

Harmonic Urbanism

Assessing and designing soundscapes: a case study of Tehran

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A Thesis Submitted for the Degree of Doctor of Philosophy in Urban Design

Cardiff University

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March 2024

Acknowledgements

I would like to extend my deepest gratitude to those who have supported me throughout my PhD journey.

I want to give my deepest appreciation to my supervisor, Dr Patricia Aelbrecht to give me this opportunity to work on this project and all the personal and academic support during my academic journey since bachelor.

My second supervisor, Dr Jonathan Prior for enlightening me on the intricacies of soundscapes and sounds, enhancing my research significantly.

My partner, who stood by me unwaveringly to the very end.

And to my family, whose patience and understanding allowed me to navigate the stresses of this journey.

Abstract

This dissertation delves into the concept of 'soundscape' as a vital component of public spaces within cities, underscoring its significant yet often neglected role in urban design and planning. By focusing on the sonic dimensions of urban design, this research aims to articulate how soundscapes contribute to placemaking, thus challenging the predominant visual-centric approach in urban design. Drawing on the foundational theories proposed by Murray Schafer and inspired by Richard Sennett's critique of sensory deprivation in modern urban planning, this study posits that the auditory experience of cities is fundamental to understanding and improving the quality of urban life.

The research employs Tehran, a city characterized by its unique blend of traditional and modern soundscapes, as a case study to examine the sonic environment of non-Western urban settings. This choice allows for a detailed exploration of how urban sounds influence placemaking processes and the experiences and behaviours of residents, thereby enriching the global discourse on urban soundscapes. Through a multidisciplinary methodology that includes in-depth interviews, sound recordings, and observational studies, the thesis seeks to offer a comprehensive understanding of the relationship between sound, space, and urban experience.

This study highlights the importance of integrating auditory experiences in urban design to foster social connections, enhance community well-being, and create more inclusive and resonant public spaces. By advocating for a holistic sensory engagement with urban environments, it challenges current practices and provides empirical evidence supporting the need for sound-sensitive urban development. Furthermore, this research contributes to Iranian academic knowledge and suggests a pathway for more informed urban design practices in non-Western contexts, potentially guiding urban planning policies globally.

In essence, this dissertation enriches the field of urban design and sound studies by proposing a framework for incorporating sound into the planning process, thereby ensuring urban environments cater to all sensory experiences. It underscores the transformative potential of soundscapes in creating vibrant, inclusive, and emotionally

resonant urban spaces, offering new insights into the role of sound in shaping the experiential quality of public spaces and the well-being of urban inhabitants.

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1. Introduction

1.1 Introduction

In this thesis, I explore the concept of 'soundscape' to articulate the sonic dimensions of public spaces within cities, highlighting their important contributions to placemaking an aspect frequently overlooked within the expansive field of planning and urban design.

In the vibrant orchestra of urban life, each city crafts its own unique symphony. This thesis listens intently to these urban symphonies, with a special focus on 'soundscapes'—a concept popularised by Murry Schafer in 1977. A soundscape refers to any auditory study area. It could be a musical piece, a radio broadcast, or an environmental sound that qualifies as a soundscape (Schafer, 1977, P7).

In this thesis the notion of soundscape is used to refer to the sonic environment that always surrounds us. This auditory milieu, rich in its variety of sounds, has transitioned from the natural acoustic elements of the earth's earliest days to an increasingly complex soundscape of contemporary urban life.

The book "Flesh and Stone" by Richard Sennett (1994) profoundly inspired my initial understanding of how the body interacts with urban spaces—how the inhabitants, the most vital components of cities, perceive their environment and what urban designers, whether intentionally or gradually, can offer them.

Sennett perceives the city as a construct of human endeavours, fundamentally grounded in the sensory experiences of those who dwell within it. He articulates:

"I was prompted to write this history [history of city construction in west] out of bafflement with a contemporary problem: the sensory deprivation which seems to curse most modern building; the dullness, the monotony, and the tactile sterility which afflicts the urban environment." (Sennett, 1994, p. 15)

In an era that seemingly values sensory awareness and physical autonomy, the practice of contemporary urban design and its evaluation often led to sensory deprivation, characterized by a lack of dynamism and interaction.

This paradox forms the base of my thesis, encapsulating a central theme of my research. Sennett champions a holistic sensory engagement with cities, arguing that

cities are meant to be encountered with every sense, and it's the emphasis on sight above all else that leads to a sensory unproductiveness, which, in turn, is at the heart of a widespread city discomfort (Sennett, 1994).

This perspective aligns with other scholars (Macnaghten & Urry, 1998; Bull, 2000; Classen et al., 1995; Pallasmaa, 2005) who lament the sensory reductionism prevalent in urban studies and policy development. Thus, my research aims to highlight the importance of the auditory experience of cities—the soundscape—rather than the landscape, which unfortunately is predominantly understood and evaluated through visual criteria. The significance of the soundscape within urban environments has been acknowledged (Schafer, 1977; Truax, 2001; Bijsterveld, 2008; Degen & Rose, 2012). Drawing inspiration from Sennett's work, my study argues that soundscapes exceed mere background noise to become a pivotal element of the city's social fabric. They play a critical role in shaping how individuals perceive, navigate, and interact within urban settings. This perspective highlights the auditory dimension of urban spaces as fundamental, not only to our understanding of these environments but also to the quality of urban life itself.

According to Sennett (1990), the design and layout of urban areas can significantly impact social interactions, with sound playing a crucial role in this interplay. He argues that thoughtfully designed soundscapes can promote social connections and enrich urban life by fostering a sense of place and belonging. This exploration into the auditory dimension presents an opportunity to reimagine urban environments in ways that nurture community and interaction, challenging the prevailing visual-centric approach to urban design and evaluation.

The reason to centre this investigation around the sense of hearing stems from several unique characteristics of sound. Unlike static visual elements, sound is dynamic, unfixed, and possesses the capacity to traverse spaces (Blessner & Salter, 2007). Furthermore, sound holds a profound ability to evoke emotions, like the impact of music. This dynamic and emotive potential of sound makes it an essential component of spatial experience, suggesting that soundscapes can significantly influence the emotional and psychological well-being of urban inhabitants (Haverkamp, 2009).

Therefore, this thesis seeks to enrich the evaluation of public spaces from an auditory perspective, offering a departure from traditional, visually centred space assessments.

This emphasis on auditory elements not only underscores the inherent potential and significance of this sense but also addresses a gap within architectural, planning, and urban design research where auditory aspects have been relatively underexplored compared to their visual counterparts.

This thesis employs the city of Tehran as a case study to examine urban soundscapes within a non-Western context, diverging from the prevalent focus on Western cities. Tehran's distinct acoustic features provide an invaluable opportunity to explore the significant influence of urban sounds on placemaking processes, as well as the experiences and behaviours of its residents.

Research on Tehran's urban soundscapes enrich our global understanding of these environments, traditionally overshadowed by a focus on Western cities. This shift underscores the necessity for a wider range of case studies to broaden the perspective on urban acoustic environments (Rehan, 2016).

Initially in this introduction chapter, I will present a brief overview of the background and rationale underpinning this thesis, setting the stage for a deeper investigation in the upcoming chapters. Following this, I will articulate the objectives and aims of the study, delineating the specific questions that this research intends to answer. Subsequently, I will discuss the significance of this thesis within the broader theoretical landscape, highlighting its potential to inform and transform current understandings of urban space and its experiences. Lastly, I will provide a detailed outline of the thesis, to preview each chapter. This structured approach aims not only to shed light on Tehran's unique sonic environment but also to underscore the critical role of sound in shaping the experiential quality of urban spaces, thereby contributing to a more holistic approach to urban planning and design.

1.2 Research Background and Rationale

This thesis focuses on sensorial dimensions of urban spaces and their design, a field that, despite its growing recognition as crucial within the built environment disciplines, remains underexplored (CABE 2009, Carmona et al. 2003, Lucas and Romice 2008, Zardini 2005). It posits that sensory perceptions significantly influence our interactions with the urban landscape, including our connections with others and the physical spaces we inhabit. These perceptions are argued to be as impactful as the physical,

spatial, and social components of urban design. Degen and Rose (2012, p. 3) highlight the pivotal role sensory experiences play in moulding the urban built environment.

There is currently a substantial gap in understanding and analysing urban human experiences from an urban design perspective. Traditionally, emphasis has been placed predominantly on visual perception, facilitated by the human visual system, even though scholars recognize the inclusion of auditory, tactile, olfactory, and gustatory receptors (Gibson, 1966). Consequently, the aesthetic evaluation of urban spaces has primarily focused on visual and kinaesthetic experiences (Carlson and Berleant, 2004). Most studies and practices (Buchanan, 1988; Nasar, 1998; Sitte, 1945; Smith, 1980) have concentrated on enhancing urban visual aesthetics and the dynamics of movement and interaction within cities.

The vocabulary used in defining qualities of a responsive environment in urban design literature primarily includes accessibility, movement, permeability, inclusivity and variety which are aiming to enhance the movement and use of places in cities. It also focusses upon producing a good quality place based on visual modalities that are usually described with visual appropriateness, legibility, richness, and robustness of places in cities (Bentley et al, 1985). These principles are all evaluated and implemented by conducting codes and strategies that are mostly related to the visual senses of human perception. For example, urban designers intending to raise the degree of choice offered by a place while they improve the 'legibility', which means they design a readable layout for users. As part of this endeavour, designers focus on identifying and defining physical features that delineate, enclose, or support pathways and intersections. Moreover, legibility involves considerations of scale, including the volume, height, and mass of urban buildings, which collectively contribute to the readability and navigability of urban spaces (Lynch, 1960).

The comparative neglect of auditory experiences in urban design is complex. Historically, visual elements have dominated urban planning, influenced by Enlightenment ideals valuing sight as the supreme sense for knowledge acquisition, as discussed by Pallasmaa (1996). This visual focus has shaped disciplines like architecture and urban design, often overlooking auditory aspects. Challenges in capturing and analysing soundscapes, due to the complex methodologies required beyond traditional visual documentation, further contribute to this oversight.

Additionally, the limited vocabulary for describing sound reflects cultural and biological limitations, diminishing the appreciation for auditory experiences. Lastly, the field of aural architecture remains marginalised in academia and professional training, leading to a gap in education on acoustics and sensory sociology, echoing Blesser and Salter's observations (2007).

Moreover, the historical development of cities has often prioritized functional and economic considerations, such as traffic flow and land use, over experiential aspects, including the auditory experience (Jacobs, 1961; Burkeman, 2015). This has resulted in urban environments where noise is seen primarily as pollution or a nuisance, rather than an element of the city's identity or a resource for enhancing urban life (Thompson, 2002). The negative connotations associated with urban noise have further contributed to the marginalization of sound in discussions about urban sensory experiences.

This phenomenon explains why the built environment is often analysed, improved, and designed mostly through the lens of visual perception by its designers or inhabitants often treating visual experience as the singular mode of perception.

1.2.1 Sensorial Urban Design

This thesis is primarily based on research and practice focused on sensorial urban design and perception of city users. Sensorial urban design encompasses all the senses – touch, smell, taste, sight, and sound – to create a more holistic and engaging urban experience. While the focus on sound and hearing is crucial, understanding the contribution of each sense can provide a more comprehensive approach to urban design.

Sight is often the primary sense emphasized in urban design, guiding navigation and the perception of space. However, an overemphasis on visual aesthetics can result in a sensorial imbalance. As critiqued by the architectural theorist Juhani Pallasmaa (1996), while crucial, the visual aspect should be harmoniously integrated with other sensory experiences to create a more rounded urban environment. Hearing plays a pivotal role in the urban experience, with the sounds of the city—from the bustling streets to the quiet of public parks—shaping its rhythm and atmosphere. The auditory

experience can significantly influence our sense of belonging and our emotional responses to different urban spaces.

The sense of touch is essential in experiencing the texture and materiality of the urban environment. The haptic qualities of surfaces, such as smooth pavements and rough brick walls, enhance our spatial memory and orientation, as Holl (2007) notes. Tactile experiences, from walking on varied ground materials to feeling the warmth of sunlit benches, enrich the urban experience.

Smell holds an essential connection to memory and emotion, with urban scents—from the aroma of street food to the freshness of parks—playing a significant role in defining a place's character and identity, as Henshaw (2013) highlights. Thoughtful design that incorporates olfactory experiences can forge emotionally resonant and memorable urban spaces.

Although less directly involved in urban design, taste interacts with the urban environment in contexts like street food markets or community gardens. These spaces not only provide sensory experiences but also foster social interactions and cultural exchange (Bell and Valentine, 1997).

Pallasmaa's (1996) research stresses the necessity of embracing a holistic approach in design that incorporates all senses, cautioning against the overemphasis on visual elements which may lead to a sensory imbalance and detract from the urban experience's full richness. This perspective is in harmony with contemporary studies advocating for a multisensory strategy in urban planning, which includes the integration of soundscapes to enrich urban environments (Öhrström et al., 2006; Spence, 2020; Thibaud, 2011; Van Renterghem and Botteldooren, 2016; Xiao, 2018). The recent pivot towards acknowledging and valuing non-visual senses represents a pivotal evolution in urban design research. Traditionally, research in this field has predominantly focused on visual stimuli as the key influencer of urban experience quality, frequently neglecting the contributions of other senses. In "The Eyes of the Skin," Juhani Pallasmaa highlights the historical elevation of sight as the most esteemed sense, often considered a unique endowment. This historical bias elucidates the critical need for a balanced, multisensory approach in current urban design practices, aiming to create more comprehensive and accessible urban spaces.

In this thesis, I focus on sound and sense of hearing, which represent pivotal yet frequently marginalized facets of urban sensory experience. As Schafer (1977) articulated in his influential work, "The Tuning of the World," sound serves as a crucial complement to visual stimuli, influencing human perception and engagement with urban spaces. Sound is not a mere environmental by-product; it actively constructs our understanding of space (Blessner and Salter, 2009). It informs the rhythm of urban life (Bull, 2007), elicits emotional responses, and shapes our spatial memories (Sterne, 2003). Urban soundscapes, ranging from the tranquil murmur of people to the cacophonous symphony of rush-hour traffic, and the ethereal echo of morning calls to prayer, are as telling as they are varied (Thibaud, 2011). These auditory elements encapsulate the vibrancy, the challenges, and the lived experiences within urban spaces (Atkinson, 2007).

This thesis aims to amplify this conversation, suggesting that attuned listening can reveal the layered narratives of urban life and enhance the design of more inclusive, resonant urban spaces (Carmona et al., 2010).

1.2.2 Case study of Tehran: rationale underlying its selection

The latter segment of the research title, "Case Study of Tehran," is elaborated upon further in subsequent sections. Though, it is essential to articulate why Tehran, as the vibrant epicentre of Iran and a metropolis housing over 8 million residents, constitutes an exemplary context for this inquiry. Tehran's versatile soundscape, ranging from the sacred echoes of calls to prayer to the continuous buzz of urban traffic and growing urbanisation, provides a dynamic and complex auditory environment for examination. Choosing Tehran for this case study is grounded in several academic works. Firstly, the city's rich historical and cultural backdrop offers a diverse array of soundscapes that reflect the intersection of tradition and modernity, providing a comprehensive spectrum of auditory experiences. Secondly, Tehran's rapid urbanization and population growth present challenges and opportunities to explore how soundscapes evolve in response to urban development and how these changes affect communal and individual city's experience and well-being. Furthermore,

The exploration of sensorial urban studies has often been centred around Western case studies (Bull, M., 2007; Degen, M. & Rose, G., 2012; Howes, D., & Classen, C.,

2014; Kang, J., 2006; McLean, K., 2017; Pallasmaa, J., 2005; Schafer, M., 1977; Thibaud, J.-P., 2011). Understanding Tehran's soundscape is critically important for several interrelated reasons, particularly when considering the broader context of soundscape studies within Western academia and the relative scarcity of research focused on Tehran or, more broadly, the Middle East. Here's why such understanding matters, supported by the contrast between the availability of soundscape studies in Western contexts and the limited research on Tehran.

