width, and the impact of acquired knowledge through public participation in shaping sustainable urban development outcomes.

2.5 Conceptual Model

The conceptual model in this study illuminates the intricate interplay among the key constructs outlined in the theoretical framework. It elucidates how public participation, characterized by depth and width as per Arnstein's ladder and Healey's theoretical framework respectively, plays a significant role in steering urban development towards achieving sustainability goals. Central to this model is the premise that comprehensive and meaningful participation from the public, along with input from both private and public stakeholders, profoundly influences the knowledge available and leading to adjustments in the projects redevelopment. The adjusted output through public participation leads to higher achievement of SDGs in the built environment. Finally, the process begins anew, where knowledge from diverse stakeholders will again be acquired in a later stage of the project. Through the lens of this model, the study will delve into the dynamics of these participatory processes within the Zuidas district's urban landscape, with a special focus on the Verdi and Ravel neighbourhoods. This conceptual model provides a visual aid to understanding the mechanisms through which public participation, in all its variety and complexity, contributes to sustainable urban development.
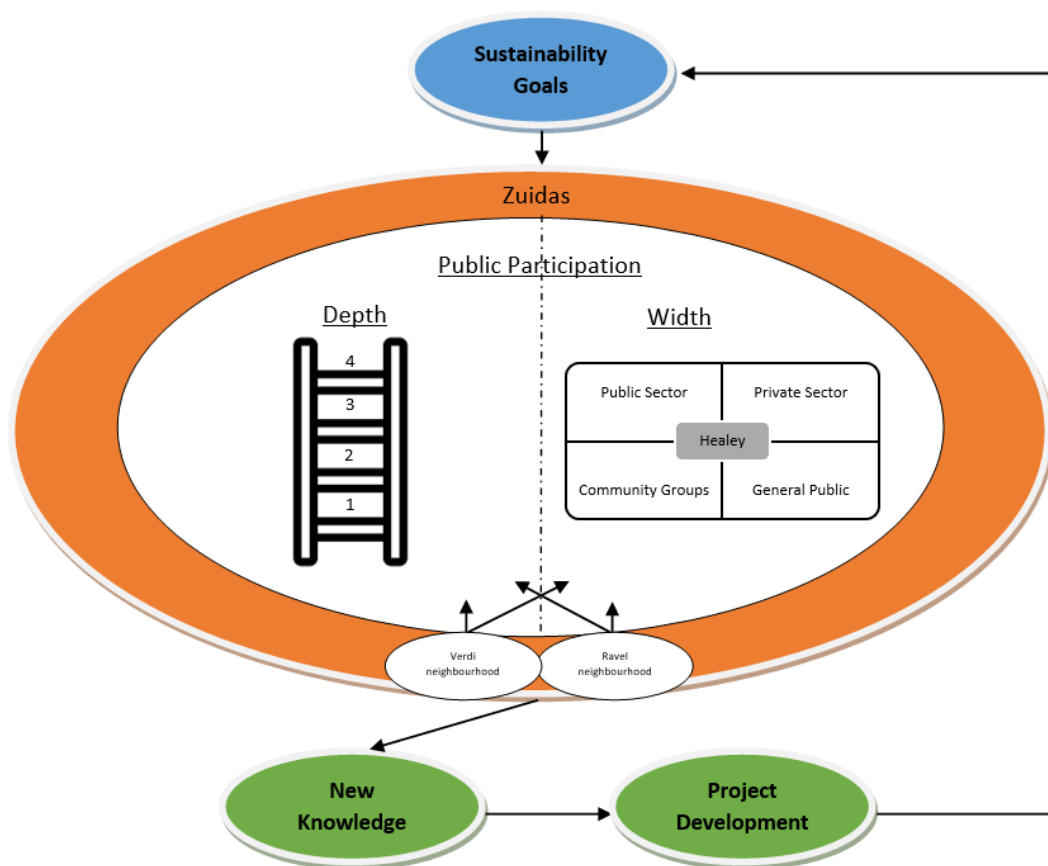
2.6 Hypothesis

The hypothesis for this study could be articulated as follows: "In the context of urban development, greater depth and width of public participation, as guided by Arnstein's ladder of citizen participation and Healey's stakeholder framework, significantly contribute to newly joint knowledge and greater achievement of SDGs in the built environment. Particularly, within the Zuidas district's unique urban environment, comprehensive public participation is expected to foster sustainable outcomes in urban

planning and redevelopment processes. It is expected that a diverse set of stakeholders will positively influence the project's design outcomes through their input.

3 Methodology

This study is based on a qualitative approach designed to facilitate a connection between theoretical constructs and empirical evidence, where cases in the Zuidas district will be used to understand that connection. This connection is crucial when formulating the depth and width of public participation in urban development processes. The depth of public participation will be measured using the four stages of Arnstein's ladder of citizen participation: a) information dissemination, b) consultation, c) collaboration, and d) co-decision-making. The width, or the variety of stakeholders involved, will be assessed through Healey's theoretical framework.

In this study, both the depth and width of public participation are seen as necessary elements for comprehensive urban development processes. As such, cases are selected based on the presence of public participation, irrespective of the perceived "success" or "failure" of the degree of public participation. Cases are chosen based on an exhaustive examination of relevant governmental reports and in-depth interviews, offering a deeper understanding of public participation of each case.

3.1 Case Study Method

Adopting a case study methodology in this research offers the capacity to delve deeply into the complex dynamics of public participation in urban development processes. The Zuidas district, houses several diverse neighbourhoods. Each neighbourhood exhibits unique characteristics and participatory environments, thus in need for a contextual investigation. The selection of the Verdi neighbourhood and the Ravel residential area as case studies allows for such an examination. These areas have been chosen based on several criteria. Primarily, both Verdi and Ravel are currently in active stages of redevelopment. This ongoing transformation provides a dynamic setting to explore how public participation is incorporated and evolves throughout the development process. Furthermore, these areas have demonstrated considerable public participation in their development so far, making them fitting subjects for this research. An additional factor in the selection of these neighbourhoods is the abundance of information available. Both Verdi and Ravel have been well-documented in governmental reports, websites, and other sources. This wealth of information ensures a robust and thorough understanding of the cases, facilitating comprehensive analysis of public participation depth and width in these particular contexts. Lastly, through the information that will be acquired about both neighbourhoods through this study, they will be compared in terms of depth and width of public participation.

In essence, the case study method is a potent tool for this research, allowing for a granular exploration of public participation in Zuidas district's unique neighbourhoods. By focusing on Verdi and Ravel, this study not only captures the participatory variations across different development contexts but also provides detailed insights into the factors that shape these variations.

3.2 Case Study Projects – Verdi and Ravel

Amsterdam's Zuidas district, an ambitious entity striving for a spot in Europe's top ten most sustainable high-end business districts, is currently in the throes of redevelopment. With a pronounced aim to foster green urban spaces and active citizen participation, Zuidas embarks on a journey of transformation. An essential part of this journey involves conforming to the city's mandate for a balanced distribution of housing: 40% social housing, 40% mid-range rentals, and 20% free sector. It is because of this transformation that the neighbourhoods of Verdi and Ravel have been selected for an in-depth examination of public participation in urban planning.
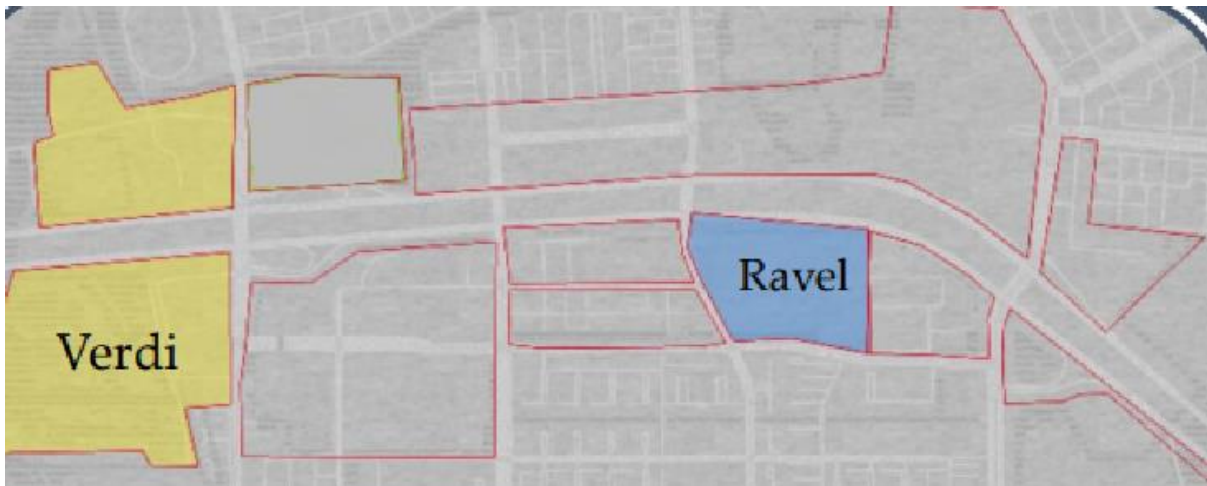
Figure 1 Verdi and Ravel neighbourhoods

As also seen in Figure 1, Verdi is located on the western side of Zuidas, serving as a unique intersection of urban life and landscape. This area, currently undergoing significant transformation, bridges the lively Stadionbuurt and other Zuidas neighbourhoods with the greenery of the Amsterdamse Bos, De Oeverlanden, and the waters of De Nieuwe Meer and the Schinkel. The neighbourhood boasts of the potential to transform into a diverse area, comprising a mix of residential spaces, offices, and amenities in high urban density. Stakeholders' inputs from the surrounding environment have been included to devise the development plans for Verdi, as mentioned in the Projectnota Verdi (Gemeente Amsterdam, 2019).The redevelopment vision for Ravel is centred around the development of a green, mixed residential neighbourhood with high density, primarily aimed at families. This neighbourhood, with an area of about 4.5 hectares, lies located between the Beethovenstraat (on the west), De Boelelaan/Boelegracht (on the south), Antonio Vivaldistraat (on the east), and Maurice Ravellaan (on the north). With its focus on creating a harmonious blend of urban density and high residential quality, Ravel's development seeks to collect the interests of present and future residents (Gemeente Amsterdam, 2020).