For instance, Schafer's (1977) foundational work in this field in "The Soundscape: Our Sonic Environment and the Tuning of the World" largely set the tone for soundscape studies, but its primary focus was on Western urban environments. Similarly, studies like Bull's (2007) "Sound Moves: iPod Culture and Urban Experience" delved into the modern urban soundscape of the Global North, examining how personal sound technologies like iPods shape urban experience.

Studies, such as Truax's (1996) work on acoustic ecology and soundscape composition, have broadened the academic comprehension of soundscapes within the fields of urban planning, environmental science, and musicology. However, the focus of such studies has predominantly been on Western cities, resulting in a noticeable gap in the understanding of soundscapes within non-Western contexts, such as Tehran. This disparity highlights the need for specific studies on Tehran's soundscape to enrich the global discourse on urban sound environments, considering its unique cultural, historical, and environmental conditions. Such studies, while profound, raise an important question: Is the knowledge we gain from the Global North entirely transferable to the distinct cultural and urban contexts of the Global South?

Tehran's soundscape is continually evolving. Capturing the essence of Tehran's soundscape is essential for understanding the city's unique character and identity. Soundscapes act as an auditory mirror, reflecting the city's life through the rhythms of daily activities, cultural practices, and interactions with the natural environment. In Tehran, exploring its soundscapes reveals a complex concept of sounds from traditional bazaars, bustling traffic, the acoustic resonance of historical sites, and the vibrant public gatherings that animate the city's pulse. Academic exploration into Tehran's soundscape peels back these layers, revealing how the city's distinctive sonic identity is both constructed and perceived by its residents. Such insights are

valuable for appreciating Tehran's cultural and historical richness, offering a more nuanced understanding of its urban texture and the influence of planning and urban design in assessing and shaping this soundscape.

Furthermore, the importance of recognizing and preserving Tehran's unique soundscape parallels the protection of its tangible cultural landmarks. This intangible heritage, once rigorously documented and analysed, plays a crucial role in both maintaining Tehran's auditory identity and guiding urban development that respects and enriches its acoustic backdrop. Traditional research methods, which often lean towards quantitative analysis, may fail to capture the rich, nuanced character of urban sounds that are integral to the city's liveliness and the well-being of its citizens. Therefore, adopting a qualitative, holistic approach in studying Tehran's soundscape is imperative for urban planning and design efforts, ensuring that future developments resonate with the city's sonic identity and improve life quality for its more than 8 million residents. A focus on understanding and integrating the emotive and communal aspects of Tehran's soundscape can foster urban spaces that better accommodate human behaviour, health, and overall well-being, offering a comprehensive view of the city's auditory landscape beyond simple noise measurements.

Ultimately, emphasizing soundscape research in Tehran not only advances the global conversation on urban soundscapes but also significantly enriches urban planning, environmental science, and cultural preservation disciplines. It highlights the necessity of adopting an inclusive approach that values the distinct soundscapes of cities outside the western context, deepening our comprehension of urban environments around the world.

1.2.3 Soundscapes and Publicness

In this thesis, I have chosen to focus on the examination of public spaces, recognizing them as a crucial component of urban life. The importance of public spaces has only grown in the context of urbanisation, with aspects such as social interaction becoming increasingly vital.

Although people, on average, only spend about 5% of their time outdoors (Spence 2020), these public areas are crucial for fostering social interaction, community bonding, and societal integration. This underscores the significance of analysing urban

settings through a multi-sensory lens, considering the profound impact these spaces have on daily social dynamics.

This thesis emphasizes the importance of such aural modalities within this public space. It does not just consider them as background elements but seeks to prioritize them within urban design, thereby enriching the overall environmental experience for city dwellers. By developing strategies and methodologies to incorporate auditory experiences, this research aims to present a more holistic approach to urban design — one that truly resonates with all our senses.

For achieving the above research aims, this thesis will create a sample of case studies in city of Tehran across a range of public spaces. This selection consists of different types of public space, produced in different times, with different planning and design ideologies, and used by diverse social groups. These public spaces, situated in District 6th of Tehran, encompass the City Theatre Square, Keshavarz Boulevard, and Yousef Abad Stairs. Each offers distinct characteristics in terms of function, and spatial attributes. This allows me to explore the sonic atmosphere of different type of public spaces in the city of Tehran and to assess the soundscape and publicness of these selected case studies.

Barry Blesser and Linda-Ruth Salter study (2007) demonstrated how soundscapes impact the balance between privacy and publicness in urban environments, noting how certain sounds can make spaces feel more open and connected or, conversely, more secluded, and private. The study "Acoustic Absorbers and Diffusers: Theory, Design, and Application," by Trevor J. Cox and Peter D'Antonio also explored the relationship between sound and the publicness of places by controlling reverberation, echo, and overall sound clarity. They concluded that acoustic treatments make public areas more functional and enjoyable, thereby enhancing the public's interaction with these environments. Their study further attested how the right acoustic treatments can transform public spaces, making them more suitable for their intended use, whether for speech intelligibility in lecture halls, performance quality in concert venues, or comfort in communal gathering spaces.

1.3 Research Objectives and Questions

This thesis is dedicated to uncovering the complex interplay between the soundscape of Tehran and its residents' perceptions, with a particular focus on how sound influences the design quality and experience of public spaces. It aims to conduct an in-depth analysis of the sensory attributes of these spaces, emphasizing the pivotal role of auditory experiences in shaping them. This approach extends beyond the conventional visual-centric analysis of spatial perception to include the often-neglected auditory dimension. By doing so, it seeks to understand sound's multifaceted impact on urban dwellers, exploring its cultural, cognitive, and emotional resonances, and how can plan and design more inclusive sound experiences in public spaces.

A secondary objective of this thesis is to delve into Tehran's unique sensorial landscape, which has been relatively underexplored compared to Western environments. This thesis posits that knowledge derived predominantly from studies in the Global North may not fully translate to the distinct cultural context of the Global South, including Tehran. This aspect of sound studies and anthropology highlights the importance of cultural specificity in understanding urban soundscapes.

Central to this investigation is the analysis of the aural characteristics of various public spaces within Tehran. This exploration is structured around a set of focused research questions intended to dissect the sonic fabric of the city. These questions aim to provide insight into how Tehran's soundscapes shape public life and the day-to-day realities of its residents, workers, and visitors. The study explores:

Characterization of Sonic Qualities in Public Spaces
<ol style="list-style-type: none">1. What are the sonic qualities that characterize Tehran's urban public spaces?<ul style="list-style-type: none">• What types of sounds are most prevalent in these spaces?• How do these sounds vary between different public space or/and situation?Description of type of public space and soundscape of that place
Influence of Sound on Perception of Publicness

<p>2. In what ways does sound influence the perception of 'publicness' in Tehran's urban public spaces, shaping the experiences and interactions of its users?</p> <ul style="list-style-type: none"> • How do different sounds affect feelings of belonging or exclusion in urban public spaces? • Are there specific sounds that encourage or discourage public interactions?
<p>Interplay Between Soundscapes and Auditory Perceptions</p>
<p>3. How does the relationship between Tehran's unique soundscapes and the auditory experiences of its residents, workers, and visitors manifest, and what effects does this have on the utilization and perception of public spaces?</p> <ul style="list-style-type: none"> • How do residents, workers, and visitors describe their auditory experiences in urban public spaces? • What are the psychological and social impacts of these soundscapes on different groups of people?
<p>Urban Design and Sonic Attributes</p>
<p>4. From an urban design perspective, how can the sonic attributes of Tehran's public spaces be comprehensively analysed and thoughtfully enhanced to improve the quality of urban experience?</p> <ul style="list-style-type: none"> • How can urban planners balance the diverse sonic needs and preferences of the city's inhabitants?

Figure 1. Table of Research Questions

In the initial phase of this thesis, I embark on an exploration with a pivotal question that lays the groundwork for my research (see Figure 1). This question is aimed at uncovering and articulating the distinctive sonic characteristics that define the public spaces of Tehran. By identifying and analysing the varied auditory elements, I aim to establish a comprehensive understanding of Tehran's current soundscape, setting the stage for a deeper investigation.

Progressing from this foundational inquiry, this thesis delves into the ways in which these sonic qualities shape the notion of 'publicness' in Tehran's urban fabric. This exploration seeks to uncover how sound influences the experiences and interactions

of individuals within these spaces, playing a critical role in fostering a sense of inclusion or exclusion. By examining the interplay between sound and public space, I aim to reveal the subtle distinctions in which auditory experiences contribute to the social dynamics and sense of community within the urban environment.

Building on the exploration of sound's influence on urban experiences, the third question of my study probes into the intricate relationship between Tehran's unique soundscapes and the lived experiences of its inhabitants, workers, and visitors. This inquiry is focused on understanding how the sonic environment interacts with daily life, influencing social interactions and the overall quality of urban living. By investigating this relationship, I seek to uncover the broader implications of the soundscape on urban social dynamics.

This thesis concludes with a critical examination of the sonic attributes of Tehran's public spaces and their impact on the quality of urban life. This involves a thorough analysis of the city's auditory landscape, with an emphasis on identifying its strengths and pinpointing areas for improvement. From an urban design perspective, this question aims to offer a holistic understanding of Tehran's soundscape, highlighting its potential to enhance or detract from the urban experience.

Through this series of interconnected questions, my thesis endeavours to shed light on the complex relationship between sound, people, and space in Tehran. By offering new insights into the role of soundscapes in shaping urban public spaces and people's experiences, this research aims to contribute to the redefinition and design of vibrant, inclusive urban environments.

1.4 Research Scope and Methodology

The focus of this thesis is concentrated on two distinct neighbourhoods in Tehran each with different types of public spaces. Through these case studies, I aim to uncover the nuances of how sound shapes public spaces and vice versa. A multidisciplinary methodology has been devised for a comprehensive understanding of soundscapes in relation to public space, urban design, and user's experiences. This includes in-depth interviews with local inhabitants and visitors to these spaces; sound recordings in these areas at different times of the day and across seasons to capture a diverse range of sonic profiles and observations complemented with mapping note taking

down real-time reactions, interactions, and behaviours of individuals in response to the ambient sounds.

This is where my thesis seeks to make a pivotal contribution. Recognizing the inherent limitations of purely quantitative models, my research endeavours to incorporate qualitative methodologies. Through immersive fieldwork, ethnographic accounts, and in-depth interviews, I aim to unravel the intricate tapestry of Tehran's soundscape. By doing so, the intention is to shed light on the subtle interplay between sound, public space, and people's experiences, offering insights that can guide future planning and urban design practice and policymaking.

1.5 Significance of the Study and Contributions

Soundscapes play a significant role in the lived experience of urban residents. They can evoke emotions, trigger memories, and even influence health and well-being. By studying Tehran's soundscape and the role of people's experiences and the urban design in shaping it, this research aims to offer insights that could guide urban planning policies not just in Tehran, but also in other rapidly urbanising non-western cities globally.

The primary goal of this research is to elevate the significance of sonic considerations in urban design. This research aspires to make several contributions to the field of urban design and sound studies. Firstly, it offers a comprehensive framework for integrating sound into urban planning processes, thereby ensuring that cities not only cater to the visual but also the auditory experiences of their inhabitants. Secondly, by analysing the impact of soundscapes on community well-being and cultural identity, this study provides empirical evidence supporting the need for sound-sensitive urban development. Thirdly, the findings from this research are intended to bridge the gap between theoretical knowledge and practical implementation, offering guidelines that can be directly applied by urban planners and designers to create more harmonious urban environments. Lastly, by highlighting the often-overlooked role of sound in urban spaces, this work aims to inspire future research in the area, fostering a multidisciplinary approach to city planning that embraces the full spectrum of sensory experiences.

Furthermore, this study will also enrich Iranian academic knowledge by broadening the conversation around the intersection of soundscapes and urban design in Iranian cities. By integrating innovative methodological approaches, it also hopes to pave the way for more informed urban design practices in the region and other similar global south contexts.

1.6 Thesis outline

This thesis, comprising seven chapters, embarks on a comprehensive exploration into the realms of soundscapes, urban design, and people's experiences through the lens of Tehran's public spaces. Each chapter is meticulously crafted to build upon the foundational knowledge, thereby paving the way for novel insights and contributions to the field of urban design and city planning.

The journey begins with the first introduction chapter, where I set the stage for the investigation. Chapter 2 is dedicated to a thorough review of the literature, providing a robust foundation for the study. By delving into key theories, concepts, and previous studies in soundscapes, urban design, and user's experiences, I identify the gaps that this study seeks to address, thus positioning my research within the context of existing knowledge.

Following this, the third chapter unveils the theoretical framework which underpins the study. It elaborates on the conceptual models and theoretical perspectives that frame the investigation, detailing the dynamic relationship between soundscapes, urban design, and perception. This chapter establishes a conceptual framework that informs the research methodology and analysis, highlighting the study's interdisciplinary nature.

In chapter 4, the focus shifts to the methods used to collect data on Tehran's public spaces and their soundscapes. Here, I articulate the overall research design, including the methodological approach and the rationale behind the selection of research methods. This chapter describes the methodologies for data collection and analysis, providing a justification for the chosen methods and outlining how they will effectively address the research questions.

The next chapter is Chapter 5, the focus shifts to observational and fieldwork analysis. The analysis focuses on urban design elements, offering insights into the relationship between sound and space.

The sixth chapter aims to capture the subjective experiences and emotional responses of the users, enriching the study's empirical foundation. It presents an analysis of the interviews conducted as part of the study. It details the selection and approach for conducting interviews, focusing on understanding the direct perceptions and experiences of individuals with the soundscape in Tehran's public spaces.

In the final chapter of my thesis, chapter seven, which encompasses both discussion and conclusion, I integrate and synthesize the empirical findings from the observational fieldwork and interviews. This integration offers a comprehensive understanding of Tehran's soundscape, grounding the insights within the theoretical framework and literature review that underpin the study. Through this meticulous synthesis, the chapter elucidates the complex interplay between sound, urban design, and human perception, thereby offering a holistic view of how soundscapes influence urban environments and their inhabitants.

Moreover, this chapter provides a concise summary of the key insights and contributions of the research, proposing actionable recommendations for planners and urban designers to improve the soundscapes of Tehran and other urban environments. In doing so, it highlights the potential for soundscapes to foster more liveable, engaging, and inclusive urban spaces.

Acknowledging the limitations of the current study, this chapter also outlines avenues for future research, suggesting that further exploration in the field of urban soundscapes and design could continue to expand our understanding and application of sound in urban environments. By pointing towards the potential for continued exploration and innovation in the field, the chapter closes with a call for ongoing research to further refine and apply the insights gained from this study, aiming to enhance the sonic dimensions of urban living.

2.Literature Review

2.1 Introduction

This chapter is dedicated to exploring the foundational concepts, theories, and existing knowledge related to soundscapes, placemaking, and perception. Section 2.2 will provide a comprehensive overview of the most critical concepts and definitions central to these topics related to sensory urbanism and human perception. Following this, Section 2.3 will delve into the intricate relationship between sounds and the built environment, examining how auditory elements effect and are influenced by urban and architectural design. In the final section, I will outline the specific aspects of knowledge that will inform my analysis, highlighting the gaps in current research that my study aims to address. This exploration will not only frame the context of my research but also identify opportunities for contributing new insights to the field.

2.2 Sensory Dimension of Human Perception in Built environment

2.2.1 Introduction

Empirical studies in the field of sensory urbanism have explored various aspects of sensory experiences in cities. For example, work on the soundscapes of cities (Schafer, 1977) researched the acoustic dimensions of urban life, examining how sounds contribute to the character and quality of urban spaces.