These neighbourhoods, each offering a unique perspective on the dynamics of public participation in the district's redevelopment processes, have been chosen due to their ongoing transformation and the wealth of information available about them. The analysis of these cases will provide critical insights into the participation processes and strategies employed to achieve public sustainability goals in urban development.

3.3 Data Scoring

In order to enhance the scoring system's validity and transparency, the study employs Atlas.ti, a robust qualitative data analysis software. This tool allows for an organized and rigorous examination of both depth and width of public participation. Atlas.ti has been chosen due to its ability to facilitate the efficient categorization and analysis of qualitative data. It offers a structured approach for coding the data, aiding in the identification of key themes and patterns. It is particularly effective when dealing with a vast amount of data from diverse sources, such as the multiple stakeholder interviews and governmental reports in this study. The use of Atlas.ti revolves around creating specific code groups and codes that resonate with the study's theoretical frameworks. Each code group represents a major theme or construct, while codes within these groups capture finer-grained aspects or instances related to the main theme. For instance, the code group 'Depth Public Participation' reflects the stages of

Arnstein's ladder of citizen participation, with individual codes like 'Co-Decision-Making', 'Collaboration', 'Consultation', and 'Information' corresponding to these stages. The selection of these code groups and codes is driven by the aim to systematically track and measure both the depth and width of public participation, as well as their connection to sustainable outcomes. The codes 'Depth of PP & Sustainable Outcomes' and 'Width of PP & Sustainable Outcomes', for example, were created to directly probe the interaction between public participation and sustainability.

This operationalisation process is designed to capture a comprehensive, nuanced view of public participation in each case. It helps facilitate a rigorous, systematic examination of public participation in urban development processes and its link to achieving sustainable outcomes. The subsequent analysis of this coded data will form the basis of the discussion of the findings.

Through the use of Atlas.ti, our scoring methodology brings to life the theoretical concepts of depth and width of public participation and its effect on sustainable outcomes in urban planning proceses. Depth of public participation is gauged through the four stages defined by Arnstein's ladder: dissemination of information (1), consultation (2), collaboration (3), and joint decision-making (4). Every case receives a score from 1 to 4, indicative of the highest level of public engagement reached during the development phase. The extent or width of public participation, denoted by the range of stakeholder categories participating in the planning process, is examined using Healey's theoretical framework. Each case is given a numerical score reflecting the count and diversity of actively participating stakeholder categories. The process of scoring is iterative, subject to fine-tuning as more data is collected and interpreted. When merged, the scores for depth and width provide an all-encompassing view of each case's public participation scenario. Finally, through the numerical value of each code's appearance in the neighbourhoods, it is possible to compare both cases with one another and indicate where public participation has been more presented and resulted to which results. This method aspires to offer an integrative understanding of public participation, with the resultant data matrix functioning as a foundation for subsequent analysis and discourse of findings. The ultimate aim of this operationalisation procedure is to provide a robust and systematic investigation of public participation in urban development processes. This contributes to a wider comprehension of how public participation plays a role in achieving sustainable development goals in the Zuidas high-end business district.

3.4 Data Collection

The investigation for this research involves two pivotal components: a literature scan and comprehensive analyse of the output codes and in-depth semi-structured interviews. Both elements offer a broad and nuanced view of public participation in Zuidas' Verdi and Ravel neighbourhoods.
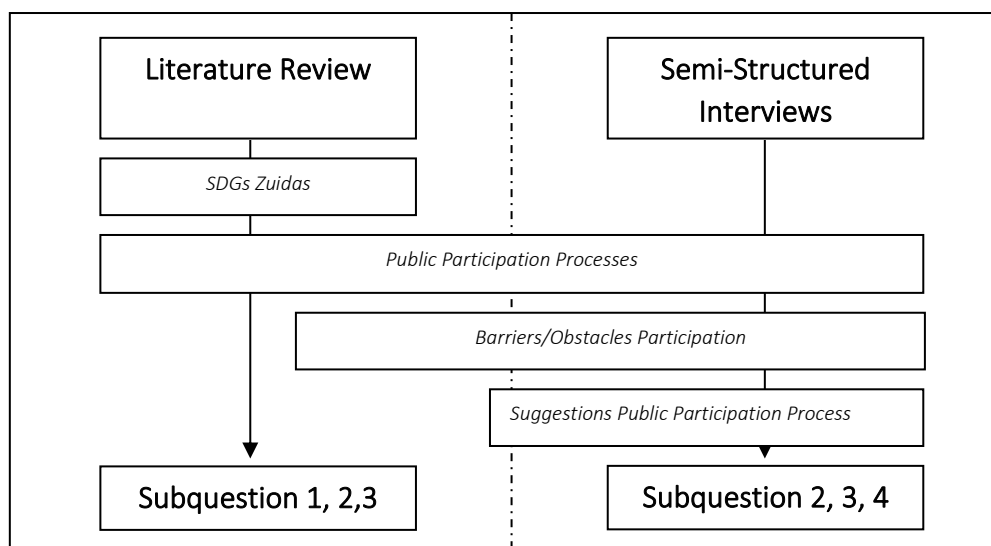

Figure 2 Overview of which methods are used for which subquestion

Figure 2 displays the respective methods and to which subquestion they will contribute information for.

3.4.1 Document Analysis

The document analysis forms the cornerstone of this study. It centers on discovering relevant theories, models, and empirical data in relation to public participation and sustainable urban planning. As shown in Table 1, the review spans across an array of literature sources form 2015 to 2021, which include policy documents, reports, and websites and found through the search engine Google. These resources shed light on themes of public participation in urban development, sustainable urban progression in the specific context of the Zuidas area. The primary academic databases consulted were the official Zuidas library and documents obtained through interviews. The literature written in English and Dutch were considered due to predominant use of both languages. Keywords utilised in the search were: "participatie"(participation), "groen infrastructuur" (green infrastructure), "Zuidas", "Verdi", "Ravel", and "milieu"(sustainability). Initially, literature were screened to determine their relevance. Subsequently, the report was read more thoroughly to determine their appropriateness for the study. Factors such as inclusion of width and depth of public participation in contect of the study. Preference was given to reports that presented empirical evidence to public participation. Literature that did not focus on either of the key words, were excluded from the study. The software Atlas.ti was then employed to systematically analyze the literature, aiding in the creation of code groups and codes reflecting key theories and patterns in the data.

Table 1 Overview of Documents that were analysed

Author	Title	Date	Source
Zuidas SDG Vision			
Gemeente Amstedam	Zuidas Visie 2016	10/16	
Dienst Ruimtelijke Ordening (DRO)	Structural Vision Amsterdam 2040	11/19	
Gemeente Amstedam	Groenvisie 2020-2050	12/20	
Green Business Club Zuidas, Gemeente Amsterdam, Hello Zuidas	Zuidas Duurzamheidsverslag	2018	
Verdi Neighbourhood			
Gemeente Amsterdam	Verdi Projectnota	05/19	
Gemeente Amsterdam	Verdi Deelplan 2	10/20	
Gemeente Amsterdam	Verdi Participatie Deelplan 2	10/20	
Gemeente Amsterdam	Groenplan Verdi	11/21	
Gemeente Amsterdam	Verdi Haalbaarheidsstudie	12/21	
Gemeente Amsterdam	Verdi – Meetpraten (Interview Literature)	n.d.	
Ravel Neighbourhood			
Gemeente Amsterdam	Ravel Uitvoeringsbesluit	04/15	
Gemeente Amsterdam	Ravel Nora van Uitgangspunten	02/20	
Gemeente Amsterdam	Ravel Nora van Uitgangspunten	02/20	
Interviewee 1 (Omgevingsmanager)	Ravel Omgevingsdocument (Interview)	05/20	
Gemeente Amsterdam	Ravel Ontwikkelplan	06/20	

Table 1 displays the literature sources that were analysed with the help of Atlas.ti to understand whether or not public participation has contributed to a more effective achievement of SDGs in the urban planning processes in the Zuidas area. In total 15 documents have been analysed. The documents 'Structural Vision Amsterdam 2040' and 'Groenvisie 2020-2050' have been analysed manually, because it provides the general orientation of how Amsterdam is planning on achieving SDG in the future and were not in direct relation to the Zuidas area.

3.4.2 Semi-structured Interviews

The subsequent phase of data collection encompasses semi-structured interviews. These interviews afford the flexibility needed for in-depth questions with a diverse group of stakeholders engaged in the urban planning process. Semi-structured interviews were used to confirm the information gathered from using atlas.ti. They were used for supporting or contradicting the information in the documents in regards to public participation.

Table 2 Overview of Interviewees

Title in Thesis	Organization/Sector	Occupation	Date	Location
Interviewee 1 (I1)	Gemeente Amsterdam	Omgevingsmanager	01/06	Google Meets
Intreviewee 2 (I2)	Gemeente Amsterdam	Communicatieadviseur	05/06	Microsoft Teams
Interviewee 3 (I3)	Hello Zuidas	Stakeholder (anonymous)	08/06	Google Meets
Interviewee 4 (I4)	Civil Sector	Resident (Anonymous)	13/06	Google Meets

As Table 2 displays, this study benefits from a balanced mix of interviewees that provides perspectives from both public and private sectors, as well as the civil sector. Representing the public sector are Interviewees 1, Omgevingsmanager and 2, Communicatieadviseur from the Gemeente Amsterdam. They offer valuable insights into the urban development process from a governmental stance as they are actively involved in the redevelopment withing the neighbourhoods. Interviewee 3, a stakeholder from Hello Zuidas, provides the private sector's viewpoint, contributing a unique understanding of the business dynamics and stakeholder interactions within the Zuidas area. Hello Zuidas, represents 272 members to have their voice be heard in the development of Zuidas. Finally, Interviewee 4, a local resident, gives voice to the civil sector. Collectively, these perspectives offer a comprehensive and detailed understanding of public participation in the Zuidas urban development processes.

3.4.3 Atlas.ti Code Groups and Codes

The categorization and analysis of the data extracted from the literature review are done using Atlas.ti. This tool facilitates the creation of code groups and codes, mirroring the key themes, theories, and patterns found in the literature.

A code tree, as seen in Attachment 1, simplifies the organization and grouping of codes in this study. This depiction facilitates a better understanding of the complex network of themes and sub-themes arising from the literature review and interviews. The code tree features five primary code groups, each assigned a specific color for easy differentiation. These code groups are 'Depth Public Participation', 'Width Public Participation', 'Sustainable Outcomes', 'Depth of PP & Sustainable Outcomes', and 'Width of PP & Sustainable Outcomes'. Each color stands for a different group: orange represents 'Depth Public Participation', yellow signifies 'Width Public Participation', green corresponds to 'Sustainable Outcomes', blue symbolizes 'Depth of PP & Sustainable Outcomes', and red denotes 'Width of PP & Sustainable Outcomes'. In each color-coded group, the individual codes are specified. For instance, in the orange 'Depth Public Participation' group, the codes 'Co-Decision-Making', 'Collaboration', 'Consultation', and 'Information' are included. The 'Width Public Participation' group in yellow holds codes like 'Collaboration', 'Diversity/Stakeholders', and 'Participation'. The green 'Sustainable Outcomes' group encapsulates codes like 'Long-Term Planning', 'Outcome', 'Resilience', 'Sustainability', and 'Sustainable Urban Development'. However, some codes are relevant across multiple groups. These are designated with a purple color, indicating their cross-cutting nature. For instance, the code 'Influence/Impact' appears in both 'Depth of PP & Sustainable Outcomes' and 'Width of PP & Sustainable Outcomes' groups, highlighting the interconnectedness of these areas. The arrows that are

shown in the code group "Sustainable Outcomes" and lead first from "Sustainability" to "Vision", indicates that SDGs on a national level are reflected on a more local vision by the municipalities. Then, vision leads to "long-term planning" on the one hand and "sustainable urban development" on the other, which is reflected in implementations in the built environment. Last but not least, both of the codes point to the code "resilience" which stands for increased resilience in the area.

This visual offers a clear, color-coded map of the study's thematic landscape, highlighting the different layers and intersections within the data. It helps in understanding the complexity and richness of the information collected, providing a comprehensive outlook on the relationships between public participation, urban planning, and sustainability.

3.5 Ethical Considerations

The interview's ethical principles are based on the research standards required by the Netherlands Code of Conduct for Research Integrity, the General Data Protection Regulation (GDPR), and the GDPR Implementation Act. Firstly, the interviewees were fully informed about the nature of the study and the reasoning behind conducting the interview, including how time-consuming the interview will be. Before proceeding with the interview, all interviewees were asked to provide consent. Moreover, the interviewees were also informed and given the choice to withdraw their consent at any moment, at their convenience, without any consequences. The acquired results from the interview were processed in a scientifically responsible manner while adhering to the GDPR rules.

3.6 Operationalisation

This crucial step, termed 'operationalisation', involves the transformation of the research question's qualitative aspects into quantifiable data, which can then be systematically analysed using Atlas.ti software. The process brings to life the theoretical notions of 'Depth' and 'Width' of public participation and their impact on sustainable outcomes within urban planning processes in the Zuidas area. Here, the elaboration on how the operationalisation process was executed, how the coding has been employed, the analysis of the data, and the formation of a data matrix for improved interpretation have been formed.

3.6.1 The Coding Process

A crucial element in the operationalisation is the act of designating codes and code groups. As previously pointed out, the code groups incorporate the principal theoretical constructs: 'Depth Public Participation', 'Width Public Participation', 'Sustainable Outcomes', 'Depth of PP & Sustainable Outcomes', and 'Width of PP & Sustainable Outcomes'. Each of these clusters contains specific codes that signify detailed aspects tied to the core theme.

For example, the code group 'Depth Public Participation' mirrors Arnstein's ladder of citizen involvement stages. Individual codes in this cluster, such as 'Co-Decision-Making', 'Collaboration', 'Consultation', and 'Information', stand for these steps. The 'Width Public Participation' code group, informed by Healey's theoretical framework, includes codes like 'Collaboration', 'Diversity/Stakeholders', and 'Participation', indicating the diversity and degree of stakeholder engagement. These codes and code groups function as pivotal analytical markers, enabling the categorization, tracking, and quantification of public participation and their association with sustainable outcomes. They lay the groundwork for a systematic analysis of the depth and width of public participation in the documents. The alignment of these code groups and codes provides a distinct structure to evaluate the qualitative aspects of the study. In the subsequent phase of data analysis, the encoded information will undergo an examination to identify patterns and correlations between the cases and the influence of public participation. This process of coding not only aids in arranging

qualitative data but also assists in changing it into a quantifiable format through numerical values and displaying them via tables.

3.6.2 Data Analysis

The analysis stage, integral to the operationalisation process, employs the codes and coding groups defined in the preceding stages to break down and interpret the data. Applying the coding scheme to the entirety of the data set allows for a thorough exploration of public participation in urban development and its connection to sustainable outcomes. A systematic approach characterises this analysis, leveraging Atlas.ti's analytical capabilities. The software permits a structured and efficient examination of the extensive data set. In addition, the flexibility of the tool facilitates adjustments to the coding scheme as new insights emerge from the data.

The first stage of analysis involves the application of the defined codes to relevant segments of data, see Table 1. This process uncovers patterns and relationships within the data and helps measure both the depth and width of public participation. The software's querying feature aids in exploring these relationships, offering the ability to identify and isolate instances of specific codes across the entire data set. The second stage delves into a more analysis stage. This involves examining the frequency and co-occurrence of codes within and across different documents, providing insights into common themes and variances. Such an analysis yields a more better understanding of public participation and its impact on sustainable outcomes. The final stage of the data analysis centres on the interpretation of these findings. This process seeks to draw meaningful conclusions from the analysed data, contextualising it within the broader theoretical framework of public participation in urban development and its contribution to sustainable outcomes. Finally, the information drawn from the interviews will then be used to either agree or disagree with the findings from the data analysis and aid as further information source for sub-question 4.

4 Results

4.1 Data Matrix

A result of the operationalisation process is the development of a data matrix. This comprehensive framework is crafted through the systematic arrangement of the analysed data, making it vital in extracting valuable insights about the influence of public participation in the Zuidas district. The data matrix comprises of the code groups—depth and width of public participation and sustainable outcomes—serving as the framework's primary axes. Each cell within this matrix represents an intersection of codes, representing specific information. The matrix allows for an in-depth exploration of the relationship between different constructs. The depth and width scores assigned to each case constitute the primary data within this matrix. These scores provide a quantifiable measure of public participation and are instrumental in identifying patterns or anomalies within the data. The frequency of codes and their co-occurrences are also reflected in this matrix, which helps to illuminate correlations and highlight notable trends. Furthermore, the matrix assists in visually representing the distribution of codes across different documents. This aids in comprehending the scope and range of public participation in urban development processes, revealing the degree of stakeholder engagement and its correlation with sustainable outcomes.

Table 3 Code Occurrence Sorted by Code Groups

			Ravel 5 ⊙ 49	Verdi 6 ⊙ 96	Zuidas 2 ⊙ 33	Totals
◇ Depth of PP & Sustainable O...	4	⊙ 116	25	71	20	116
◇ Depth Public Participation	4	⊙ 77	28	38	11	77
◇ Sustainable Outcomes	6	⊙ 111	26	60	25	111
◇ Width of PP & Sustainable O...	4	⊙ 107	22	71	14	107
◇ Width Public Participation	3	⊙ 117	35	55	27	117
Totals			136	295	97	528

Table 3 presents an account of how frequently different code groups occur across the studied neighbourhoods: Ravel, Verdi, and Zuidas. The groups displayed consist of "Depth of PP & Sustainable Outcomes", "Depth Public Participation", "Sustainable Outcomes", "Width of PP & Sustainable Outcomes", and "Width Public Participation". It can be noticed that there is a varying representation of each code group in different neighbourhoods, signifying the unique participation patterns within each area.