Incorporating sensory urbanism into urban planning and design raises several practical considerations and knowledge. It calls for an interdisciplinary approach, involving collaboration between architects, urban planners, geographers, sociologists, and environmental psychologists, among others. This approach necessitates a shift from viewing cities merely as visual entities to understanding them as multisensory environments that actively engage with the full spectrum of human sensory experience.

Thus, the literature review of a thesis exploring sensory urbanism would not only engage with the theoretical underpinnings of the concept but would also delve into case studies and empirical research that illustrate its application in urban settings. This review should highlight the growing recognition of the importance of sensory

experiences in urban design and the implications of this paradigm shift for creating more liveable, meaningful, engaging, and inclusive urban environments.

2.2.2 Sensory perception

Solnit (2001) eloquently captures the essence of urban life, describing cities as the containers of creativity and observation. Here, people not only converge and disperse but also implant and nurture the seeds of their thoughts. Within the urban sprawl, our senses are perpetually engaged, keeping people both alert and intellectually vibrant. This vivid portrayal underscores the unique sensory and cognitive stimulation that cities provide. Baudelaire (1869) echoes this sentiment in "Paris Spleen," viewing cities as spaces filled with expressive and sensory wonders that often remain unnoticed by their dwellers. These reflections pave the way for examining how urban spaces, through their sensory qualities, shape human experiences—a core theme of this research, particularly focusing on Tehran's urban soundscapes and their influence on perceptions of places.

Drawing from the foundational understanding that humans are multi-sensory beings, as outlined by scholars such as Hatfield (2009) and Robinson (1964), this research delves into how the auditory experiences in urban settings contribute to our perception and interaction with public spaces. The sensory modalities, with a specific emphasis on hearing, serve as the lens through which the dynamics of Tehran's public spaces are explored. The historical narrative of sensory perception of places in cities, from ancient times through the Renaissance to modern metropolises, reveals a complex interplay between urban design, sensory experiences, and cultural contexts (Arendt, 1958; Sennett, 1978). This historical perspective underscores the evolution of urban spaces as sensory experiences, setting the stage for an investigation into Tehran's contemporary urban environment.

Traditionally, it is recognised that humans utilize at least five senses—touch, sight, hearing, smell, and taste—for environmental perception (Hatfield, 2009). Each sensory modality is equipped with specialized receptor cells designed to select specific types of stimuli, and corresponding areas in the brain dedicated to processing this information (Robinson, 1964). The comprehensive human experience of space, therefore, is a product of the integration of these sensory inputs (Rodaway, 1994).

'Sensory urbanism,' a significant and emerging area within urban studies, challenges the traditional paradigms of urban planning and design that have typically favoured functionalist and aesthetic priorities. As outlined by Thibaud in 2003, this innovative approach advocates for urban design and planning to extend beyond these conventional limits, emphasizing a more profound comprehension of the sensory experiences of those living in cities. Sensory urbanism calls for a comprehensive approach to designing urban spaces, one that recognizes and engages with the intricate sensory relationships that exist between individuals and their urban settings (Korte, 2017; Franco, Shanahan, & Fuller, 2017). This approach seeks to redefine urban planning and design processes by prioritizing the sensory dimensions of urban life, thus fostering environments that resonate more deeply with human sensory experiences. The pioneering work of architects like Steven Holl (2007) and phenomenologists such as Merleau-Ponty (1945) further underlines the multisensory nature of spatial experience and the concept of 'embodied space'. These theories suggest that the experience of space is inherently embodied, engaging the entire sensory apparatus. Lefebvre's (1991) discourse on the production of space complements this perspective, highlighting how sensory experiences are central to the social and cultural construction of spaces. In the context of Tehran, these theoretical insights guide the investigation into how urban designs and materials influence sensory experiences, particularly auditory experiences, and how these in turn shape interactions and the social fabric of public spaces.

This multi-sensory engagement is particularly pertinent in urban settings, where the complexity and diversity of stimuli present unique challenges and opportunities for sensory perception and interpretation. The perceptual system of humans not only underscores the potential offerings of the environment but also reflects the individual's ability to interpret these offerings (Gibson, 1966).

2.2.3 Tracing the Evolution of Sensory Experiences in Urban Environment

The historical evolution of sensory perception in cities, examined through the lens of urban design and architecture, reveals a fascinating narrative of how human experiences and interactions with urban environments have been shaped across different eras and cultures. Kostof (1992) provides a comprehensive overview of how

ancient cities were designed to meet both practical needs and sensory experiences, emphasizing the integration of urban form with social, cultural, and environmental considerations. Kostof explores various outcome of urban design and architecture (Streets, Edge, Public Space, Infrastructure and Greenspace), showing how ancient cities balanced the needs for security and functionality with the desire for aesthetically pleasing and sensory-rich environments. From ancient civilizations to modern metropolises, the sensory dimensions of urban spaces have undergone significant transformations, often reflecting the societal, technological, and cultural shifts of their times (Kostof, 1992).

Urban design, from the layout of streets to the architecture of public spaces and material choices, crafted unique sensory encounters—be it the resonance of footsteps on Roman pavements or the aromatic allure of Middle Eastern bazaars (Pallasmaa, 1996). This period showcased how even the earliest urban spaces were conceived with a sensory richness, blending practicality with the sensory experience.

The transition into the Middle Ages and the Renaissance brought an intensified focus on aesthetics and sensory appeal. This era witnessed the emergence of ornate architecture and urban design meant to awe and inspire, with European cathedrals and Renaissance cities like Florence and Venice standing as testaments to the era's sensory ambitions. These spaces were not just visual masterpieces but were designed to engage all senses, underscoring the centrality of sensory perception in urban experience (Southworth, 1969).

The beginning of modernity, marked by rapid industrialization and technological progress, ushered in significant shifts in urban design, impacting sensory experiences. The advent of materials like concrete and steel, along with a Modernist emphasis on functionality and efficiency, often diminished the sensory diversity of urban spaces, leading to critiques of sensory deprivation and homogenization (Pallasmaa, 1996). This backdrop set the stage for philosophical engagements with urban sensory perception. Walter Benjamin's reflections, especially in "The Arcades Project," delve into the sensory implications of modernity, critiquing the commodification and standardization of sensory experiences in urban life (Benjamin, 1935). Benjamin's notion of 'flânerie' epitomizes the sensory engagement with the city, highlighting the transformative effect of modern urbanity on sensory perception.

In the philosophical discourse on sensory perception within urban settings, Walter Benjamin's reflections present a pivotal point of discussion. His contemplations, particularly in "The Arcades Project" and other writings, delve into the profound impact of modernity on the sensory experiences of individuals in urban environments.

Furthermore, Benjamin's critique of the commodification of sensory experiences in capitalist societies adds a critical layer to this discussion. He posits that in the modern urban setting, sensory experiences are often manipulated and controlled, tailored to serve the interests of capital. This commodification of the senses, he argues, leads to a certain homogenization of sensory experiences, whereby the unique and authentic experiences of urban life are replaced by standardized, mass-produced sensory inputs (Benjamin, 1935). This perspective invites a critical examination of how urban design and planning might either contribute to or resist such commodification processes.

Benjamin's critiques paved the way for further discourse on urban sensory experiences. Scholars like David Harvey and Jane Jacobs expanded on these themes, exploring the impacts of postmodernity, and advocating for sensory engagement and human-scale experiences as essential components of vibrant, liveable urban spaces (Harvey, 1989; Jacobs, 1961).

Recent trends in urban design reflect a revitalized interest in sensory experiences, acknowledging their critical role in fostering livable, engaging, and sustainable urban environment (Malnar and Vodvarkas, 2004). Contemporary urban projects increasingly seek to balance the demands of modern life with a renewed focus on sensory richness, incorporating elements like green spaces, water features, and interactive public art to engage the senses and enhance the quality of urban life (Gehl, 2010).

In the context of this research, particularly focusing on the sense of hearing and the concept of soundscapes, a thorough exploration of sound and hearing within the built environment is essential that will be investigate in the next section. This preliminary step is crucial for delving into the potential of sound to enrich our urban experiences to associate sound and hearing and its relation to build environment.

2.2.4 Soundscape and Built Environment

The role of sound as a key sensory element in the urban environment is a multifaceted subject that has garnered increasing attention in academic discourse, particularly

within the fields of urban planning, architecture, and environmental psychology (Bull and Back, 2003; Augoyard and Torgue, 2005; Schafer, 1977; Kang, 2006). Sound in urban spaces, often referred to as the urban soundscape, is not merely a background element but a critical component that shapes the experience, behaviour, and well-being of urban inhabitants.

The term "soundscape" is often attributed to R. Murray Schafer (1977), a renowned Canadian composer from Simon Fraser University in Vancouver (1977), first introduced the term "soundscape" in his seminal work, *The Tuning of the World*. He described it as the sonic environment encompassing both natural and human-made sounds, shaping the auditory milieu of a particular setting. Soundscapes, Schafer argued, are as much a part of our environmental perception as landscapes, and they profoundly affect our experience of a place. He is widely recognised for initiating the World Soundscape Project (Axelsson, 2020). which consists of a comprehensive investigation of Vancouver's soundscape in 1970s, further extending its research on a global scale throughout the 1980s. A significant contribution of this initiative was the "Handbook for Acoustic Ecology" (Truax, 1999), which describes a soundscape as a sonic environment that emphasizes individual or societal perception and comprehension.

Interestingly, while Schafer's introduction of the "soundscape" term in literature dates to 1967 in the context of contemporary music (Schafer, 1969), there's increasing evidence suggesting that the inception of the World Soundscape Project might have drawn inspiration from Southworth's article published in 1969 (Sterne, 2015; von Fischer and Touloumi, 2018; Radicchi, 2019). In his article, Southworth explored the concept of the sonic environment within urban settings. He examined the significance of sound in the urban context and discussed how various sounds contribute to the overall character and experience of a city. He emphasized the need for planners and designers to consider the auditory environment in urban design and planning processes to improve the quality of life for city dwellers.

Cultivating Cultural Identity and meaning through Sound

Sounds critically shape the auditory landscapes of urban environments, serving as aural signposts that trigger memories, emotions, and a sense of community. Schafer

(1977) introduced the 's concept of 'sound marks' highlights sounds unique to a place, like visual landmarks, enriching our understanding of urban spaces.

Schafer's concept of 'sound marks' - sounds that are unique or typical to an environment. Just as landmarks demarcate spatial zones, sound marks delineate auditory zones that can foster social cohesion. The unique sounds of a city or a particular urban area can become synonymous with its identity and can be integral in preserving and promoting cultural heritage. Sounds, be it from traditional marketplaces, religious ceremonies, or festive observances, weave a sonic tapestry reflective of a city's cultural essence (Poulopoulos & Kavouras, 2017). These sonic cues, intrinsically linked to communal and cultural customs, guide how these traditions are experienced, cherished, and passed down. However, some critiques, especially of Schafer's approach, suggest it leans too heavily on an ecological and aesthetic perspective, prioritizing sound mark conservation and noise abatement (Truax, 1999). Given Tehran's intricate interlacing of cultural, socio-political, and auditory textures, such a stance could potentially overlook the deeper, complex resonances of its soundscape. Tehran's daily auditory experiences, deeply embedded within its socio-political and cultural narratives, accentuate the necessity for an understanding that transcends mere acoustics.

Schafer's (1978) reminiscence of a small-town dweller from the early 20th century underscores the extensive reach of the acoustic horizon. In his work, the distinct sound of each horse's trot relayed more than just movement; it narrated a story, shared information, and engendered a sense of familiarity. Such sonic experiences were not just sensory stimulations but intricate cues that mediated interactions and disseminated information among the populace. Recalling historical sonic imprints, Bull and Back (2003) mention the unmistakable sounds of fishing boats signalling their return, children's footsteps resonating their journey home, and even the harmonious rustle of leaves or spirited pet banter. Furthermore, the audible bustle of a laden wagon returning from the market often served as an unspoken invitation for a friendly visit among neighbours. Thus, even within their homes, residents felt connected to their community's dynamic tapestry. These instances from acoustic ecology emphasize how a city's soundscape can foster unity, continuity, and a shared cultural essence among its inhabitants.

Building upon Schafer's exploration of the significance of sounds meaning, subsequent studies have further delved into this concept, notably "Sound and the City: Sonic Culture in Urban Europe Since 1700," edited by Michael Bull in 2007. This anthology rigorously investigates the impact of sound within diverse European urban landscapes, highlighting the intricate ways in which auditory experiences both influence and are influenced by cultural, social, and historical ambiances and meaning. Bull (2007) explores the significance of symbolic sounds, such as church bells, market calls, and urban noise, as aural markers that trigger memories, emotions, and a sense of place. Through these analyses, the book demonstrates the deep connections between sound, identity, and urban life, making it a pertinent reference for understanding the impact of symbolic sounds in the auditory landscapes of cities.

These sounds, whether intentionally curated or organically evolved, can serve as powerful tools for sonic branding, allowing cities to craft unique identities for their public areas. Renowned examples include the resonant chimes of a town's church bell or the ebullient ambiance of its local marketplace. Such aural symbols anchor a location in a particular context, defining its character and sense of place (Schafer, 1977).

A mosaic of symbolic sounds—from the melodies of street musicians, the polyphony of diverse languages, to the rhythmic beats of cultural festivities—paints urban soundscapes with vivid strokes of community life (Cobussen, 2017). These sound symbols not only construct a distinctive identity but also nurture feelings of belonging, connecting both residents and visitors to the essence of a place.

Yet, sculpting these sonic landscapes is intricate. Urban designers grapple with achieving a harmonious blend of diverse sounds while ensuring that the essence and significance of each symbolic sound is retained (Truax, 2001).

Delving further, Smith (2014) underscores the need to critically assess the symbolic nature of sound within the wider socio-cultural spectrum. This involves understanding how certain symbolic sounds can underscore, challenge, or even redefine dominant cultural narratives and national identities. In essence, symbolic sounds do not merely serve as passive aural motifs but actively participate in creating and mirroring the socio-cultural fabric of urban settings.

A more straightforward method for identifying sounds that serve as sonic identities or symbolic sounds involves focusing on those that have historical significance and are deeply intertwined with a city's enduring cultural heritage. Alain Corbin's study on historical soundscapes (1998) reveals how sound functions as both a symbol and a tool of power—whether through the pealing of medieval church bells, authoritative announcements, or the creation of sound-specific zones within a city. This discussion delves into the role of sound in delineating territories, guiding socio-spatial behaviours, and subtly reinforcing power structures. Corbin's detailed analysis of the significance of bells in nineteenth-century rural France highlights how the sound of town bells was intricately linked to individuals' self-esteem, emotional well-being, civic pride, and sense of territorial identity. When residents heard the ringing of these bells, they felt deeply connected to a cultural landscape that they could easily navigate. These distinctive sound marks served as a unifying force within local communities, standing in contrast to the modern concept of citizenship within vast sovereign nations populated by millions of dispersed individuals. Occasionally, competition between towns and municipalities even led to the theft of one another's bells, sparking legal disputes, and sometimes erupting into riots. Corbin (1998) encapsulates their sentiments with the familiar saying, “A town without bells is like a blind man without a stick”.

Another aspect of symbolizing sound lies in its characteristics. The volume and nature of sound, especially during the advent and peak of industrial civilizations, emerged as a complex symbol. This analysis embarks on a historical exploration, illustrating how noise and soundscapes were not merely markers of power and productivity but also became intricately involved in defining class and social hierarchies. Valiant's 2003 article underscores a noteworthy relationship between loud sounds and indicators of power and progress in both pre-industrial and industrial contexts. The ‘thrum of machinery’ and the ‘clangour of busy loading docks’ symbolize the burgeoning and roaring industrial advancements taking place in locales like Chicago and Illinois. Moreover, a parallel is drawn between loud, industrious noises and masculine control, which opens a door to ponder the gender dynamics and implications tied into this industrial soundscape. The association between loud sounds and masculinity points to a gendered dimension of power dynamics in the industrial age, an aspect that could

potentially be critiqued and explored further, possibly probing into how the suppression or amplification of female voices played a role in these settings.