Table 4 Code Occurrence Sorted by Depth and Width Public Participation Codes

		Ravel 5 ⊙ 49	Verdi 6 ⊙ 96	Zuidas 2 ⊙ 33	Totals
● ◇ Co-Decision-Making	⊙ 5	1	4		5
● ◇ Collaboration	⊙ 38	12	24	2	38
● ◇ Consultation	⊙ 26	9	8	9	26
● ◇ Diversity/Stakeholders	⊙ 45	12	22	11	45
● ◇ Information	⊙ 16	10	4	2	16
● ◇ Participation	⊙ 89	28	36	25	89
Totals		72	98	49	219

Table 4 zeroes in on the frequency of occurrence of the specific codes that fall under the categories of Depth and Width Public Participation in each neighbourhood. The codes encapsulated include "Co-Decision-Making", "Collaboration", "Consultation", "Diversity/Stakeholders", "Information", and "Participation". The varying levels of each code across neighbourhoods underscore the differences in the modalities and depth of public participation employed in these different contexts

Table 5 Code Occurrence Sorted by Depth and Width Public Participation in Relation to Sustainable Outcomes

		Ravel 5 ⊙ 49	Verdi 6 ⊙ 96	Zuidas 2 ⊙ 33	Totals
● ◇ Barriers/Obstacles	⊙ 12	2	8	2	12
● ◇ Influence/Impact	⊙ 38	6	30	2	38
● ◇ Involvement	⊙ 79	18	41	20	79
● ◇ Long-Term Planning	⊙ 19	3	15	1	19
● ◇ Outcome/Knowledge	⊙ 43	7	33	3	43
● ◇ Participation Process	⊙ 50	15	22	13	50
● ◇ Resilience	⊙ 28	8	14	6	28
● ◇ Sustainability (Milieu)	⊙ 19	4	12	3	19
● ◇ Sustainable Urban Development	⊙ 61	12	37	12	61
● ◇ Vision	⊙ 22	7		15	22
Totals		82	212	77	371

Table 5, on the other hand, provides an overview of the occurrence of codes relating to Depth and Width Public Participation in conjunction with Sustainable Outcomes. It explores codes such as "Barriers/Obstacles", "Influence/Impact", "Involvement", "Long-Term Planning", "Outcome/Knowledge", "Participation Process", "Resilience", "Sustainability", and "Sustainable Urban Development". The distribution of these codes across Ravel, Verdi, and Zuidas gives insights into the interplay between participation and sustainable outcomes within these areas.

Table 6 Arnstein's Ladder of Participation

Neighbourhood	Information	Consultation	Collaboration	Co-Decision-Making
Ravel	10	9	12	1
Verdi	4	8	24	4

In Table 6, the number values represent the number of occurrences of each category of Arnstein's ladder within the documents pertaining to each neighborhood. The 'Information' column displays the number of times the analyzed documents referred to information dissemination as the participation form. Similarly, the 'Consultation', 'Collaboration', and 'Co-Decision-Making' columns represent the frequencies of these forms of participation.

Table 7 Healey's Components of Participation

Neighbourhood	Participation	Diversity/Stakeholders
Ravel	28	12
Verdi	36	22

In Table 7, the numbers represent how frequently each component of Healey's framework was found in the analyzed documents of each neighbourhood. The 'Participation' column indicates the number of instances where general participation was referred to in the documents, while 'Diversity/Stakeholders' column shows the frequency of explicit mention of diverse stakeholders' involvement in the process

Table 8 Weighted Average Scored by Participation

Neighbourhood	Information	Consultation
Ravel	2.4	1.5
Verdi	2.7	1.7

Table 8 contains the weighted averages calculated from the frequency of each form of participation in Arnstein's and Healey's models. The weights for Arnstein's model are assigned according to the level of participation on Arnstein's ladder: 1 for 'Information', 2 for 'Consultation', 3 for 'Collaboration', and 4 for 'Co-Decision-Making'. For Healey's model, both 'Participation' and 'Diversity/Stakeholders' are equally weighted at 1. The weighted average score for each model is the sum of the product of the frequency and the weight, divided by the total frequency. These scores provide an overall indication of the depth (Arnstein) and width (Healey) of public participation in each neighborhood

Figure 3 and Figure 4 below serve purely visually to make it easier to understand the gap between Verdi and Ravel in terms of depth and width of public participation.
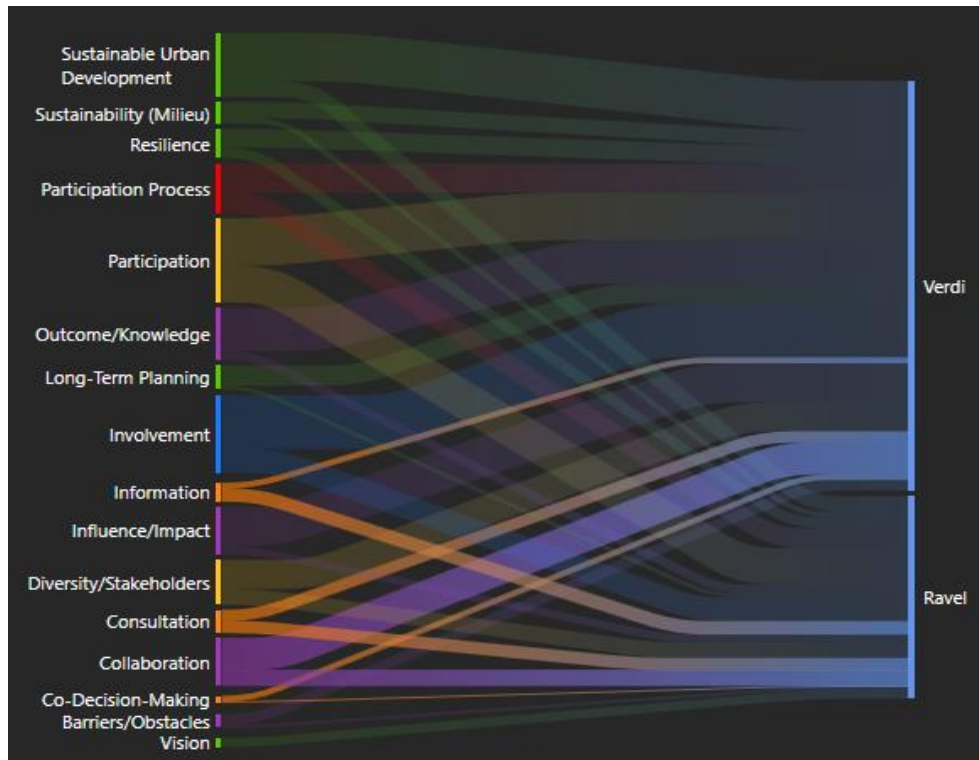

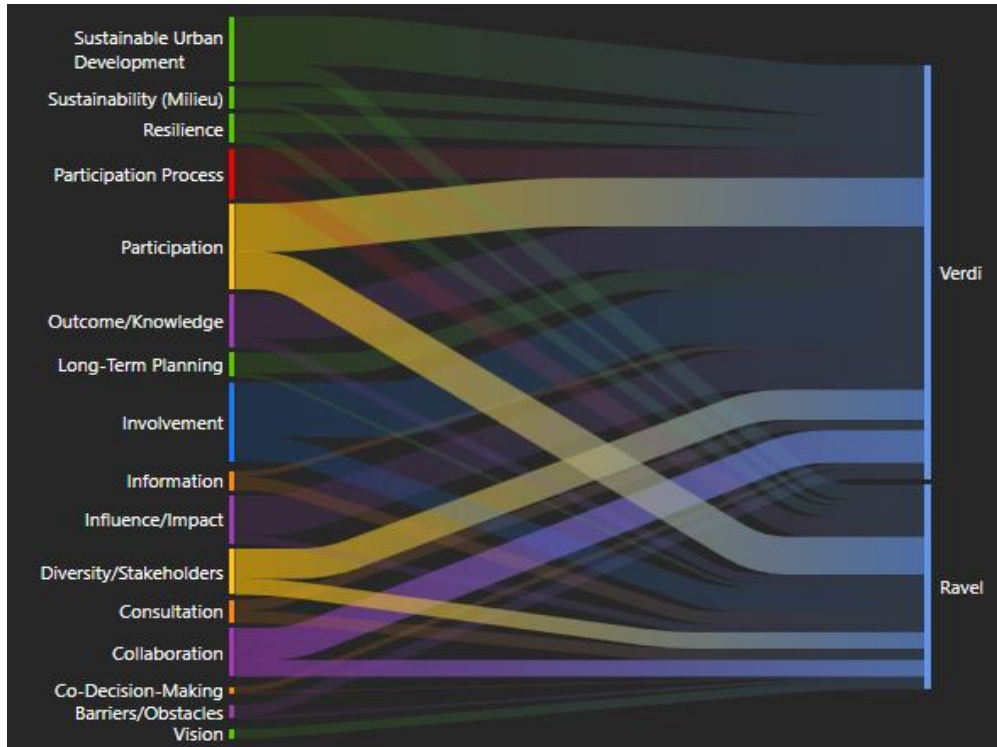*Figure 3 Sankey Chart of Depth Public Participation in Verdi compared to Ravel*

Figure 4 Sankey Chart of Width Public Participation in Verdi compared to Ravel

5 Findings

This chapter presents the findings derived from the examination of the collected data, employing the research methods mentioned in the Methodology chapter. The focus lies on demonstrating the empirical results in an organized and understandable manner by having arranged the results according to the sub-questions of this study, as these guided the initial data collection and analysis process. These sub-questions sought to explore the depth and width of public participation and sustainable outcomes in the Ravel and Verdi neighbourhoods of Amsterdam. The data for each sub-question is exhibited through carefully constructed visual aids including tables, charts, and graphs displayed in chapter 3.4.6. Furthermore, a concise textual representation complements these visual aids, offering readers a better understanding of the results. In each section, an initial summary of the results pertaining to the specific sub-question is provided. It is crucial to note that the results will be discussed in the context of the broader research question, existing literature, and theoretical framework in the subsequent chapter. Each of these sections will be concluded with a summary of results. By providing this framework, the aim is to present the findings in a manner that is transparent, easy to follow, and directly tied to the research objectives.

5.1 Sub-question 1

This section explores the first sub-question of the research: "What are the key public sustainability goals in the Zuidas and how are they reflected in the policies of public authorities?". For the first sub-question, the codes: Sustainability (Milieu), Vision, Sustainable Urban Development, Long-Term Planning, and Resilience were used to identify the key public sustainability goals. Table 5 displays how abundant the above-mentioned codes have been found in both, the Verdi and the Ravel neighbourhood. This already shows, that sustainability has been an ongoing topic within the Zuidas area.