The role of sound in conveying and exporting meaning extends to the point where it becomes a means of identifying social class. Bijsterveld (2013) illustrates how the auditory dimension of urban life is deeply intertwined with the fabric of social and cultural narratives, offering a rich field of inquiry into how cities are heard, remembered, and lived. Bijsterveld curates a series of case studies that illustrate the diversity of urban soundscapes across the globe and through different historical periods. These studies range from the ringing of church bells in European cities to the cacophony of industrial noises in 19th-century American urban centres. Each case study meticulously details how specific sounds or absence of sounds have shaped the sensory experience of urban inhabitants, reflecting, and reinforcing social hierarchies and identities.

The contrast between the cacophony of industrial and recreational settings and the tranquillity valued by bourgeois norms presents an intriguing dynamic in which sound serves as an arena for class conflict and cultural identity. The participation of urban reformers in debates over "noisy recreation" points to more than just a clash in auditory environment preferences among different social layers; it significantly highlights sound as a reflection of deeper, underlying social and cultural tensions.

Furthermore, Valiant brings to light how bourgeois elements within society aimed to establish conventions that seemed to prioritize sensory discrimination, cultivating discerning auditory skills, and essentially, creating a culture where controlled, refined sound and listening practices equated to social propriety. This idea of "aural self-mastery" and sensory discipline as symbols of elite cultural identity and socialization rituals invites reflection on how these auditory cultures might simultaneously reinforce socio-economic hierarchies, whilst offering a means of defining, and thereby, resisting cultural assimilation or domination.

In concluding, Valiant's discourse poignantly delineates the socio-cultural dynamics playing out in the realm of the auditory during a period of significant industrial and social upheaval. This provides a ripe ground for further research and discussion, particularly in dissecting the multifarious roles and implications of sound in defining,

asserting, and challenging constructs of power, gender, and class within the industrial and post-industrial contexts.

Social identity and soundscape

Exploring the nexus of social identity and the urban soundscape reveals a compelling area for further research, particularly through the lens of case studies that illuminate the unique auditory environments of cities like Tehran. Such an inquiry not only enriches understanding of specific urban contexts but also produce important information regarding to the interactions between public space users and their sonic surroundings and its users.

In cities such as Chicago, the interplay between sound, noise, and social commentary has historically captivated writers, critics, and social reformers, especially those concerned with the destinies of burgeoning metropolises teeming with immigrant populations. These urban observers, through their writings and reflections, have contributed to a sensory-rich narrative of city life. Although not explicitly campaigning for noise control, their accounts utilize sensory perceptions to delineate the characteristics of urban inhabitants. Henry James, for instance, in his depiction of early 20th-century Manhattan's Lower East Side, crafts a vivid portrayal where sensory impressions—visuals, the tactile experience of navigating through crowds, and distinctive odours—serve as vehicles for conveying the quintessence of the urban milieu. While James's narrative might not focus specifically on the soundscape, his contemporaries indeed endeavoured to explore urban dynamics through the auditory experiences of its dwellers, suggesting an underlying call for adjustments to the urban soundscape to better meet public welfare.

This trend of social characterization through sensory experiences extends beyond auditory elements, prominently featuring visual representations. Iconic photographers such as Jacob Riis and Lewis Hine harnessed visual imagery to articulate social challenges and poverty, crafting what Linda Gordon describes as “the look of neglect.” Yet, alongside these visual documentarians, other urban explorers turned to sound to extract authentic reflections on the lives of those who might benefit from reformative measures. Joseph Kirkland, focusing on Chicago's 12th Street viaduct neighbourhood, captures the melodic calls of “dark-skinned peddlers” [sic] in rich

Italian, celebrating the auditory vibrancy of street life. Kirkland's narrative, though tinged with nostalgia for the sounds of the marketplace, does not eschew a candid sensory critique of the neighbourhood. His observations, straddling admiration for the community's sonic tapestry and a stark depiction of the environment akin to walking through a sewer, culminate in a somewhat reductionist and starkly critical view of the inhabitants, labelling them with a deplorable and almost subhuman degeneracy.

Such historical and contemporary explorations into the urban soundscape underscore the profound impact of auditory environments on social identity and the perception of public spaces. Incorporating these insights into a discussion on the soundscape of public spaces, particularly with a focus on Tehran, underscores the importance of sensory experiences in understanding urban environments. The historical narrative of Chicago, where sound served to depict, classify, and critique the social and cultural makeup of urban areas, provides a compelling framework for examining Tehran. Key questions arise: How do the soundscapes of Tehran interact with its social and cultural dynamics? What do these auditory experiences reveal about the ongoing urban, social, and cultural narratives in Tehran's public spaces? Furthermore, how might these soundscapes support or undermine the visibility and inclusion of diverse social, cultural, and individual identities within the city?

By juxtaposing the historical insights gained from Chicago with the contemporary auditory landscape of Tehran, this research aims to offer a comprehensive analysis that bridges past and present urban experiences. Such an approach not only highlights the enduring relevance of sound in urban design but also emphasizes the critical role of soundscapes in crafting spaces that resonate with identity and meaning.

This line of inquiry situates the study of soundscapes at the intersection of architecture, urban planning, and design, suggesting that well-designed public spaces are defined not just by their visual or functional attributes, but by their ability to foster a sense of identity and belonging. In the forthcoming section, I will delve into how these qualities, mediated through sound, contribute to the conceptualization and experience of public spaces, aiming to uncover the layers of interaction between sound and the urban fabric of Tehran. This exploration seeks to enhance our understanding of how soundscapes can be integral to the creation of meaningful, inclusive public spaces.

Soundscape and environmental rhythms

Lefebvre (2004) touched the topic of experiencing and understanding the place through the rhythm that each place provides for the user. He was a social scholar who considers the influence of sound and music as part of rhythm analysis to analyse everyday life aesthetic to express the space, society, and time. Rhythm analysis propounds the idea that the simultaneous, interweaving rhythms of a city—be it through the mundane routines of its inhabitants or the periodicity of natural elements—craft an environmental symphony that shapes and is shaped by social relations and spaces. Lefebvre's concept provides a pathway to not only recognize but also analyse how these rhythms are inherently tied to the socio-spatial structures of urbanity.

The relationship between environmental rhythm and the urban soundscape is a complex and dynamic. Environmental rhythm refers to the natural and man-made patterns of sounds and events that occur in an environment over time, in other words, symphony of experiencing the city through the inhabitants.

Environmental rhythms within urban areas - a blend of both natural and human-made sounds - exert significant influence on the behavioural and social dynamics of its inhabitants. These rhythms, derived from various elements of urban soundscapes, not only affect daily routines but also frame the social fabric of the city, shaping interactions and gatherings, and the overall urban experience. The relationship between environmental rhythms and urban soundscapes is a complex and dynamic one.

Truax (2001) elucidates that the soundscape, defined as the sonic environment around us with emphasis on the way it is perceived and understood, can provide deep insights into the characteristics of how an environment is used and experienced and its cultural context. The intricate relationship between environmental rhythms and urban dwellers' behaviours is evident when one observes commuting patterns. For instance, the daily hum of traffic, punctuated by the recurring sounds of trains or buses, often acts as an auditory cue for people to start or end their day.

Furthermore, these rhythms influence more than just routines; they also affect social interactions.

In modern urban planning, there's a growing emphasis on 'sonic urbanism' or the idea of designing cities keeping in mind the auditory experience (Labelle, 2010). City

planners recognize the potential of positive soundscapes to enhance social interactions, facilitate community building, and foster a more harmonious urban life. In conclusion, the environmental rhythms and soundscapes of a city play a crucial role in determining both the behavioural patterns and social fabric of its residents. Recognizing and harnessing the power of these rhythms can lead to more inclusive, connected, and vibrant urban communities.

Urban Acoustics and Well-Being

Urban soundscapes significantly shape the mental health of urban inhabitants. Exposure to varied soundscapes can either induce stress or promote relaxation. Noise pollution, a common characteristic of urban environments, has been linked to an array of health issues such as sleep disturbances (Basner et al., 2011), cardiovascular diseases (Babisch, 2011), and cognitive impairment (Clark et al., 2012), underscoring the necessity for soundscape design and management. Several studies have delved into the diverse impacts of urban soundscapes on health, highlighting the significant role of noise annoyance. A Serbian study involving 3,000 residents unveiled a stark correlation between elevated annoyance levels from traffic noise and a heightened risk of hypertension and myocardial infarction in men—a correlation conspicuously absent in women (Belojevic and Saric-Tanaskovic, 2002).

Evidence elucidating the tangible effect of noise on sleep disturbances is substantial. Jakovljević et al. (2006) elucidated that urban dwellers in noise-prevalent areas were at a heightened risk for sleep disturbances relative to their counterparts in quieter locales, identifying a positive relation between sleep disturbances and traits like neuroticism, subjective noise sensitivity, and noise annoyance. Similarly, Persson Waye (2004) highlighted the impact of low-frequency noise on sleep, demonstrating that industrial sounds, often rich in low-frequency components, can also substantially affect wellbeing of residents notably inducing sleep disturbances like insomnia and affecting daytime concentration.

Not only on sleep disturbance but its effects on other well-being factors in different age groups. The expansive RANCH study, conducted across the Netherlands, Spain, and the UK, revealed a linear relationship between chronic aircraft noise exposure and

impairments in children's reading comprehension and recognition memory, even after adjusting for various confounding factors (Stansfeld et al., 2005).

Fewer studies have focused on the positive effects of certain urban sounds. While the adverse impacts of noise are essential to understand and mitigate, the emphasis has overshadowed the potential benefits of positive soundscapes. Focusing mostly on noise has led to policies and interventions aimed primarily at noise reduction rather than enhancing positive soundscapes (Brambilla and Maffei, 2006).

The potential of positive urban sounds, such as human activities (e.g., street musicians, laughter, children playing), has not been thoroughly explored. We need a better understanding of how these sounds contribute to urban life, social cohesion, and community and individual well-being.

There has been a limited amount of research conducted in the field of sound studies, specifically focusing on how natural sounds such as birdsong, water features and rustling leaves can impact our overall wellbeing. The findings from these studies suggest that natural sounds are closely associated with relaxation, restoration, and positive emotional states (Aletta et al., 2016). Additionally, some research indicates that introducing pleasant sounds can help mask or alleviate the negative effects of noise. For example, being in a park environment with natural sounds can provide a sanctuary from urban noise and contribute to a sense of rejuvenation (Payne, 2008).

Although we have a lot of information, about the impact of urban noise on wellbeing in a way we still lack an understanding of the entire range of soundscape, in urban environments. It is important to not focus on reducing noise but recognize the potential advantages of promoting pleasant sounds that can improve our wellbeing and enhance the overall quality of urban life. To create cities that are liveable to live in, research and urban planning should adopt an approach by considering both the negative and positive aspects of urban soundscapes.

The Impact of Soundscapes on Human Activity

Throughout history, the sonic experience of urban environments has played a pivotal role in shaping community life and social interactions. As Schafer (1977) noted, the sounds of a community define its character as much as its architectural and social structures. In historical settings, those without the means to employ messengers or

servants often found themselves socially isolated in private acoustic environments. Conversely, vibrant public soundscapes were crucial for inclusive social engagements, as they functioned as the primary means of communication, news dissemination, and community bonding (Thompson, 2002).

Sounds within a city do more than merely create noise; they shape relationships between individuals and their surroundings. They contribute to the creation of a 'sense of place', anchoring individuals' memories and experiences to specific locales (Southworth, 1969). Positive urban soundscapes, exemplified by the melodies of street musicians or the joyful cacophonies from parks, act as invitations. They encourage interaction, prompt people to linger, and facilitate social engagements, thereby nurturing a collective community spirit (Aletta et al., 2016).

However, noise is not always harmonious. Excessive noise pollution or disruptive soundscapes can act as barriers to such engagements. As noted by Bull (2007), undesirable urban noises can discourage community participation and interaction, nudging individuals towards secluded areas or alternative spaces that might be suboptimal for social activity. As urban planners and policymakers consider the design and development of cities, understanding the intricate relationship between sound and social behaviour becomes indispensable.

Sound, Accessibility, and Control

Soundscapes, while often considered in terms of their aesthetic or psychological impacts, can also be powerful indicators of underlying socio-political forces at play. However, many existing theories fall short of recognizing or addressing this dimension (Truax, 2001). In cities like Tehran, soundscapes can act as aural reflections of socio-political conditions, religious practices, and power hierarchies. Bijsterveld (2008) asserts that these sonic environments can be both actively manipulated by those in power to convey certain messages and control, or passively evolve because of grassroots movements or shifts in societal norms.

Exploring Tehran's sonic landscape offers an avenue to understand how sound plays a role in the assertion, resistance, or reflection of power dynamics. For instance, the daily calls to prayer, while religious in nature, also resonate with deeper socio-political connotations and highlight the influence of religious institutions within the city's

soundscape (Slobin, 1993). These sonic expressions can further influence social interactions, either reinforcing established norms and cohesion or challenging them and creating spaces for discourse and potential dissent (LaBelle, 2010).

In essence, a city's soundscape is not merely background noise but a manifestation of its power dynamics and socio-political fabric, which can have profound implications for community cohesion and interactions.

2.3 Assessing Public Spaces: what roles does multi-sensory experiences play in it?

This section delves into the concept of sensory urbanism, aiming to explore the theoretical underpinnings that highlight the connection between soundscapes and the built environment, with a particular emphasis on the significance of public place. The purpose of this review is to extract critical insights related to the central theme of this study: the auditory dimension of urban spaces. More specifically, it seeks to uncover the ways in which soundscapes are woven into the urban fabric, thereby deepening our comprehension of sensory interactions within these settings.

At the heart of this investigation is the quest to identify the unique sonic characteristics that define urban public spaces in Tehran. This includes examining how these auditory elements vary across different locales or scenarios and investigating the dominant sounds characterizing these environments. An initial examination of design principles, as outlined by experts, provides a foundation for a more detailed investigation into the sensory aspects that are vital for the creation of well-conceived public spaces. This review aims to critically assess the existing body of literature, paying particular attention to how auditory experiences are factored into the evaluation frameworks for public spaces. Insights from designers, who play a crucial role in shaping spaces that enrich urban living, are instrumental in delineating the attributes that render public spaces both inviting and functional within the urban context.

The evaluation of public spaces through a sensory design lens requires a holistic, interdisciplinary approach that spans urban planning, architecture, environmental psychology, anthropology, and landscape design. This segment of the literature review establishes a foundation by emphasizing the critical role of visual and spatial elements in the conceptualization, design, and evaluation of public spaces, drawing on the

expertise of urban design scholars. The discussion then expands to incorporate perspectives from other disciplines, emphasizing the profound impact auditory elements have within the built environment. This exploration is part of a broader endeavour to appreciate the potential of sound in enriching the built environment.

2.3.1 Urban Design and the Evolution of Public Spaces Definitions and Roles.

The foundational premise of this discussion is to delineate and analyse the notion of public space, particularly from an urban design perspective. This involves exploring the nuances of place-making and understanding the distinctions between private and public domains. Beginning with a clear definition of public space facilitates a deeper investigation into the characteristics of exemplary public spaces, which will be pivotal for the thesis.