The "Structural Vision Amsterdam 2040" and the "Groenvisie 2020-2050" provide a city-wide narrative, setting the stage for the sustainable initiatives carried out in more localized projects such as the Zuidas development. In the "Structural Vision Amsterdam 2040", it's stated that "Amsterdam continues to work towards a sustainable future, focusing on a balance between the natural environment and urban development". This exhibits a commitment to SDG 15 - Life on Land, indicating a goal to harmonize the built environment with the city's natural surroundings. Following the same theme, the "Groenvisie 2020-2050" envisions a city where "green spaces and biodiversity flourish, contributing to the health and well-being of its residents". This aligns with multiple SDGs: SDG 11 - Sustainable Cities and Communities, by promoting the development of green urban spaces; SDG 3 - Good Health and Well-being, by acknowledging the role of green spaces in public health; and SDG 15 - Life on Land, by emphasizing the importance of biodiversity.

Focusing on the Zuidas area and the cases itself, similar sustainability ambitions can be traced. The "Zuidas Visie 2016" document clearly outlines a dedication to creating a "healthy working environment where the welfare of employees is paramount" (15:19). This echoes SDG 3 - Good Health and Well-being and SDG 8 - Decent Work and Economic Growth. Additionally, the reference to quality education and research environment (15:24) aligns with SDG 4 - Quality Education. Public participation in the design of public spaces is also underscored (15:30), which aligns with SDG 11 - Sustainable Cities and Communities, stressing the importance of inclusive urban planning. Furthermore, the commitment to environmental health and attractive spaces (15:19) aligns with SDG 11 - Sustainable Cities and Communities, and partially with SDG 13 - Climate Action, implying a commitment to reduce the impacts of climate change. Moreover, the "Zuidas Sustainability Report", prepared in collaboration with Hello

Zuidas and the Green Business Club, is a testament to SDG 17 - Partnerships for the Goals, emphasizing the power of partnership in achieving sustainability goals.

Taken together, the above-mentioned quotations showcase, that sustainability is present in the overall vision for the Zuidas area and the two neighbourhoods, Verdi and Ravel. This is also evident when looking at Table 3 and the occurrence of the code group 'Sustainable Outcomes', showcasing, that documents about Verdi and Ravel included multiple quotations to in connection to sustainability. The documents reveal Amsterdam's multi-faceted approach to sustainable urban development in the Zuidas area. The city's commitments span across SDGs 3, 4, 8, 11, 13, 15, and 17, highlighting a holistic approach that connects health, education, community participation, environmental preservation, and partnerships in the pursuit of sustainable urban development.

5.2 Sub-question 2

This section explores the second sub-question of the research: "How has public participation been facilitated in the Zuidas' urban development process, and what are the primary methods for obtaining public input?". Here the codes: Information, Consultation, Collaboration, Co-Decision-Making, Diversity/Stakeholders, Participation, Participation Process were taken into account to answer this sub-question. Figure 4 and Figure 5 displays the size of the code mentions in proportion to the other codes. It becomes clear, that public participation has been quoted over and over in the Zuidas area.

5.2.1 Public Participation

Public participation is perceived as a symbiotic relationship in Verdi and Ravel, emphasizing collaboration and integration. The integration of organizations like VU, VUmc, Rechtbank, and RAI is a result of this approach, with the realization of the mutual value that such partnerships bring to the area (15:23). Interviewee 1 (I1), Omgevingsmanager Gemeente Amsterdam, elaborates on this: "Building connections with these institutions strengthens the community. We are fostering a shared vision." The focus on knowledge and innovation as part of the Zuidas vision is another aspect where public participation plays a crucial role. The presence of educational institutions and international businesses offers a potent opportunity for the areas to develop as a vital knowledge cluster for the city and region (15:26). Interviewee 3 (I3), a Hello Zuidas Stakeholder, emphasizes, "The presence of creativity and expertise in Verdi and Ravel is fostering a dynamic environment, where innovative ideas emerge.". Furthermore, public participation is seen as a core principle in designing public spaces in Verdi and Ravel (15:30). Efforts such as the "Leef Zuidas" program demonstrate a commitment to assisting residents and private entities in realizing their ideas for the areas (15:35). Interviewee 4 (I4), a Civil Sector Resident, explains, "It feels empowering to know that our voices are heard.". "Ruimte bieden aan ideeën en initiatieven van bewoners" (15:29) shortly explains the philosophy behind civil public participation in Zuidas. Public participation in Verdi and Ravel is not restricted to the residents alone as mentioned in the "Zuidas Duurzamheidsverslag". Initiatives like the exploration of Verdi's possibilities involve engaging a wide spectrum of stakeholders, from water sports enthusiasts to general Amsterdammers, reflecting an inclusive approach (16:1). I1 shares insights on this, "It's about making Verdi an attractive place for everyone. The diversity of ideas and opinions enriches the development process." There is a strong perception that public participation is a catalyst for sustainable and safe development. Collaborative efforts such as the Zuidas sustainability report or the Veiligheidsplatform Zuidas reflect this stance (15:40, 16:3). Interviewee 2 (I2), Communicatieadviseur Gemeente Amsterdam, states, "Transparency and collaboration with organizations and residents are key. It ensures safety and aligns us with sustainability goals.". Sustainability is perceived as a communal objective. The collaboration with Hello Zuidas and the Green Business Club in the creation of the Zuidas sustainability report underscores this collaborative approach. The LeefZuidas programme is one

example of that (15:40). I2 emphasizes the community's role, "Residents, businesses, and authorities are working together to achieve sustainability goals.

Public participation in Verdi and Ravel is very community-driven approach, where residents, businesses, and authorities are co-creators of the urban landscape in the Zuidas area. This is also indicated in Table 4 by the occurrence of quotations of the code groups width and depth of public participation. The output from the table shows, that especially the codes 'collaboration' and 'co-decision making' are both present in the documents. Meaning, that stakeholders are actively participating in both neighbourhoods in the development processes.

5.2.2 Methods of Obtaining Public Input

The development of Verdi and Ravel in the Zuidas area of Amsterdam has seen extensive and innovative efforts to engage both public and private stakeholders. These efforts reflect a multiple approach to community involvement.

Among the primary tools for public engagement has been the utilization of online platforms. The creation of a video summarizing key project decisions was an essential part of disseminating information (11:18). Additionally, the online deployment of various dilemmas related to the project attracted significant public response with 421 people reacting (12:9). The results of an online poll underscored the need for additional amenities in Zuidas (15:22). The creation of 45 statements placed on a public website allowed everyone to share their opinions on various topics related to Zuidas, attracting the feedback of 874 individuals (15:4). This method enhanced public participation by providing an accessible platform for individuals to express their views. "These online tools were instrumental in engaging a broad audience", says I2. Various formal mechanisms were employed, including the formal notice of investment plans to enable the public to submit their views (11:18). Furthermore, a three-round participatory process was organized to facilitate direct conversations with stakeholders in Verdi, such as organising workshops (11:9, 12:8). I1, emphasized, "Our goal was to provide opportunities for all stakeholders to voice their opinions and ask questions.". To further extend accessibility, both physical and digital consultation hours were organized (11:18). This allowed stakeholders to interact directly with the concerned authorities, clearing doubts, and addressing issues. Beyond formal channels, community events and interactive sessions were arranged. These included gatherings at pavilion Circl to gauge the opinions of Amsterdam citizens not directly linked to the area (12:10) and an app designed to foster dialogue with direct residents as a way to involve the community in the design process (16:2). "It feels like Verdi and Ravel cares with those who live and work here," says I4. In building the vision for the area, authorities actively collaborated with various institutions, residents, and businesses, including cooperative marketing activities and public space planning (15:21, 15:37). Recognizing the complexity of multiple construction projects, a dedicated communication channel, or "loket," was established to facilitate public interaction (15:16). Furthermore, all activities were tracked through the "LeefZuidas", or other time management plans to keep stakeholders informed and give them the opportunity to have their voice be heard if necessary (2:9, 15:40). I3 commented, "This one-stop information center has bridged the gap between the construction teams and the residents, ensuring that the community stays informed and engaged".

Overall, the engagement strategies used in Verdi and Ravel exemplify a multifaceted approach that leverages both traditional and modern tools. The methods reflect a strong commitment to ensuring that community voices are not just heard but actively shape the development of these significant urban areas. Interviewees employed from the government were actively mentioning, that they were taking their time with gathering feedback, so that as many stakeholders as possible can voice their concerns throughout the process.

5.2.3 Transparency and Communication

The development projects in Verdi and Ravel reflect on the effort by the authorities to maintain a high level of transparency and engagement with stakeholders. The documents especially mention how information was shared. Central to the projects in Verdi and Ravel is a well-structured participatory approach involving stakeholders at various levels (12:8). As I1 explained, "The engagement process has been designed to make everyone feel included. We've been having direct conversations and also online polls to get a wide perspective." Indeed, this multifaceted interaction is seen across the board with stakeholders including residents, students, entrepreneurs, and others (15:4). Moreover, the developers have even reached out to individuals with no direct interest in the area, further broadening the range of voices that can inform development (12:10). This mirrors what I4 says "I really feel heard in this process.". The developers have also been particularly proactive in seeking one-on-one interactions with specific stakeholders (11:11), demonstrating a willingness to tailor communication methods to the needs and interests of different groups. Reflecting on this, I3, said, "[…] the fact that they reached out to us directly, shows they value our insights.". Transparency is further evident in the commitment to provide extensive public information regarding construction activities (2:9, 15:16). The establishment of a single point of contact, accessible through various channels, ensures that all interested parties have easy access to relevant information. This was strongly supported by I2, "[…] one central point of information is crucial. It ensures that our communication is clear to everyone.". The willingness to engage stakeholders in both physical and digital spaces, as seen through conferences, workshops and online polls (11:9, 15:22), illustrates a an understanding of how to reach diverse audiences. From two-day conferences to apps specifically designed for public interaction (16:2), the initiatives in Verdi and Ravel have utilized various platforms for participatory dialogue. Furthermore, creating content that appeals to broader audiences, like the short video to explain development, which is displayed on the official Zuidas website (11:16), further underscores transparency. As I4 places it, " It's easier to understand when you can see the big picture.". Moreover, the developers have been very active in incorporating feedback, as seen in the case of the Zuidas Vision and the Meetpraten documents for Verdi and Ravel where they've collected public opinions (15:4). I1 supports this, saying: "It was not about convincing but about understanding and co-creating.".

From the published documents and the interviews it can be said, that the development processes in Verdi and Ravel are marked by an earnest commitment to engage, communicate, and include all possible stakeholders. Through methods that are both formal and informal, digital and physical, the developers managed to create an environment for transparency. This paints a picture of a community-driven approach. Whether it is regular residents or institutional stakeholders like universities and businesses (15:21).

5.3 Sub- question 3

This section explores the third sub-question of the research: "What factors enable or hinder effective public participation in the Zuidas' urban development and how does public participation influence sustainable urban development processes?". Here the codes: Influence/Impact, Outcome/Knowledge, Barriers/Obstacles, Long-Term Planning, Participation, and Involvement were used to obtain information about the enablers, barriers and influence of public participation in the Zuidas.

5.3.1 Enablers of Public Participation in Zuidas

An important contributor is the Municipality of Amsterdam's commitment to encourage public participation. The Gemeente Amsterdam has been proactive in engaging stakeholders in dialogue, as found in the "Verdi Participatie Deelplan 2" document, involving stakeholders also in the further development of Verdi, when it comes to designing the layout of public space around locations, such as the around the Arsenal soccer club, the Ijsbaanpad, or the Tripolis (11:39, 12:25, 15:14). As I1, shared:

"By actively involving the community in decision-making, we foster an environment that encourages public participation." The "Verdi Participatie Deelplan 2" document indicates that local residents and stakeholders are highly invested in the preservation of green spaces (11:24). Enabling a high degree of process management throughout the projects. I4, expressed: "We deeply care about our community, its development, and preservation. That's why we actively participate." Transparency in communication is another substantial enabler as already revealed in sub-quesiton 4.2.3. The documents reveal a correlation between the willingness of stakeholders to participate and the clarity of the project team's intentions (11:29). This was corroborated by I2, Gemeente Amsterdam's Communicatieadviseur, who emphasised: "Open communication fosters trust, which consequently drives engagement." Moreover, the application of local knowledge and experiences significantly boosts public participation. As per the "Verdi Projectnota" (12:34), these insights play a vital role in decision-making, as they reveal bottlenecks. I3, concurred with this, stating: "Our experiences and insights are recognised and utilised, motivating us to engage more.". Here it becomes clear, that the feedback mechanism also acts as an important enabler, especially when looking at the example of Ravel, where the feedback was taking into consideration from multiple stakeholders, such as residents and private entities, making the feedback moments a strong enabler for knowledge (4:1, 4:5). Finally, the shared aspiration for sustainable urban development enhances public engagement. Verdi documents highlight, that the stakeholders' consistent demand for sustainable practices (12:19). This sentiment is reflected in the words of I2, who noted: "The common goal for a greener Zuidas encourages us all to actively participate.".

The documents show, that the enablers of public participation in Zuidas revolve around a commitment from the municipality of Amsterdam for transparency in communication, stakeholders' interest in preservation of green spaces, and feedback mechanisms. Furthermore, the common goal for more greenery and sustainability in public space unites the enablers and foster engagement.

5.3.2 Barriers to Public Participation in Zuidas

Predominantly, the technical nature of urban development projects and fast switch to sustainable technology alternatives act as a significant deterrent. The documents, especially the feedback moments, revealed the feeling stakeholders encounter when faced with complicated project terminologies and unawareness of the municipality (7:12, 8:13, 11:41). I2, confirmed this, saying, "The technicalities of these projects often seem very complex to the general public, making it difficult for them to take part in them, which is why we are breaking down the explanation as much as possible." Concurrently, ineffective communication pose challenges. The feedback moments point out the dissatisfaction stakeholders often express regarding the developers' communication and sometimes them to have no reason to feel the need to communicate (11:41). I4, shared: "Often, it feels as if the whole picture isn't clear, which makes it tough for us to engage constructively. Documents suggest that stakeholders feel their feedback is not very much taking into consideration, especially when it comes to car parking in Verdi and Ravel. The community fears, that with new housing (11:30) and the strong focus on sustainable development (1:4), that car use is becoming obsolete and that not enough parking will be available. As Figure 6 displays, Zuidas residents are keener on car use than the average Amsterdam resident. This mindset is in conflict with the implementations that developers have for the Zuidas area, as one of the targets is to promote bicycle roads and public transport (7:14, 7:17).
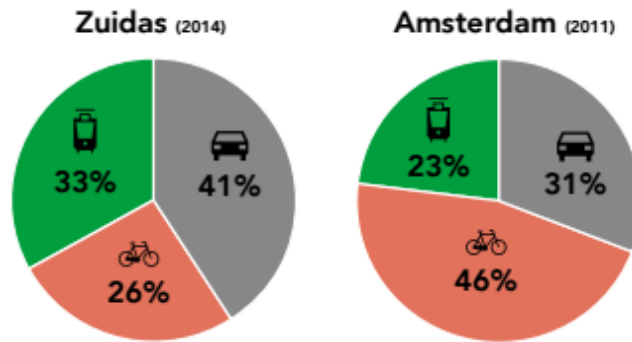
Figure 5 Car Use Zuidas compared to Amsterdam in Percentage (15:42)

Another example would be, that when two stakeholders are in disagreement, such as Hello Zuidas and Circl of what is best in terms of greenery in Verdi, the spatial planners are not able to satisfy all stakeholders together (12:31). Lastly, the perceived power imbalance is a recurring concern. The "Ravel Uitvoeringsbesluit" document shows that stakeholders often sense their input doesn't hold as much sway as that of other stakeholders (6:11). I4, shared a personal experience: "At times, it seems as if our inputs are lost amidst stronger voices, despite being a part of the conversation.". This makes participants at workshops or feedback moments feel less values, as their ideas can easily be regarded as not important.

5.3.3 Influence of Public Participation on Sustainable Urban Development Processes

Despite the barriers mentioned in 4.3.2, public participation has influence on multiple stages in the process of the projects. A prominent manifestation of public participation's influence is seen in the refinement of development plans. The "Vedi Meepraten" document shows several instances where feedback from stakeholders has resulted in modifications to initial proposals (7:3, 8:6, 8:13, 11:20, 11:38, 12:14, 12:20). I1, affirmed this, stating, "Stakeholder feedback is indispensable. It has on multiple occasions led us to rethink and refine our plans." Furthermore, external parties that have invested in the Zuidas area and have taken the development into their own hands, are supported by sustainable guidelines, but have their own say on how they would like to develop their space (8:11). Equally important is public participation's role in enhancing the legitimacy of the development process. The Verdi project indicates that when stakeholders have a voice in decision-making, there is heightened acceptance of the outcomes (8:13, 12:20). This sentiment was echoed by I3, who remarked, "Having our voices heard fosters a sense of ownership and acceptance of the process, even if the outcome isn't exactly as we envisioned." This is also supported by Figure 7, when 65% of residents and private entities agreed to being involved in the spatial development of the Zuidas is important.
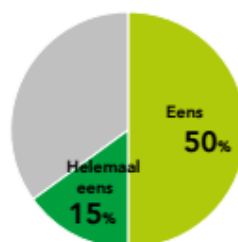

Figure 6 Survey about Public Influence in Spatial Planning

Moreover, public participation has proven instrumental in highlighting local knowledge and concerns. The "Verdi Participatie Deelplan 2" document references several instances where local residents have raised points that would have otherwise been overlooked by planners (11:39, 12:20). I4, offered a tangible example: "We are familiar with our locality's experiences that might be missed by those not living here. Our inputs help shape the future." Public participation also contributes to fostering social inclusion in urban development. The engagement of different participation processes ensure the needs and perspectives of multiple stakeholders that can be considered (4:6, 8:13, 9:8, 9:15). I2, supported this point, saying, "Active participation helps us hear from a wide range of voices, making the development process more open."

Sub-question 4

This section explores the fourth sub-question of the research: "In which projects within the Zuidas has public participation contributed to the achievement of sustainability goals, and how can public participation in the Zuidas' urban development process be further enhanced to improve the achievement of public sustainability goals?". Here the code groups: Resilience, Involvement, Influence/Impact, Barriers/Obstacles, Outcome/Knowledge, and Participation Process were used to support drawing up the results.

5.4.1 Linking Public Participation to the Achievement of SDGs

In the neighbourhood of Verdi and Ravel, a participatory approach is used to incorporate diverse perspectives and ideas, improving the area's sustainability outcomes.