At its core, public space can be broadly defined as any area not confined to private ownership—this initial definition sets the stage for a more detailed exploration. To effectively apply this concept within my thesis, it is crucial to differentiate between private and public spaces, shedding light on their distinct functions and implications in urban contexts. The concept of "public space" is enveloped in complexity, mirroring the ambiguities surrounding notions of "space" and "urban space." This complexity arises from the diverse interpretations and emphases placed on the term by different scholarly fields. Madanipour(2010) highlights the inherent vagueness of the term "public," noting its fluid application across descriptive and normative discussions. For example, while social anthropologists may utilize the term to delineate spaces of human interaction, political theorists might focus on the ideal dynamics within these interactions.

Furthermore, the term "public" is multifaceted, referring variably to society at large, accessible spaces for all, or areas significant to specific community segments with common interests. Its application spans a range of contexts, including the general populace, public opinion, and the fabric of public life, thereby linking to broader societal or governmental structures.

Public Space refers to areas that are open and accessible to all members of a community, irrespective of gender, race, ethnicity, age, or socio-economic status.

Parkinson (2012) in his work "Theorising Public Space" challenges the conventional binary of public versus private spaces by proposing multi-dimensional framework for understanding public spaces. His analysis starts with the critique of the simplistic public/private distinction, unveiling the complexity underlying the nature of 'the public,' the arenas where they congregate, and the subjects of public concern. Parkinson's four-fold definition intricately weaves together concepts of open accessibility, the use of common resources, the generation of common effects, and the facilitation of public roles within these spaces. Built environment scholars (Bacon, 1974; Garvin, 2002; Gehl and Gemzee, 1996; Jacobs, 1993; Lynch, 1960,1981; Marcus, 1998; Olmsted in Beveridge and Hoffman, 1997) All focused on defining and understanding the public space and they have mapped out the roles and applications of public space, narrating its evolving purposes and attributes. Investigated viewpoints vary widely, showcasing a range of primary interests. While some researchers emphasize optimal aesthetic designs (Alexander, 1977; Bacon, 1974), others consider public spaces as constructs of human cognition (Lynch, 1960).

This approach not only broadens the scope of what constitutes a public space but also underscores the critical function such spaces serve in a democratic society—especially in supporting the performance of public roles and, to a degree, in ensuring open accessibility. These spaces are typically owned and maintained by public bodies and include parks, squares, streets, and public facilities (Parkinson, 2012). Hence, public spaces are essential for social interactions, civic engagement, and public events, offering a physical platform for community activities and expressions of democratic freedoms. Public spaces have historically functioned as epicentres for social, economic, and political life, adapting to the needs and structures of societies over time. From the agora of ancient Greece to the forums of Rome, these spaces have facilitated a variety of important activities, including commerce, governance, and socialization (Zukin, 1995). They were produced to meet the needs of ancient people which included meeting, trade, ceremonies, and politic and governmental meeting (Jacobs,1961).

Private Space, in contrast, refers to areas owned by individuals, corporations, or entities that restrict access to the owner or selected individuals. Private spaces include residential properties, corporate offices, and privately owned lands. Access and use

are controlled by the owner, and these spaces are often designed to serve the interests or needs of the owner rather than the broader community (Carmona, 2010).

Birch (2007) argues that even in private spaces such as residential there are some public elements. Mostly, these homes serve as private havens for the essential social unit, the family. Yet, they also embody aspects of public spaces through their architectural and site designs. While property law denies public access to private residential properties, it does control specific features regarded as public space elements. These include rules on signs, how a home is positioned on its plot (including yards), its size and height (Birch, 2007). This type of Design guidelines has become more prevalent with the emergence of "New Urbanism," advocated by the Congress of New Urbanism and key figures like Duany and Plater-Zyberk (1993). Their idea in New Urbanists advocate for principles that influence the design of residential public and semi-public spaces to enhance community connections, combat social isolation, and deter crime. Subsequently their concepts advocated for a revival of traditional urbanism principles (Calthorpe, 1993).

Madanipour (2010, p97) argues that physical objects, such as cars or symbols, can delineate personal territories, establishing claims over certain areas. He notes that notable enhancement in infrastructure development, particularly with the construction of more schools and roads led to a significant growth in the availability of public spaces and centres for various activities. He claims that traditionally, the concept of private property has been the most recognised and socially embedded method for defining a private domain, providing certain individuals with exclusive rights to spaces. Furthermore, Madanipour emphasizes that the private sphere is an area of life controlled on a personal level by individuals, shielded from public scrutiny and government intervention. This domain is a sanctuary of autonomy, where individuals are protected from external observation, allowing for freedom of choice (Madanipour, 201).

Public space within urban areas encompasses central business districts and regional open space networks, including streets, squares, and parks. Modern urban centres often feature shopping centres, public atriums, and city-scale amenities like libraries, educational institutions, convention halls, and sports venues, all contributing to the public space domain. The ways in which individuals engage with, utilize, and adapt

these spaces offer insights into community structure. Changes in population dynamics, such as immigration, increased awareness of disability rights, changing land uses and regulations, as well as mobility and technological advancements, play a significant role in shaping the purpose and function of public spaces. (Birch, 2008).

The dialogue between public and private spaces in urban settings is comprehensively examined by Madanipour (2010), who delves into the traces of publicness and the realm of shared spaces. Walter Benjamin (1968) delves into the accessibility of art and culture in public spaces, shedding light on the communal experience of cultural consumption and its implications for publicness. The conceptualization of the "public sphere" by Habermas (1962) significantly contributes to our understanding of public spaces as arenas for the formation of public opinion, underscored by rational debate and open discourse (Sennett, 1974). This philosophical framework has shaped the design of European squares and boulevards, conceived as platforms for social interaction and civic participation.

Amin (2008) broadens the notion of the public space using the term public realm which encompass not only the physical settings but also the rich tapestry of social interactions and cultural expressions occurring within them, adding layers to the urban vibrancy.

This philosophy has influenced the design of various public spaces, including squares and boulevards, especially in European cities, intended to foster social interaction and civic engagement.

Contemporary urban studies, spearheaded by thinkers like Carmona et al. (2008), challenge the traditional architectural and landscape boundaries that defined public spaces, proposing a broader, more inclusive understanding. This reimagining rejects the notion of fixed 'enclosures' in favour of diverse, multifunctional spaces that reflect the dynamic nature of urban life.

The transition from traditional, enclosed designs to a variety of adaptable, multifaceted public spaces underscores the importance of flexibility and multipurpose utility in the conceptualization of successful public areas (Carmona, 2014). Building on this foundation, the subsequent section will delve into the criteria for high-quality public spaces as theorized in urban design literature, aiming to distil the essential qualities that contribute to their success and relevance in contemporary urban environments.

2.3.2 What makes a good public space? Learning from Other Disciplines

This question has garnered fame and become a pivotal subject in the theoretical frameworks of anthropologists, psychologists, planners, urban designers, and practical urban planning enthusiasts since its introduction to the public. Historically, geographers and anthropologists were the pioneers in showing a genuine interest in public spaces. Their enthusiasm and insights significantly influenced the fields of urban design and planning (Jonas, McCann, & Thomas, 2015). This historical context provides me with a compelling reason to continue exploring their theories as I specialize in urban design. The concept of place-making, as a foundational principle in design, was first thoroughly developed and articulated by Edward Relph in 1976. He described it as an inherent process that emerges from the interactions between people and their environments, emphasizing the creation of meaningful places. Relph delved into various facets related to place, including the feelings of being 'inside' or 'outside' a place, the identity and essence of place, and the phenomenon of placelessness. His pioneering work aimed to deepen the understanding of place theory, which in turn would guide strategies for preserving, altering, and generating new places. While Relph's exploration was broad, it fundamentally emphasized the quality of place, focusing on how places can authentically embody and enhance the relationship between individuals and their surroundings. His insights have been instrumental in shaping further inquiries and practices in fields such as urban planning, architecture, and geography, as they continue to explore the creation of spaces that resonate with human experience.

Additionally, other geographers have highlighted the profound connection between place and individuals' emotions and satisfaction, emphasizing the need to evaluate public spaces accordingly. They have underscored the significance of place meaning, identity, and the sense of place as critical components of our interaction with our environments. These elements are vital in understanding how spaces resonate with individuals, contributing to a deeper, more appreciation of public areas and their impact on community well-being. They focus more on people interaction with place rather than the physical elements. One notable geographer who has extensively discussed the evaluation of public spaces is William H. Whyte. Whyte was an urbanist

and a keen observer of the dynamics of urban spaces. His work, especially "The Social Life of Small Urban Spaces" (1980), provides a comprehensive look at the ways people use public spaces in urban settings. His methodological work helped many scholars to assess the place quality as he used time-lapse photography and rigorous observation with maps to understand the features that make public spaces work well, such as their accessibility, the arrangement of seating, and the presence of water features and trees. It seems he prioritized the experiential aspects and attempted to quantify them, yet his primary focus remained on the physical design aspects. Although Whyte accentuated the significance of physical layout and design features in public spaces, it appears he may not have fully considered the influence of social policies, economic conditions, sensory experiences, and the broader urban environment in determining how these spaces are utilized and accessed. Anthropologist, Setha Low introduced different perspective on public space quality that diverges from Whyte's, particularly in "The Social Life of Public Spaces" (2009). She emphasizes the critical role of cultural and social determinants in the utilization and accessibility of public spaces. Low's work explicitly confronts issues of social inequality, power imbalances, and exclusion, underscoring how design and policy decisions can disproportionately affect different groups, an aspect less emphasized in Whyte's predominantly observational strategy. From Low's perspective, an ideal public space is accessible and inclusive, catering to all societal segments, irrespective of socioeconomic status, race, ethnicity, gender, or physical capabilities.

Echoing themes like those of geographers like Relph, Low also places significant importance on the sense of place and community identity within public spaces. She advocates for designs that honour and integrate the local history, cultural practices, and social significances, thereby enriching the identity of these spaces. Relph (1976) articulates that the essence of place identity is not only manifest in its physical appearance, activities, and meanings but also significantly shaped by the experiences, perceptions, and intentions of the observer. This shared identity stems from our collective engagement with similar objects and activities, as well as our cultural indoctrination to appreciate specific place qualities. This viewpoint adds a layer of complexity to the understanding of public spaces, suggesting that their identity and

quality are as much a product of human interaction and cultural context as they are of their physical configuration.

Talen (2000) introduces the concept of the 'public realm' to denote geographic spaces that are not only open and physically accessible but also facilitate interpersonal connections and space appropriation by its users. Drawing from social support literature, this notion underscores the importance of physical spaces in fostering emotional bonds that enhance psychosocial well-being and mental health, as echoed by Cattell et al. (2008) and Fleming et al. (1985). Latham & Layton (2019) and Mitchell (2003) further argue that public spaces play a critical role in bolstering intra-community cohesion and advocating for social justice. These spaces serve as platforms for showcasing and advocating social rights through collective action, thereby influencing perceptions of social justice positively.

In summary, the accessibility, inclusivity, identity, and meaning of public spaces are pivotal in public space in other disciplines and in urban design. Urban designers are tasked with recognising and incorporating this knowledge into their work. William H. Whyte's approach as a social anthropology exemplifies how insights from various disciplines can enrich urban design, highlighting the importance of integrating multidisciplinary knowledge to enhance the functionality and social value of urban spaces.

2.3.3 Public Space Quality Assessments in Urban Design

The literature on urban design consistently highlights the enhancement of public space quality as a fundamental objective of the field. This aim is manifested through diverse approaches that address the aesthetic and behavioural dimensions of human interaction with public spaces, as identified by Lang (2005), and extend to the broader concepts of placemaking (Carmona, 2014b; Carmona et al., 2003), the creation of user-friendly environments (Tibbalds, 2000), the promotion of choice and democratic access (Bentley, 1985; Gehl, 2010), and the pursuit of Good City Form (Lynch, 1981). Despite the apparent diversity in terminology, which might suggest a lack of coherence, these various perspectives collectively affirm that enhancing the quality of public spaces—or placemaking—is central to urban design.

Historically, the evaluation of public space quality has transitioned from the Modernist emphasis on order, functionality, and efficiency—often sidelining social and human elements—to a more human-centric view. Pioneers like Le Corbusier, with his vision of the "Radiant City," emphasized broad, open spaces that, while aesthetically pleasing, often lacked the vibrancy and engagement essential for the everyday experiences of city dwellers. This approach has been critiqued for its neglect of the social dynamics and human-centric aspects that geographers and urban scholars increasingly emphasize, particularly in the context of placemaking's role in fostering well-designed, inclusive environments post-industrialization. The shift towards a more human-centric perspective in urban planning was significantly influenced by Jane Jacobs, whose critiques of large-scale urban renewal projects highlighted the destruction of community social fabrics. Advocating for mixed-use developments, shorter blocks, and the preservation of older buildings, Jacobs underscored the importance of safety and liveliness in urban spaces. However, her focus on specific urban forms has been critiqued for not fully addressing the diversity of successful public spaces or the complexities of issues like gentrification and economic inequality which is out of this research scope.

Following a shift to more human-centric assessment of places, in the modern context, inclusivity and accessibility have emerged as key values in the assessment of public space quality and in theory. Well-designed public spaces inherently nurture a feeling of belonging across diverse demographics. Truly inclusive spaces are predicated on designs that embrace and amplify diversity, ensuring that all individuals, irrespective of their backgrounds, feel a sense of welcome and representation. Mitchell (2003) asserts that these spaces are essential platforms for democratic expression, places where diversity is more than merely acknowledged, it is celebrated. In urban planning theory, Fainstein (2010) further accentuates this point, suggesting that urban areas, when thoughtfully designed with inclusivity as a foundation, can emerge as instruments of social equity, bridging divides be they economic, racial, or cultural. She is a scholar known for her critical approach to urban development, emphasizing equity, democracy, and diversity in city planning and policy. It stands to reason then that a truly inclusive public space should emphasize a harmonious amalgamation of different

user groups, ensure equitable accessibility, and promote a range of cultural expressions.

The importance of diversity and variety in public spaces has been further elaborated by Carmona (2014) and Bentley (2008), who argue against the homogenisation of urban spaces. They advocate for a mosaic of spaces, each with its unique character, to ensure that the public places offer 'something for everyone.' This approach values diversity as a strength, essential for creating dynamic, multifunctional environments that reflect the complex social fabric of urban life.

Complementing this, Ian Bentley (2008) delves into the concept of variety, which he perceives as an opposition to monotony and repetitiveness, vital for enriching public spaces. Bentley posits that variety in urban environments is not merely an aesthetic aspiration but a foundational element of economic vitality and a pivotal consideration in urban planning. He suggests that endorsing diverse uses within a project is not just an invitation to those wielding power but a strategic engagement with the multifaceted layers of urban life. A space characterised by a spectrum of uses inevitably witnesses a diversity in its architectural forms, temporal patterns, access modalities, and the reasons for which it is frequented. This mixture of activities, structural designs, and users converges to create an urban milieu ripe with perceptual and experiential richness. It is this very richness that makes public spaces not just inclusive but alive with the hum of varied human experiences. This not only enhances the visual appeal of the environment but also serves as a magnet for a broad variety of users. Hence, these individuals vary in terms of their backgrounds, preferences, and schedules, making the urban space a vibrant hub of activity throughout different times of the day and night. Their motivations for visiting or utilizing the space also vary significantly, ranging from leisure and entertainment to work and social interactions and activities. Therefore, diversity, as a quality of public space, is not about mere coexistence of differences but about creating a dynamic, multifunctional, and vibrant environment that acknowledges and celebrates these differences. It is about designing public realms that are reflective of the complex social fabric, ensuring not just equality of access and use, but a depth of experiences that resonate with the varied rhythms of urban life. Both Carmona and Bentley underscore the idea that acknowledging diversity and

variety is not a concession but a celebration of urban life's multifaceted nature, crucial for the creation of truly inclusive places.