The case of Verdi project demonstrates how public participation was used to address different SDGs. For instance, participants during the planning stages stressed the importance of preserving the green character of the area (11:20), aligning with SDG 15 and SDG 11. Specifically, these participants emphasised the importance of enhancing the existing green areas and promoting biodiversity near the Schinkel area (11:38). This feedback was incorporated into the project plans, demonstrating how public participation can directly impact project outcomes and promote sustainability. As stated by I1, "Involving the public in the early stages of planning not only builds trust, but it also allows us to align our projects with their needs and expectations. Their input, especially regarding green spaces, has been crucial in maintaining the area's charm while also pushing for more sustainable urban development." Furthermore, the Verdi project acknowledges the importance of maintaining green areas on the premises, building facades, and roofs (9:19). This commitment to greening aligns with SDG 3, as urban green spaces are known to enhance mental health and promote physical activity. Additionally, greening initiatives can mitigate heat stress, contributing to SDG 13 (9:4). Drawing from Ravel's project, it was evident that community participation was vital in shaping the project's direction towards sustainability. Stakeholders' concern for green spaces was echoed in the Ravel project, with an emphasis on nurturing social and ecological connectivity. These sentiments align with SDG 15 and SDG 11. As I3 expressed, "We all want an environment that supports our health and well-being. Ensuring the area remains green and promotes biodiversity is a shared goal among the community." A key element observed across the Zuidas projects was the commitment to transparency and ongoing dialogue with stakeholders. The Zuidas Vision 2016 document, for example, was developed in collaboration with a wide range of stakeholders, incorporating their opinions and concerns (15:4). This practice of inclusion speaks to SDG 17, which emphasizes the importance of collaborative approaches to achieve sustainability. In addition, private entities are provided with templates and guides of how they can assess the sustainability of their buildings, such as using the Building Research Establishment Environmental Assessment Methodology (BREEAM). Reflecting on these projects, I2, stated, "We strive to create spaces that truly belong to the community. It is their insight and engagement that often point us towards innovative, sustainable solutions." Moreoever, there are also significant linkages to SDG 3. The green spaces being

preserved and developed within Zuidas are not just aesthetically pleasing but also contribute to the mental and physical well-being of residents. According I1, "The focus on green spaces has two benefits. Apart from enhancing the area's appeal, these spaces also provide residents with places to relax, exercise, and connect with nature, which is good for overall health. Especially for the employees in the area" Moreover, this commitment to environmental sustainability is integrated into the project's overall strategy, with project developers challenged to create housing and mobility concepts that discourage car ownership (11:35). This approach aligns with SDG 11 and also contributes to SDG 3, as reducing car usage can help to lower air pollution levels, promoting good health and well-being. The focus on education and lifelong learning, as reflected in SDG 4, is also apparent in Zuidas' participatory approach. The extensive consultation process outlined in the Zuidas Vision 2016 (15:4) demonstrates the commitment to inform and engage the public in the development of the area. The belief is that an informed and educated public is more likely to support sustainable practices. I2, said that "Educating the public about the benefits of sustainable practices is an essential part of our strategy. It will increase most likely the support." Finally, public participation can also contribute to SDG 8. The transformation of Zuidas into a mixed urban area where sports, work, and residential activities coexist (9:16) is likely to generate economic opportunities. As per I3, "This area's development will attract businesses and provide job opportunities, contributing to the local economy's growth. We are convinced that the collective input from the public has been important to this.

Overall, Zuidas' projects provide compelling examples of how public participation can be effectively linked to achieving public sustainability goals. By fostering an inclusive and transparent planning process, these projects effectively mobilize the community towards a shared vision of sustainability, contributing to the achievement of multiple SDGs. As noted by I4, "It feels like that our voice matters." Thus, public participation in the planning and development stages of these projects not only promotes sustainability but also fosters a sense of community and collective ownership, especially with private entities investing in the area. In turn, the community is most likely to grant their support. However, it has to be noted, that feedback submitted by the stakeholders are most likely not to hold in the first place, due to sustainable guidelines in place, that can not allow them in the first place, e.g. allocate streets further away from housing. And even when a legit feedback has been proposed, the "Stuurscommissie Zuid" has the final word, meaning, that there is an extra barrier for feedback submitted by various stakeholders, citizens and businesses alike (6:11).

5.4.2 Strategies for Enhancing Public Participation in Urban Development
The strategies to enhance public participation in Zuidas' urban development can be multiple, varying in scope and execution, but all aiming to achieve public sustainability goals. A closer look at the projects in Verdi and Ravel, alongside insights from various interviewees, provides a clearer picture of these strategies.

Transparency and clarity of information are essential to foster public participation. Verdi Deelplan 2 notes, "Transparantie in de communicatie en duidelijkheid over de doelen kan de participatie van het publiek verhogen" (13:24). This statement underlines the need for clear communication and goal setting to boost public involvement. I4, states "If we're more informed, we're more likely to contribute. It's about understanding the impact of our involvement." Likewise, adopting a participatory design approach can foster greater public engagement. The Zuidas Duurzaamheidsverslag highlights, "De betrokkenheid van de gemeenschap bij het ontwerpproces kan de acceptatie van duurzaamheidsinitiatieven vergroten" (10:29). The assertion suggests that involving the community in the design process can enhance acceptance of sustainability initiatives. I2 agrees, "When people are part of the creation process, they feel a sense of ownership. This ultimately leads to more sustainable outcomes." It's also crucial to have partnerships with multiple stakeholders for more holistic and

sustainable development. As the Verdi Haalbaarheidsstudie points out, "Samenwerking tussen verschillende stakeholders kan leiden tot meer duurzame en inclusieve oplossingen" (08:20). This principle is backed by I3, "Collaboration brings different perspectives to the table. It's about merging ideas to create something that's beneficial for all." There's also a clear need for continuous dialogue and feedback mechanisms. Ravel Ontwikkelplan underlines, "Een voortdurende dialoog en feedbackmechanismen kunnen de deelname van het publiek bevorderen en de duurzaamheidsdoelstellingen verfijnen" (11:16). This point is also mentioned by I2, "Open dialogue keeps us connected with the community. Their feedback allows us to adjust our goals and align them better with public needs." Building on these strategies, the role of education in encouraging public participation cannot be overstated. As the Verdi Participatie Deelplan 2 document states, "Educatieve programma's kunnen het bewustzijn van duurzaamheid vergroten en de participatie van de gemeenschap bevorderen" (17:28). This implies that educational programs can heighten awareness of sustainability and promote community participation. I4, a resident, shares this sentiment, expressing, "Educating us about the potential impact of the projects could really influence our willingness to participate." Moreover, embracing digital tools for participation can prove effective, as emphasized in the Zuidas Visie 2016, "Digitale participatietools kunnen de betrokkenheid van het publiek bij stedelijke ontwikkelingsprojecten vergroten" (16:22). Such digital platforms can open up new ways for public involvement in urban development projects. I2, supports this, stating, "Digital platforms not only make participation more accessible but also allow us to reach a wider audience." Tailored engagement strategies, taking into account the diverse needs of the community, can also enhance participation. The Ravel Nora van Uitgangspunten document highlights this, "Aangepaste engagementstrategieën, rekening houdend met de diverse behoeften van de gemeenschap, kunnen de participatie verbeteren" (09:18). This strategy is reinforced by I3, a Hello Zuidas Stakeholder, who states, "Customized engagement strategies are important because not everyone is the same. What works for one group may not work for another." Lastly, integrating sustainable practices in public participation processes is another critical strategy. As per the Groenplan Verdi, "Het integreren van duurzame praktijken in openbare participatieprocessen kan de duurzaamheidsdoelstellingen van de stad bevorderen" (12:25). This statement implies that integrating sustainable practices into public participation processes can promote the city's sustainability goals. I1, "Practicing what we preach in our participation processes helps reinforce our sustainability goals.

Collectively, these strategies indicate a multifaceted approach towards enhancing public participation in Zuidas' urban development. By embracing transparency, participatory design, multi-stakeholder collaboration, and continuous dialogue, Zuidas can better align its sustainability goals with public expectations increasing the acceptance for implementations in the Zuidas' project.

6 Conclusion

6.1 Summarisation

The study has shown, that in the context of public-led urban development where strong market interest is a priority in the Zuidas, public participation emerges as an important factor in achieving public sustainability goals. The Zuidas high-end business district has shown a multi-levelled approach in integrating public participation, which is characterized by transparency, early involvement, continuous dialogue, and the use of digital platforms. The strong involvement has led to an alignment between the Zuidas' project and community interests, supporting a higher acceptance for the transformation in the area. Transparency has been a key in establishing trust, allowing stakeholders to access information easily, and therefore creating an environment for active contribution. The design of the participation processes has been fundamental in aligning the community's needs with the framework of the transitions in the Zuidas, as the inclusion of community members in collaborating has given a sense of ownership. The use of knowledge from multiple stakeholders has provided the authorities with new ideas to improve the initial designs. The continuous dialogue has ensured that adjustments were made to align the outcome better with public expectations. The active deployment of various participation processes, such as digital platforms has given a voice to different stakeholders. Furthermore, the integration of sustainable practices in public participation has reinforced the city's commitment to sustainability goals, leading to awareness among communities. This synergy between public participation and sustainability, Zuidas has positioned itself as a benchmark for how public involvement can effectively guide urban development in high-end business districts and actively contribute to project designs. Thus, public participation in the Zuidas has had a profound impact on achieving public sustainability goals. It has not only enriched the project's alignment with the community's interests and needs but has also driven the urban development to reach broader societal aims. In conclusion, public participation can positively contribute to design implementations in high-end business districts and increase social acceptance.