The role of inclusivity and diversity in enhancing public space quality also resonates with Gehl's perspective, which emphasizes the importance of diverse activities in public spaces. Gehl categorizes activities into necessary, optional, and social, suggesting that the inclusivity of a space is reflected in its ability to promote a wide range of interactions. Design choices that encourage comfort and communal experiences, such as thoughtfully arranged seating and pedestrian-friendly walkways, enhance a space's ability to support socializing, thereby amplifying its inclusive quality. While necessary activities are fundamental, it's the optional ones -leisure, recreation, relaxation - that truly gauge a space's inclusivity. Furthermore, Gehl underscores the role of social activities as spontaneous or organized interactions stemming from human encounters in public spaces. The inclusivity of a space can significantly amplify the quality and quantity of these social interactions.

Spaces that foster comfort and offer opportunities for communal experiences - through thoughtfully arranged seating, pedestrian-friendly walkways, or visually engaging surroundings - are more likely to encourage lingering and, by extension, socialising (Aelbrecht & Stevens, 2019). Such design choices signal a space's opportunity to diverse social engagements, thereby enhancing its inclusive quality (Hillier, 1996).

Public spaces naturally support necessary activities, their design and quality significantly influence the prevalence of optional and social activities. These spaces must encourage comfort, interaction, and community, factors achieved through thoughtful design catering to diverse needs and preferences. The harmonisation of designs and layouts that induce comfort and communal experiences encapsulates Gehl's, Carmona's, and Bentley's collective vision of inclusivity — a dynamic blend of diverse activities, appeals, and functionalities.

Inclusivity in public spaces transcends the simplistic notion of accessibility; it involves thoughtful design and planning that facilitate a breadth of activities appealing to diverse demographic and psychographic profiles. Spaces that achieve this level of inclusivity contribute to the social and cultural fabric of cities, creating environments that are not just passively open but actively engaging for all segments of the urban population (Jacobs, 1992; Gehl, 2011; Mogilevich, 2020).

The Concept of Publicness

The concept of publicness transcends the mere physical attributes of a space, delving deeply into its social and behavioural dimensions. As originally posited by Forrest & Paxson (1979), the essence of publicness is closely linked to the diversity it holds—the more varied the individuals and activities a space supports, the more 'public' it is considered. This diversity is not limited to superficial differences; it spans age, race, ethnicity, social class, gender, and even more nuanced distinctions in appearance or behaviour. The richness of a space's publicness is further amplified by the presence of varied sub-spaces and its adaptability over time, advocating for an environment that not only acknowledges differences but actively fosters and embraces a wide spectrum of diversity, including those on the fringes of societal norms.

This exploration into publicness reveals a principle inherently connected to notions of accessibility, inclusivity, and democratic engagement (Brill, 1989). However, an in-depth look at urban design and architectural practices, as discussed by Brill (1989), unfolds a more complex narrative. It highlights how the physical and aesthetic design of public spaces can act as silent gatekeepers, subtly delineating who belongs and who does not. This is evident in design elements that signal exclusion to certain groups—be it through doors that suggest a space is not truly public or the strategic placement of guards that curate the population within these spaces. These practices underscore a tension between the ideals of publicness and the realities of privatization and surveillance, questioning the inclusivity of urban spaces which is not in the scope of this research.

The debate on publicness also touches upon the metrics of a public space's success. Whyte (1980) suggests that the vibrancy of a space can be measured by its usage and the diversity of its occupants, particularly emphasizing the importance of accommodating those deemed socially acceptable. Yet, this perspective only scratches the surface of publicness's broader implications.

Delving deeper, theories by scholars like Lefebvre (1974) and Certeau (1984) offer insights into the sensory dimensions of public spaces. Lefebvre's notion of space as a social construct and Certeau's brief emphasis on auditory experiences in urban environments underscore the profound impact of sensory experiences on our

perception and interaction with public spaces. These theoretical frameworks illuminate how the soundscapes of a city contribute to our understanding and experience of publicness.

Building on these discussions, the academic definition of publicness, informed by scholars like Magalhães (2010) and Kohn (2008), encompasses not only physical and psychological accessibility but also a communal sense of ownership and a rich fabric of interpersonal interactions. This comprehensive view challenges us to reconsider the dynamics of urban spaces, urging a reimagining of publicness that truly embodies the principles of diversity, inclusivity, and engagement but from other perspective rather than physical attributes. Through this lens, the concept of publicness invites a critical examination of how spaces are designed, governed, and experienced, aiming for a future where urban environments are truly accessible and welcoming to all.

In summary, the literature review underscores a significant evolution in the approach to assessing and enhancing the quality of public spaces in urban design. From the modernist emphasis on aesthetic and functional aspects to the contemporary focus on inclusivity, diversity, legibility and human-centric design, urban design theories have progressively recognised the importance of creating spaces that are not only accessible and engaging but also reflective of the diverse needs and desires of urban populations. This shift towards inclusivity and diversity, supported by the contributions of scholars like Jacobs, Mitchell, Fainstein, Carmona, and Bentley, highlights the complex relationship between design, social interaction, and the democratic use of public spaces, underscoring the role of urban design in fostering vibrant and equitable urban environments.

2.3.4 Expanding the Lens, Multisensory Evaluation of Public Space Quality

In this study, the insights gained from the human-centric perspective of urban design in previous section prove to be beneficial. Nonetheless, there is a significant necessity to explore the role of senses in fostering satisfaction within public spaces. The advent of post-modernism has catalysed a heightened emphasis on the creation of inclusive and desirable environments. This era has been marked by the emergence of diverse tools and methodologies designed to assist urban designers in improving both the

quality and inclusivity of public spaces. Furthermore, the philosophical discourse, notably by Lefebvre(1974), opens up new avenues for understanding public spaces and publicness through a multisensorial lens, providing a richer, more refined appreciation of these environments..

In exploring the sensory dimensions of public space quality, the contributions of Kevin Lynch (1960), Ian Bentley(1985), and Vikas Mehta (2014) stand out, along with the practical guidelines offered by The Commission for Architecture and the Built Environment (CABE,2000) aimed at urban design practitioners. These scholars and guidelines have significantly advanced the dialogue between theoretical frameworks and practical urban design considerations, offering insights into the complex interplay of sensory experiences within public spaces.

Despite these advancements, a gap remains in fully exploring the range of sensory interactions individuals have within and across public spaces. The foundational work of Lynch, Bentley, and Mehta points towards a burgeoning field of study that seeks to integrate a holistic sensory understanding into urban design practices.

Kevin Lynch's seminal work, "The Image of the City" (1960), pioneered the concept of "imageability," focusing on the attributes that render urban environments visually distinctive and easily navigable. Lynch posited that high-quality public spaces contribute significantly to a city's imageability, making them memorable and comprehensible to both residents and visitors. His theory, delineating elements like paths, edges, districts, nodes, and landmarks, underscores the critical role of legibility in urban design. He argued that well-designed, imageable public spaces not only enhance a city's aesthetic and spatial coherence but also foster a strong sense of place and community belonging.

While Lynch's contributions have been instrumental in enhancing the legibility and aesthetic coherence of urban spaces, a critical examination reveals a significant limitation, the predominance of the visual sense over other sensory experiences in the evaluation of urban quality.

Urban environments are not solely experienced through sight; they are also navigated and understood through sound, smell, touch, and even taste. For the scope of this research the focus is on the soundscapes of cities, from the bustling noise of markets to the tranquil sounds of urban parks, a variety of auditory experiences—such as the

hum of traffic, conversations and vocalizations of people, the chirping of birds in urban trees, or the meows of street cats—play a pivotal role in shaping residents' perceptions and experiences of urban spaces. These sounds, ranging from the energetic to the serene, contribute significantly to the atmosphere and identity of urban areas, influencing how these spaces are felt and understood by those who inhabit or visit them.

By concentrating on visual elements, Lynch's framework risks overlooking these other sensory dimensions that are essential to a holistic urban experience. The result is an urban design paradigm that, while visually coherent, may not fully cater to the complex sensory needs and preferences of urban dwellers. This oversight suggests a gap in Lynch's theory, indicating the need for a more inclusive approach to urban design that considers the multisensory nature of human experience.

Ian Bentley et al.'s "Responsive Environments: A Manual for Designers" (1985) is a seminal work that has significantly influenced the field of urban design, particularly in the context of creating quality public spaces. The book outlines a framework for designing urban environments that are responsive to the needs of their users, emphasizing principles such as permeability, variety, legibility, robustness, visual appropriateness, and richness. These principles aim to ensure that urban spaces are accessible, diverse, easily navigable, adaptable, contextually relevant, and engaging. Bentley's work, like Kevin Lynch's, places a strong emphasis on the visual and spatial aspects of urban design, advocating for environments that are legible and coherent to their users. The principle of legibility, for instance, echoes Lynch's concept of imageability, underscoring the importance of making spaces that people can understand and navigate easily. Both Bentley and Lynch highlight the need for distinctive visual cues in the urban landscape that help individuals orient themselves and move through spaces with confidence.

While my previous summary emphasized the visual and spatial dimensions of Bentley's framework, it is important to acknowledge that Bentley and co-authors also touches upon spatial experiences as a component of urban design quality. The criteria he names — permeability, variety, legibility, robustness, visual appropriateness, and richness — collectively aim to create environments that are responsive to the needs of users. Among these, richness and visual appropriateness are the criteria most

relevant to the sensory dimensions of design. Richness, in Bentley's framework, refers to the depth of sensory experiences that an environment offers. This criterion acknowledges that engaging public spaces stimulate more than just the visual sense; they also cater to hearing, smell, touch, and possibly taste. By advocating for richness, Bentley suggests that quality public spaces should provide a layered sensory experience that contributes to a person's enjoyment and appreciation of the environment. Visual appropriateness, on the other hand, while primarily focusing on the visual aesthetics, implicitly supports the idea that design should be contextually sensitive and pleasing, potentially enhancing the overall sensory experience of a place.

However, a critique of Bentley's discussion on sensory quality lies in its breadth rather than depth. While acknowledging the importance of multisensory experiences, "Responsive Environments" does not extensively explore how urban design can systematically address and incorporate these sensory aspects beyond the visual or even explain the important sensory factors that can influence users' perception. The treatment of sensory experiences tends to be more implicit than explicit, lacking detailed guidance on integrating these aspects into the urban design process. For instance, there is little elaboration on specific design strategies or interventions that could foster varied sensory experiences, such as the incorporation of textured walkways for tactile stimulation, the use of water features or green spaces for auditory and olfactory richness, or the design of public spaces that encourage local food markets to engage the sense of taste.

A critique of Bentley's approach, much like Lynch's, is its predominant focus on the visual and spatial dimensions of urban environments, with less attention paid to the full range of sensory experiences that contribute to the quality of public spaces. While the principles of responsive environments offer valuable guidance for creating functional and aesthetically pleasing urban spaces, they do not explicitly address how urban environments engage the other senses, such as hearing, smell, touch, and taste.

Mehta (2014) offers an exploration into the social dimensions of public spaces, emphasizing the critical roles of sociability, accessibility, engagement, and vibrancy in urban environments. His insights reveal how these spaces can catalyse community

interactions, accommodate diverse activities, and invigorate the vitality of the public realm. Central to Mehta's analysis is the concept that public spaces are not merely physical locations but vibrant platforms for civic life, fostering essential encounters and exchanges that weave the fabric of a dynamic urban community. Mehta's work, while invaluable for its in-depth look at the social life of public spaces, tends to focus on behavioural and social interactions, offering less exploration into the sensory experiences that equally shape the quality of public spaces. While aspects of social engagement and accessibility undoubtedly enrich the sensory tapestry of these environments—through the ambient sounds of social activity, the visual intrigue of people-watching, and the palpable atmosphere of energy—these facets have been more thoroughly examined by disciplines such as environmental psychology and urban anthropology. These fields delve into the nuanced ways sensory stimuli contribute to our experience of place, suggesting a broader, interdisciplinary approach could bridge the gap in comprehensively addressing the spectrum of sensory experiences integral to public space quality (Schafer, 1985; Tuan, 1979; Landry, 2012; Pocock, 1989).

Similar work to Mehra (2014), The Commission for Architecture, and the Built Environment (CABE) has developed comprehensive guidelines aimed at enhancing the quality of public spaces. CABE's guidance, through various publications and tools such as "By Design - Urban Design in the Planning System: Towards Better Practice" and "Creating Successful Masterplans: A Guide for Clients," often addresses the visual and spatial qualities of public spaces. This includes considerations for how spaces are laid out, how they accommodate diverse users, and how they integrate with their surroundings to create cohesive and functional urban areas. For example, CABE has advocated for public spaces that are easy to navigate and understand (legibility), spaces that provide a sense of safety and security (security), and environments that are adaptable and flexible (adaptability).

While these guidelines inherently support sensory experiences by creating visually appealing, navigable, and functional spaces, a direct and detailed focus on evaluating public spaces through all five senses—sight, sound, smell, touch, and taste—is less prominent in CABE's published guidance. The sensory experience is often an implicit outcome of good design rather than an explicit focus of evaluation. For instance, the

emphasis on visual appeal and legibility enhances the visual sensory experience, but detailed guidance on incorporating auditory, olfactory, tactile, or gustatory elements into public space design is not deeply explored.

Both Mehta (2014) and CABE (2000) provide essential frameworks for thinking about public space quality, emphasizing the social, functional, and aesthetic dimensions of urban design. However, a critique of their work reveals a common oversight: a detailed focus on the multisensory experiences that are crucial to creating fully engaging and memorable urban spaces. This gap highlights an opportunity for future research and practice in urban design: to develop a more explicit focus on sensory experiences, integrating considerations of soundscapes, olfactory environments, tactile qualities, and even the taste of local foodscapes into the design and planning of public spaces. Bridging this gap not only enriches the existing frameworks established by Mehta (2014) and CABE (2000) but also deepens our grasp of what constitutes quality in public spaces. Recognizing and integrating the full array of human sensory experiences allows urban designers and planners to craft spaces that are not just functional but truly immersive, offering layers of enjoyment and memorable experiences that mirror the intricate tapestry of urban life. This endeavour involves weaving soundscapes into the fabric of current design principles, potentially cultivating new dimensions of quality. Through such integration, the aim is to create urban environments where the potential of sound, alongside other sensory experiences, is harnessed to enhance the vibrancy and appeal of public spaces, making them more reflective of the diverse and rich sensory world we inhabit.

Talavera (2012) article presents an ambitious endeavour to reconcile this prevalent disparity between conventional accessibility enhancements and the complex spatial structure of urban environments. Exploring the pedestrian viewpoint, Talavera (2012) underscores the imperative of adopting a more encompassing strategy to comprehend the ways people traverse and interact with city spaces. This effort correlates with Lynch's (1960) notion that true accessibility extends beyond mere physical ease, including the 'attractiveness' and distinctive character of urban pathways.

Talavera's analysis of pedestrian movement is particularly noteworthy. He insightfully perceives the pedestrian not merely as a mobile entity but as a conscious contributor to the city's story. This notion reflects the ideas of urban thinkers like Venturi (1998)

and Jacobs (1996), who emphasize the pedestrian's multisensory interaction with the city — engaging in cultural exchanges, commerce, and the appreciation of natural and architectural beauty. Recognizing this rich pedestrian experience is essential as it highlights the intricate interplay between individuals and their constructed surroundings, an element often overlooked in standard urban planning theory.

The symbiosis of Lynch's legibility theory and CABE's principles is starkly apparent in the context of public space design and accessibility. Both doctrines advocate for environments that facilitate not merely physical movement but cognitive understanding. The capacity for individuals to 'decode' their environment, aided by salient features like landmarks — a central aspect of Lynch's theory — is essential in their spatial experience. Such landmarks function as navigational aids, heightening an area's legibility and, hence, its approachability.

Moreover, CABE's directives on connectivity and transport integration find common ground with Lynch's 'paths' concept. Lynch described paths as the conduits of travel, essential to a city's interconnectedness. This theory dovetails with CABE's insistence on harmonizing diverse transportation modes and conscientious land use planning, affirming that urban design accommodates the myriad pathways individuals might pursue within a space.

In examining the convergence of Lynch's and CABE's philosophies, the complexity of an urban environment's legibility unfolds, revealing its dependence not just on tangible spatial design but also on the inhabitants' psychological experiences. The design tenets propounded by both Lynch and CABE lay the groundwork for urban domains that are accessible, enriching, and captivating. These environments stimulate discovery, foster interactions, and instil a sense of security, underscoring that a cityscape's legibility is fundamental to its accessibility, comprehensive efficacy, and inclusiveness.

2.3.5 Summary and Conclusion

The discussion in the thesis section identified several key qualities of public spaces that are central to urban design theory, as identified through the contributions of Lynch (1960), Bentley (1985), Mehta(2014), and the guidelines set forth by The Commission for Architecture and the Built Environment (CABE, 2000). These qualities encompass a broad range of considerations, from the physical and visual to the sensory and social,

highlighting the multifaceted nature of designing engaging and inclusive urban environments. Summarizing these contributions, the following qualities emerge as critical in the design of quality public spaces.

The core qualities identified for designing superior public spaces include Imageability by Lynch stresses the need for visually unique and navigable urban settings focusing on creating memorable spaces with paths, edges, districts, nodes, and landmarks contributing to city legibility and aesthetic unity. Legibility as discussed by Lynch and Bentley emphasizes user-friendly public spaces through distinct visual cues enhancing city navigation. Bentley's notion of Richness points to an environment's sensory depth, urging for public spaces that offer multiple sensory engagements beyond visuals. Visual Appropriateness according to Bentley calls for designs that are appealing and suit their context, elevating the sensory experience. Sociability by Mehta highlights the importance of social interactions within public spaces, promoting diversity and vitality. Accessibility, inclusivity and diversity are fundamental, ensuring public spaces are welcoming to everyone, fostering diverse sensory and social experiences. Engagement and liveliness as mentioned by Mehta underline the role of public spaces in encouraging active participation and creating a vibrant atmosphere. The critique within the thesis points out the overlook of comprehensive sensory experiences in urban design, beyond visuals Security, Adaptability, and Connectivity discussed by CABI focus on creating safe, adaptable, and well-connected spaces. The conclusion underscores the necessity of a holistic approach in urban design that marries these qualities to develop public spaces that are functional, beautiful, sensory-rich, socially interactive, and universally accessible. Highlighting the need for ongoing research and practice in urban design to delve deeper into the spectrum of sensory experiences, aiming to improve experience of dwellers.

3. Theoretical Framework

3.1 Exploring the Links Between Public Space Evaluation and Soundscape Opportunities

Building upon the theoretical framework that examines the correlation between public space assessment and the potential of sound, it becomes evident that urban design's

focus needs to expand beyond its traditional visual and spatial elements. The inclusion of soundscapes alongside visual elements such as functionality, identity, legibility, accessibility, comfort, and pleasure, proposes a more holistic approach to public space design. This shift acknowledges the indispensable role of sound in enriching urban ambiance, suggesting below assumptions for further exploration.

- The integration of soundscape potentials into the assessment of public spaces will enhance their overall quality, making them more memorable, legible, comfortable, inclusive and pleasurable for users.
- There exists a discernible link between the spatial configuration of urban environments and the characteristics of their soundscapes, suggesting that strategic modifications to these elements can significantly enhance the city living experience. This relationship implies that thoughtful urban design and planning can not only improve the visual aesthetics and functionality of urban spaces but also enrich the auditory environment, thereby elevating the overall quality of life for city dwellers. By integrating sound considerations into the planning process, cities can offer more immersive and pleasant experiences, fostering environments where both the physical and the soundscape are harmoniously aligned to enhance the urban experience.

These assumptions supported by acknowledging that public spaces are multisensory realms where sound plays a crucial role. To address this oversight, it is imperative to incorporate sound as a fundamental component of urban design quality. This includes strategies such as aligning sound marks with landmarks to enhance spatial legibility, finding sounds that are meaningful to fortify identity and fostering a diversity of sounds to promote a range of activities and increase enjoyment.

Furthermore, integrating auditory features with visual elements can significantly enhance the overall perception of a space. This integration might involve thoughtful consideration of the soundscape when planning green areas, selecting materials that influence the acoustic environment, and utilizing the dynamic nature of sound to enrich the quality of public spaces. By blending auditory dimensions with visual aesthetics, such as coordinating sound marks with visual landmarks, urban spaces can achieve

greater legibility, support varied activities, enhance enjoyment, and strengthen the sense of place identity, ultimately elevating the overall quality and perception of public spaces

3.1.1 Merging Pleasurability, Imaginability, and Auditory Elements

In the theoretical framework of this research, this research explores the intricate relationship between pleasurability, imaginability, and auditory elements within public spaces. These components collectively cater to the sensory, emotional, and psychological well-being of individuals, by offering aesthetic pleasure, engaging multiple senses, and fostering social interactions. Central to this discussion is Kevin Lynch's notion of "imaginability" (1960), which highlights the importance of a space's unique characteristics that render it memorable and easily visualised by its users. Traditionally, imaginability has been tied predominantly to visual cues. However, this research posits that for a comprehensive understanding of a space's character and its impact on users, the auditory dimension must also be embraced auditory elements significantly enrich the fabric of public spaces. Sounds, ranging from the gentle whispers of foliage to the lively banter typical of urban settings, are not just background noise; they are integral to the identity and memorability of a place. As the I inspired from literature which reviews the work of Alain Corbin (1998) who demonstrated how the sound of town bells was pivotal in shaping residents' self-esteem, emotional health, civic pride, and sense of belonging to a place. The ringing of these bells enabled inhabitants to feel a deep connection to their cultural landscape, a space that was intimate enough to traverse by foot. By integrating soundscapes into urban design, place maker can enhance the imaginability of spaces. Sonic features—be it the distinct sounds emblematic of certain locales or the routine symphonies of city life—bestow upon spaces a unique identity, setting them apart and making them more memorable to individuals.

Moreover, the preservation of existing sonic environments alongside the deliberate crafting of new soundscapes is crucial for amplifying the historical and cultural depth of spaces. Such efforts not only contribute to a richer, more engaging urban environment but also foster a stronger sense of place and community identity. This

research advocates for a broader perspective on imaginability, one that encompasses the auditory alongside the visual, to cultivate more vibrant, memorable, and emotionally resonant public spaces.

3.1.2 Urban Comfort and Noise

Central to the discourse on auditory experiences is the concept of 'noise'. Historically, a predominant focus within soundscape studies has revolved around noise control, particularly how it influences perceptual quality. Noise, in its most essentialized definition, stands in contrast to "sound." While sound is often perceived as intentional and harmonious, noise emerges as unanticipated and jarring. This intricate juxtaposition was eloquently expounded by Schafer (1977) in his seminal work, "The Tuning of the World." Here, he delineates between the "hi-fi" and "lo-fi" soundscapes. A 'hi-fi' soundscape, predominantly prevalent in serene natural or rural landscapes, is one marked by the clarity of individual sounds, facilitated by a low ambient noise backdrop. Conversely, the 'lo-fi' soundscape, frequently synonymous with urban milieus, is one where numerous sound converge, culminating in a soundscape replete with noise.

The conventional understanding of noise is that of an unwanted auditory intrusion: the blaring horn disrupting a tranquil moment, the raucous resonance of a busy marketplace, or the distant hum of an aircraft unsettling the night's stillness. This disruption is not just a fleeting inconvenience; it bears tangible health repercussions. Persistent exposure to elevated noise levels is associated with a spectrum of health implications ranging from stress and sleep disturbances to more severe outcomes like hearing loss.

Recognizing these implications, urban designers have intermittently incorporated strategies aiming to mitigate noise, such as the establishment of buffer zones, integration of green acoustic barriers, and the utilization of sound-dampening materials. Yet, a contention persists - is it the inherent character of the noise or an individual's subjective perception of it that engenders discomfort? Bull et al. (2013) posit that urban inhabitants might indeed acclimate to certain consistent sounds over time, suggesting that perhaps only the unpredicted, intrusive noises significantly perturb urban tranquillity.

Schafer's perspective on noise extends beyond its negative associations. He views noise as indicative of significant changes in our auditory environment, changes often propelled by industrialization, urban expansion, and technological advancements. To Schafer, noise serves as a gauge of this sonic evolution. Similarly, Emily Thompson (2002) investigated the transformation of soundscapes in U.S. cities, demonstrating how shifting societal norms have influenced perceptions of noise and sound, especially in the face of rapid modernity and urbanization.

Dynamic of noise

The relationship between urban comfort and noise has long been a significant topic within the field of soundscape quality and urban studies. The impact of noise on human societies, recognized since ancient times, continues to be a pertinent issue as demonstrated through historical anecdotes, such as the sleep disturbances caused by noise as depicted in the Mesopotamian epic *Atrahasis* and the nuisances of church bells in 18th century England. These early accounts underscore the persistent challenge of noise pollution, which was further exacerbated by the Industrial Revolution and subsequent rapid urbanization (Kang, 2019).

The distinction between 'sound' and 'noise' transcends objective definitions, rooted instead in subjective perception and context (Thompson, 2017). Sounds that may be soothing to some individuals could be irritating to others, underscoring the complex nature of auditory experiences. This complexity is not only influenced by individual perceptions but also by cultural and societal norms. For instance, the vibrant cacophony of a marketplace might be embraced as the essence of community life in some cultures, whereas others might find it disruptively noisy.

Anthropological studies, such as those by Samuels et al. (2010), highlight the cultural relativity of sound, pointing out that different societies perceive and interpret sounds in varied ways, influenced by their unique cultural backgrounds. This insight into the subjective nature of sound and noise underscores the role of environmental sounds in shaping the human experience of spaces. While often regarded negatively as 'noise' within environmental psychology, there's a growing recognition of environmental sounds as mediators that can enhance the well-being of communities by integrating natural sounds into the urban fabric.

Despite this evolving understanding, research in this area faces challenges related to the mechanisms connecting environmental sounds with their effects on individuals, underscoring the need for more nuanced approaches in the study and design of urban environments. These approaches should account for the intricate relationship between sound, context, and perception to create urban spaces that foster well-being and quality of life.

3.1.3 Soundscape Influence on Activity, Diversity, and Inclusivity in Urban Spaces

Empirical research underscores the significant impact of ambient sounds on human cognition and behaviour. Mehta, Zhu, and Cheema (2012) delineated how particular ambient sounds—like the animated environment of a café or the steady rhythm of rainfall—can bolster concentration and boost productivity. Such revelations accentuate ambient sound's crucial role in striking a balance between overwhelming noise and unsettling quiet, thus establishing ideal working conditions. Drawing from this, it's evident that sound, with its fluid characteristics, possesses the capability to craft distinctive spaces, effortlessly traversing barriers to touch and engage individuals.

The ambiance of a location can also reveal its intended function and utility. A prime illustration of ambient sound's influence emerges in social contexts, such as a café. Jurafsky (2014) observes that the atmosphere in these establishments—marked by the faint chime of utensils, subdued chatter, and the gentle hum of coffee machines—crafts a milieu apt for introspection, productivity, or intimate dialogues. Such harmonious sounds craft a comfort cocoon, mirroring the café's commitment to relaxation and companionship. In parallel, spaces like public parks or botanical gardens serve as sanctuaries of natural soundscapes. The whispering leaves, birdsong, and the murmur of flowing streams aren't merely auditory treats; they have profound links to psychological health (Pheasant et al., 2008). These aural elements offer a refuge from urban chaos, nurturing relaxation, and thoughtful engagement. Yet, as Bull (2007) emphasizes, auditory preferences are highly personal. The onus is on urban planners to deftly manoeuvre this delicate equilibrium, ensuring an ambient resonance that appeals to a broad spectrum, without becoming intrusive for some.

In summary, the tapestry of ambient sounds in urban locales plays a pivotal role in sculpting both activities and experiences.

3.1.4 Types of Sounds and Their Significance

Sound, as an essential aspect of our sensory experience, deeply influences our perception, emotions, and behaviour. Whether in bustling cities or serene countryside, the sounds that surround us constantly shape our interactions with the environment. But how does one go about categorizing these myriad sounds that seem to blend seamlessly into the routine of our daily lives? How do we recognise auditory cue of a soundscape? To tackle these questions and provide a more structured understanding, this section reviews a range of sound types. My aim is to classify and unravel the unique characteristics of various sounds, offering insights into their significance and impact on the listener. This will help to categorise the sound and to better understand the meaning and each sound characteristic.

Machinery Sound

In the contemporary cityscape, machinery sounds, such as the hum of vehicles, the rhythmic thud of construction, and the distant drones of industry, have become ubiquitous. These mechanical sounds often represent progress, development, and modernity. However, constant exposure can also be linked with adverse health outcomes and cognitive disruptions (Goines and Hagler, 2007).

Natural sounds

Sound, as an essential aspect of our sensory experience, deeply influences our perception, emotions, and behaviour. Whether in bustling cities or serene countryside, the sounds that surround us constantly shape our interactions with the environment. But how does one go about categorizing these myriad sounds that seem to blend seamlessly into the tapestry of our daily lives? How do we discern the subtle nuances and meanings behind each auditory cue?

Social Sounds

Within the dynamic auditory environment of urban landscapes, social sounds emerge as pivotal markers of the community's pulse. The harmonious blend of conversations, musical rhythms, spontaneous laughter, vibrant street vendors, and spirited cultural events paints an intricate picture of urban liveliness and connectivity (Aletta et al., 2016). They're not just sounds; they are the heartbeat of collective urban life, signalling vibrancy and fostering a sense of belonging.

However, when these sounds are overly curated or manipulated, there's a risk of creating a sonic homogeneity – a uniformity that can mute the distinct and authentic auditory nuances that give each space its unique identity. The natural question that emerges then is, who decides which sounds dominate and which fade into the background?

Bijsterveld (2008) delves into this very conundrum, revealing the intricate relationship between political and economic structures and the orchestration of urban soundscapes. The sonic realm is not just about natural auditory occurrences; it is deeply intertwined with power dynamics and control. While dominant narratives often champion sounds, pushing them to the forefront, there are always subversive, often subtle, auditory counter-narratives that challenge the status quo. Voegelin (2010) further emphasizes this contrast, pointing to the broader societal tensions reflected in these sonic push-and-pull dynamics.

Thus, understanding urban soundscapes is not merely an auditory exercise but also an exploration into the heart of societal structures, power dynamics, and the constant negotiation between dominant and subversive voices.

Crafting Dynamic Soundscapes

Soundscapes are inherently dynamic, evolving based on various elements like the time of day, prevailing weather conditions, and the presence of different individuals. Given their fluid nature, it's crucial that their design encapsulates this variability. An ambiance that is perceived as inclusive at a particular moment might not retain the same character later. To address this, there's a need for ongoing community engagement. Feedback mechanisms and participatory approaches are essential in ensuring that the soundscape remains both reflective of and adaptable to its users' changing needs and preferences (Brown, Kang, & Gjestland, 2011).

Every sound we hear—from the gentle cooing of infants, the harsh screech of car brakes, the melodious chirping of birds, to the soft babble of a stream or the hum of conversation—marks an event unfolding. These auditory signals, whether they stem from rhythmic motion, abrupt collisions, or oscillating echoes, emerge from the very essence of movement and life. Particularly in urban settings, the mechanized buzz often shapes our auditory landscape, crafting the unique character of its soundscape. Listening, a fundamental human sense, fosters a deep bond with the lively tapestry of existence, encapsulating both human endeavours and the natural world. This engagement is less about the act of hearing and more about the perception of acoustic phenomena, with sounds acting as vessels that carry these events into our awareness. Unlike the visual landscape, which can remain unchanging and at times devoid of life, soundscapes inherently pulsate with activity, animated by the very forces that generate these sounds. This dynamic nature is especially pronounced in environments where vigilance against unseen forces is crucial for survival, making soundscapes a vital aspect of existence. According to Feld (1996), soundscapes, by their very nature, are teeming with life, constantly in flux, and embodying the vibrancy of the world around us.