6.2 Practical Recommendations

the Zuidas' experience, transparency has been a key factor in building trust and fostering community engagement. Thus, a recommendation would be to adopt transparent practices consistently, allowing stakeholders to access information easily and in a timely manner. Participatory design, highlighted as a significant factor in the Zuidas project, can be further emphasized by inviting community members to collaborate in projects from an early stage. Regular workshops, forums, and online platforms that allow for open dialogue and creative collaboration can foster a sense of ownership and lead to more sustainable outcomes. Thus, it is vital to encourage multiple stakeholders to take place in the solution process. Continuous dialogue and feedback mechanisms should not be a one-time effort but an ongoing process throughout the entire development cycle. Regular town hall meetings, surveys, and online forums could be used more frequently to collect public input and make necessary adjustments. This would ensure that the project remains aligned with public needs and expectations. Moreover, more proactive educational programs could be implemented, including workshops, school programs, and community outreach initiatives to heighten awareness around sustainability. Furthermore, embracing digital tools can further enhance public engagement, making participation more accessible to a wider audience. Investing in user-friendly digital platforms that allow for easy interaction, feedback submission, and access to information could be a valuable addition to traditional methods of public involvement. Tailored engagement strategies are vital to consider the diverse needs of the community. Conducting a thorough analysis to understand the specific needs of different groups within the community and then crafting targeted engagement strategies can create more meaningful participation. Efforts to engage with non-residents (e.g. employees) should be a priority, ensuring that

their voices are heard and their needs are addressed in terms of transport accessibility. Lastly, the integration of sustainable practices in public participation processes must not be overlooked. Demonstrating commitment to sustainability goals in every aspect of the project, including public participation, reinforces the project's objectives and promotes broader community acceptance. For other high-end business districts looking to improve public participation, these recommendations offer a comprehensive framework. By focusing on transparency, participatory design, continuous dialogue, education, digital engagement, tailored strategies, and sustainable practices, any urban development project can foster greater public involvement. The lessons learned from the Zuidas can be applied to similar contexts, ensuring that public participation is not merely a procedural requirement but a meaningful collaboration that leads to well-rounded and sustainable urban development.

7 Discussion

This study contributes to the scientific knowledge about the influence of public participation in high-end business districts with special focus on sustainable urban development. This study adds to the existing literature offering specific insight into what other areas with similar features could learn from the examples mentioned by analysing the Verdi and Ravel neighbourhoods in the Zuidas. More importantly, how high-end business districts can utilise public participation processes to their advantage to include various stakeholders in their design phases and gain local knowledge that can lead to greater innovative sustainable outcomes due to extensive feedback mechanisms.

7.1 Recommendation for Future Studies

The cases have helped to answer the research questions sufficiently as the Verdi and Ravel neighbourhoods shed enough light into the public participation integrated in the Zuidas area and how it led to an increased level of achieving a higher degree of public sustainability goals. Yet, certain limitations must be acknowledged, which may provide useful for future studies to have them examined.

Firstly, the findings draw from specific documents and stakeholder perspectives related to the Zuidas project, potentially limiting a more generalisation of the conclusion to other contexts. While the insights gained within this study provide a detailed understanding of the situation in Zuidas, similar high-end business districts with varying cultural, political, or economic conditions might not experience the same dynamics. Secondly, this study may lack a comprehensive view of people that are not directly located within the district. This could include a more detailed study of the opinions of residents and others that do not live in the Zuidas area directly. While tailored participation strategies were discussed, a deeper exploration of these groups and their needs could provide a better understanding of how to engage with diverse populations more effectively and integrate their preferences in the planning. Especially analysing the impact those preferences would have on sustainable outcomes and the final project designs. Thirdly, only SDGs 3, 4, 8, 11, 13, 15, and 17 were found in the documents that were analysed. This can indicate, that the absence of missing SDGs can limit the full potential public participation would have in their presence. Further research on the missing SDGs and how they are reflected in the urban planning processes can result in even more advantageous innovation measures for business districts. Fourthly, since this study is only based on two neighbourhoods, further involvement of empirical study on this subject can provide more data and more perspectives about the influence of public participation. Fifthly, the study has revealed, that there is a connection between the sustainability guidelines set by the municipality with the plots of land that are privately owned. It can be interesting to find out how the overall decision making intertwines with the business approach of the developers. Finally, the integration of sustainable practices within public participation processes is a complex subject and might require a more detailed examination as soon as the re-development projects have

been finalised. The study touched on this integration, but the Verdi and Ravel neighbourhoods are in active transition.

These limitations can open doors for future research. They invite further investigation into how the lessons from Zuidas can be applied to other high-end business districts.

7.2 Personal Reflection

In my opinion, this study has been very successful. The theoretical framework has provided sufficient guidance to answer the research questions and shed more light in the dynamic pf public participation in Zuidas as high-end business district. First, the objectives (sub-questions) were clear and focused on understanding how public participation in the Zuidas influences the achievement of public sustainability goals. Seconds, the methods were supported by a comprehensive review of relevant documents which were thoroughly analysed using frameworks of Arnstein and Healey, and stakeholder input. There were some smooth strides and challenges. On the positive side, the methodology provided a comprehensive review on the subject. However, challenges arose when attempting to balance out diverse stakeholder perspectives, when assigning various codes. The beginning took a long time to understand the boundaries of each code and completing a full set of codes and assigning them to code groups. There were moments where data seemed overwhelming, leading to issues of efficiency. In hindsight, it might have been more beneficial to spent more time on the completion of codes, rather than diving straight into the documents. Furthermore, a study may would have been beneficial that could have been contributed on the official Zuidas library or distributed with members of Hello Zuidas. Moreover, an early collaboration with experts in the Zuidas could have streamlined the direction of the study and potentially made the code selection easier.

I do have to say, that the outcomes of the study seem robust and well-researched, especially given the extensive document review of the Verdi and Ravel neighbourhood. However, findings, especially those around non-residential stakeholders, seem heavily reliant on secondary data or are barely existing. In conclusion, I am truly happy with how far I have gotten, but I am also aware about the potential improvements that can be made in the future as stated in chapter 7.1.

7.3 Acknowledgments

This study would not have been possible without the valuable input of the interviewees, that have given a more detailed overview about the dynamic interplay of public participation in the Zuidas project area. A thank you goes to the interviewees, who took the time to participate and provide information with their unique perspectives. These contributions have not only informed the findings, but have also brought life to the study and for that, they have my sincere gratitude.

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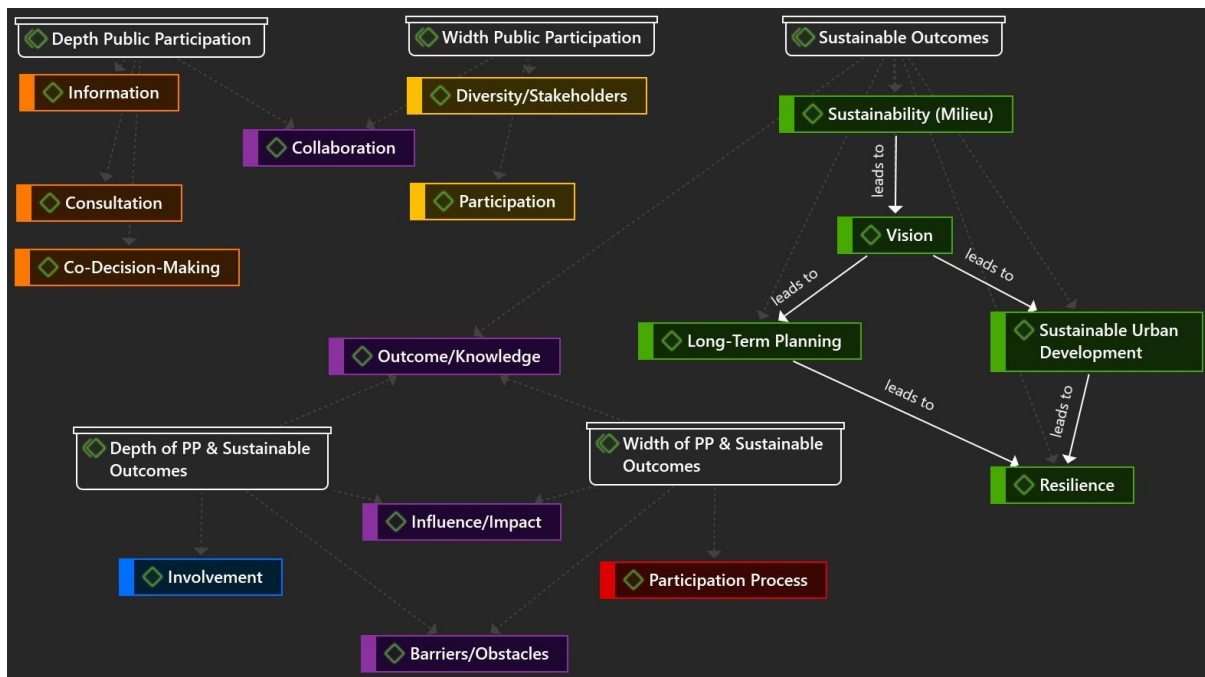
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Attachment 1 – Code Tree (Code groups and codes)

A code tree, as seen in Attachment 1, simplifies the organization and grouping of codes in this study. This depiction facilitates a better understanding of the complex network of themes and sub-themes arising from the literature review and interviews. The code tree features five primary code groups, each assigned a specific color for easy differentiation. These code groups are 'Depth Public Participation', 'Width Public Participation', 'Sustainable Outcomes', 'Depth of PP & Sustainable Outcomes', and 'Width of PP & Sustainable Outcomes'. Each color stands for a different group: orange represents 'Depth Public Participation', yellow signifies 'Width Public Participation', green corresponds to 'Sustainable Outcomes', blue symbolizes 'Depth of PP & Sustainable Outcomes', and red denotes 'Width of PP & Sustainable Outcomes'. In each color-coded group, the individual codes are specified. For instance, in the orange 'Depth Public Participation' group, the codes 'Co-Decision-Making', 'Collaboration', 'Consultation', and 'Information' are included. The 'Width Public Participation' group in yellow holds codes like 'Collaboration', 'Diversity/Stakeholders', and 'Participation'. The green 'Sustainable Outcomes' group encapsulates codes like 'Long-Term Planning', 'Outcome', 'Resilience', 'Sustainability', and 'Sustainable Urban Development'. However, some codes are relevant across multiple groups. These are designated with a purple color, indicating their cross-cutting nature. For instance, the code 'Influence/Impact' appears in both 'Depth of PP & Sustainable Outcomes' and 'Width of PP & Sustainable Outcomes' groups, highlighting the interconnectedness of these areas.