3.2 Short Overview of Soundscape Research in Tehran

In the domain of Iranian urban studies, the exploration of sensorial qualities in public spaces often merges with themes such as noise mitigation, social engagement, cultural manifestations, and political discourse. Notably, the contributions of Pakzad (2006) in urban design offer critical insights into crafting meaningful public areas in Iran, stressing sensory experiences—including visual, auditory, and tactile elements—as fundamental to the enjoyment and functionality of these spaces.

Madanipour (1996) delivers an extensive examination of Tehran's urban evolution and its implications for public life. While his analysis details the city's physical metamorphosis and accompanying socio-political shifts, it lightly touches upon the sensory alterations within Tehran's public realms. The study indicates a transformation in visual and spatial characteristics, reflective of wider trends in urban development, yet stops short of delving into the sensorial dimension.

Discovering research specifically addressing Tehran's sensorial aspects proves challenging, with scant evidence of studies or practical recommendations focusing on sound beyond noise mitigation efforts, such as those noted by Sharamian and Larimian (2018). Research primarily zeroes in on noise levels associated with vehicular traffic, as seen in the work of civil engineer Vaziri (2002), who found a significant correlation between noise levels and various traffic parameters on highways.

This gap in the literature points to a broader observation: the assessment of Tehran's public spaces has not been thoroughly examined through a sensorial lens, particularly when compared to Western case studies. The importance of integrating sensory aspects into the planning and design of urban environments is evident, underscoring the necessity for public spaces that not only serve functional purposes but also enhance residents' quality of life. Adopting a sensorial approach in urban design highlights the need for holistic strategies that weave together physical structures, sensory experiences, and the socio-cultural fabric, thereby enriching the public sphere of Tehran.

3.3 Conclusion

The literature review has laid a foundational understanding, affirming the pivotal role of sound in shaping environmental perception. It has illuminated the intricate relationships between a place's soundscape and attributes such as identity, comfort, wellbeing, pleasurability, legibility, inclusivity, and diversity. A significant revelation from the research is that spatial components—encompassing activities, land uses, materials, and architecture—determine the unique soundscape character of various public spaces. Moreover, the city of Tehran emerges as a compelling subject for further exploration, given the noticeable scarcity of research in this specific context.

Delving into soundscapes transcends mere auditory analysis; it demands information about how individuals interact with these soundscapes, influenced by cultural backgrounds, personal preferences, and a spectrum of other factors which will be investigated. The journey of soundscape research spans a broad terrain, from dissecting classification of sonic environments to pinpointing crucial acoustic indicators and perceptual frameworks essential for advanced soundscape

assessments. Although the richness and potential inherent in soundscapes are widely recognized, the task ahead involves unravelling this potential further, particularly in how it contrasts with and transcends auditory disturbances.

In pursuing this research, I aim to build upon and test the theoretical constructs explored in the literature, particularly in the context of Tehran's urban environment. The goal is to contribute new insights to the field of soundscape studies, with a focus on enhancing urban design principles that foreground sound as a critical element of environmental perception and public space quality. This study seeks not only to fill existing knowledge gaps but also to offer practical implications for urban design and planning, particularly in cities like Tehran where the sonic dimension of public spaces remains underexplored.

4. Methodology

4.1 Introduction

The Methodology chapter of this research embarks on a comprehensive exploration into the intricate dynamics of urban public spaces, with a focal point on sonic perceptions and urban design. This inquiry adopts a multi-methods approach, primarily qualitative, to better understand the role of sound in how these spaces are experienced by their users. Such a methodological stance is predicated on the premise that qualitative insights offer a deeper, more textured understanding of the subjective experiences and perceptions that define the essence of urban spaces.

At the heart of this exploration are three carefully selected case studies: City Theatre Square, Boulevard Keshavarz, and Yousef Abad Stairs, all emblematic public spaces within the vibrant Capital city of Iran, Tehran. These sites have been chosen not only for their geographical and cultural significance but also for their diverse interactions and the varied perceptions they evoke amongst their users. This selection offers a rich, comparative analysis that seeks to uncover of urban public space utilization, sonically perception, and design.

Further enriching this qualitative inquiry is the review of methods section, which critically evaluates the diverse methodological tools and approaches employed in similar studies. This examination not only grounds the research in a solid methodological framework but also opens avenues for innovative methodological strategies tailored to the unique demands of studying sensorial aspect of urban spaces.

Central to this study's methodology are sensorial ethnography, particularly through sound recording and listening and in-situ interviews. This captures the real-time perceptions and experiential of those engaging with urban spaces. Such techniques are crucial for a deeper understanding of the soundscape and other sensory experiences, shedding light on how public spaces are perceived, lived in, and interacted with.

4.2 Research Design

In refining the exploration of the research design, this section articulates the methodological approach that underpins this study, directly informing the decisions made throughout the research process. This clarity is essential, ensuring that each aspect of this section—and those that follow—cohesively elucidates the methods employed to delve into the auditory dimensions of Tehran's urban public spaces. This inquiry is guided by questions seeking to understand the sonic qualities that define these areas, the influence of sound on perceptions of 'publicness,' the interplay between the city's unique soundscapes and the auditory experiences of its users, and the ways in which urban design can enhance these sonic attributes to improve the urban experience.

In social science research, there are traditionally two primary methodologies that have been distinguished: qualitative and quantitative. The qualitative method, chosen for this study, is distinguished by its in-depth exploration of subjective experiences, interpretations, and social patterns. This approach prioritizes a depth of understanding, seeking to uncover the meanings behind human behaviours and social phenomena (Creswell, 2013). It is particularly suited for revealing the complex layers of interaction between individuals and the sonic environment of Tehran's urban public spaces. Conversely, the quantitative method focuses on measurable, empirical data, employing statistical techniques to analyse and produce findings that are generalizable across various contexts (Johnson, Onwuegbuzie and Turner, 2007). However, the mixed methods approach, which combines qualitative and quantitative techniques, offers a comprehensive perspective but was not deemed necessary for the specific aims of this study.

The decision to employ a qualitative approach was made after careful consideration of the nature of the research questions, which demand a deep dive into the intricacies of human experiences and social dynamics within specific contexts. This methodology is adept at capturing the socio-cultural factors that influence individuals' perceptions and behaviours, crucial for examining how sound shapes the experience of 'publicness' in Tehran's urban spaces. Moreover, the qualitative approach's iterative nature—where data collection and analysis proceed hand in hand—affords the flexibility needed to adapt to emerging insights, a critical feature for thoroughly

exploring the complex relationship between Tehran's unique soundscapes and the auditory experiences of its residents, workers, and visitors.

This approach yields detailed descriptions of people's experiences, thoughts, and environments, offering a comprehensive view that informs deeper insights and more empathetic understandings. Such richness is essential for analysing and thoughtfully enhancing the sonic attributes of Tehran's public spaces from an urban design perspective. The subsequent sections will expand on this methodological choice, detailing how it has shaped the research design, data collection, and analysis processes. This expansion will illuminate the alignment between the research questions and the selected methodology, elucidating the rationale behind each methodological decision and demonstrating how these choices collectively work to address the intricate dynamics of sound in urban public spaces.

4.2.1 Qualitative Research Approach

The methodology of this research is grounded in a qualitative approach, chosen to comprehensively address the intricate nature of sensorial qualities in public spaces.

Historically, the origins of social science research were heavily influenced by quantitative methodologies. Disciplines, especially in the early stages, were deeply rooted in statistical and empirical analyses, seeking objectivity and generalizable results. This trend was especially pronounced in areas such as psychology and sociology. However, as the scope and objectives of social science research evolved, there was a noticeable shift towards qualitative methodologies, particularly in disciplines like anthropology, where the richness of human experiences, cultural nuances, and local practices demanded more interpretive, detailed, and contextual analysis. This change in direction is often referred to as the 'qualitative turn,' and it was especially significant in human geography (Cloke, Philo, & Sadler, 1991).

While quantitative approaches were foundational, the 'qualitative turn' highlighted the inherent complexities of human experiences that couldn't be captured through numbers alone. Environment disciplines, despite not being initially rooted in qualitative traditions, found inspiration in the depth and richness of qualitative research from disciplines like anthropology and sociology. Over time, this appreciation translated into

the adoption and adaptation of qualitative methods to understand urban dynamics, built environments, and human interactions within these spaces.

In advocating for the utilization of qualitative approaches within the realm of sociology and urban studies, several seminal works have laid a foundational groundwork, demonstrating the rich potential these methodologies hold. These important works, though diverse in their contexts and themes, are united to engage with their subjects, to show the lived experiences of individuals, and to craft narratives that reveal dimensions of perception and society that statistics alone could not elucidate.

Among these influential works, "City of Quartz: Excavating the Future in Los Angeles" by Mike Davis (1990) stands out for its critical exploration of Los Angeles, offering a compelling narrative on the city's socio-economic divides and urban landscape. Herbert Gans's "Urban Villagers" (1982) provides an in-depth look at the complex social fabric of urban neighbourhoods, emphasizing the significance of community within the urban setting. Joel Garreau's "Edge City: Life on the New Frontier" (1991) delves into the emergence of suburban business centres, shedding light on the evolving nature of urban life. Jane Jacobs's seminal "The Death and Life of Great American Cities" (1961) critically examines urban planning and community practices, advocating for vibrant, diverse, and densely populated urban environments. William Whyte's works, including "Street Corner Society: The Social Structure of an Italian Slum" (1943), "Learning from the Field: A Guide from Experience" (1984), and "The Social Life of Small Urban Spaces" (1980), collectively offer rich, empirical insights into the dynamics of social interactions within specific urban contexts.

These research, through their depth and insight, have significantly influenced attitudes and methodological approaches in planning and urban studies research. They underscore the invaluable contribution of qualitative inquiry to the disciplines, as noted by Dandekar (2005). Their collective legacy not only enriches our understanding of urban phenomena but also emphasizes the critical role of narrative, experience, and deep immersion in the study of urban spaces and societies.

Moreover, A qualitative method is particularly apt for examining the soundscape and the multifaceted emotions and perceptions it evokes in humans. As Schafer (1977) highlighted, soundscapes involve not just objective measurements but also the deeply subjective experiences and interpretations of individuals. Such experiences transcend

mere numbers and decibels; they encompass layers of human responses, which often elude quantitative metrics.

Moreover, a nuanced understanding of public spaces necessitates a contextual approach. Spaces are not merely physical entities but are imbued with cultural, historical, and social significance. As Lefebvre (1991) posited, every space is produced and shaped by intricate social relations and histories. Such dimensions, including the personal memories associated with a space, can't be adequately captured by quantitative metrics alone. A qualitative approach, therefore, is vital to unravel these contextual layers and offer a holistic understanding.

Lastly, while the primary focus of this research is on auditory experiences, it is crucial to recognise the interconnectedness of the senses. As Pallasmaa (2005) argued, architecture and urban spaces are experienced not in isolation but as a symphony of sensory stimuli. By employing a qualitative methodology, this research will capture this multisensory interplay, even as it homes in on the auditory dimension of public spaces in Tehran.

4.2.2 Multi method approach

Considering the interdisciplinary nature of the research, a multi-method approach is required. This strategy aims to bridge gaps between disciplines and triangulate research findings as suggested by Patton (1999). This approach requires using multiple qualitative methods and subsequently different data sources to develop a comprehensive understanding of the phenomena of sonic experience in urban design. Saunders et al. (2003) highlight the merits of employing a multi-method research. Primarily, using multiple methods offers the advantage of generating diverse results tailored to various research objectives, ensuring comprehensive coverage of pertinent issues. Additionally, it provides a mechanism to validate the interpretation of the data, ensuring that the findings truly reflect the underlying meanings and insights.

In qualitative realms, standard data collection generally includes observation, unstructured interviews, and participatory fieldwork. This study requires a combination of standard and innovative methods of data collection including but not limited to observational and interviewing methods, focusing on capturing rich narratives and

event sequences as they naturally occur. The aim is to unearth deeper meanings and foster theoretical insights from the gathered data.

4.2.3 Case study approach

Within the field of urban design research, the case study approach is instrumental for an in-depth exploration of complex phenomena in real-life contexts. The rationale for employing a case study approach stems from the necessity to comprehend phenomena within their real-life context, particularly when the boundaries between context and phenomenon are not clear (Baxter and Jack, 2008). The rationale for selecting a case study method aligns with Yin's (2009) assertion that case studies are particularly pertinent when addressing 'how' and 'why' questions, as they allow an intensive analysis of contemporary events within their real-life context.

The methodological choice for this study is firmly rooted in the tradition of case study research, which offers a robust framework for examining the interplay between urban spaces and their acoustic environments. As such, the chosen neighbourhoods and public spaces serve as bounded systems through which the interrelation of sound and space is observed and analysed. The intricate details of these relationships are often lost in broader survey-based or experimental research methods and laboratory experiments, which is why a case study approach is particularly suited to the aims of this study.

Case studies are uniquely positioned to address the intricacies of urban design research, where context plays a pivotal role in shaping experiences (Flyvbjerg, 2006). By examining the acoustic environments of Tehran's urban spaces in depth, the case study method facilitates a nuanced appreciation of how urban design interventions can foster harmonious soundscapes. Such contextual sensitivity is crucial in crafting design strategies that are responsive to the unique cultural and sensory tapestry of the city (Flyvbjerg, 2006). It affords a richness of data that is obtained from both qualitative inputs, such as in depth interviews and observations, and quantitative measures, like sound level measurements. The triangulation of these different methods and data their gathered enhances the credibility of the research findings, providing a comprehensive understanding of the case at hand. This triangulation

enhances the credibility of the research findings, providing a comprehensive understanding of the case at hand.

To enhance the depth of this study within the qualitative research model, a deliberate decision was made to focus on multiple sites within a specific district of Tehran. Flyvbjerg (2006) suggested a single case study approach, especially in qualitative research, for its ability to facilitate a profound depth of knowledge about the phenomena under investigation. Embracing this guidance, this research narrows its geographical focus to Tehran's District 6 while simultaneously opting to investigate multiple sites within this area. This methodological choice aims to enrich the study's insight into the urban soundscape by combining the depth of understanding that comes from focusing on a single district with the breadth that multiple sites offer. This approach allows for a more exploration of the sonic qualities and auditory experiences across different public spaces within the same urban fabric, providing a diversified yet detailed perspective on how soundscapes influence and are influenced by urban design and public life in Tehran.

In implementing the case study approach, this research is guided by the protocols established by Robert K. Yin, which include defining research questions, determining the unit of analysis, and linking data to propositions (Yin, 2009). For this study, the research questions have been articulated to focus the inquiry on understanding the dominant sounds within Tehran's urban environment, the residents' perception of their acoustic environment, and the influence of urban design on the soundscape. By adhering to Yin's methodological framework and incorporating the insights of Flyvbjerg, this study aims to achieve a comprehensive understanding of the auditory dimensions that shape public space in Tehran, specifically within the context of District 6th. This tailored approach ensures a focused yet rich exploration of the complex interplay between urban design, sound, and the lived experiences of city dwellers.

The unit of analysis in this context is twofold, the physical urban spaces being studied and the community of users within these spaces. This dual focus ensures that both the environmental factors and the human factors that contribute to the urban soundscape are thoroughly examined. Data collection is hence designed to create a methodology as robust as possible to cover the multiple dimensions of urban sound, from its physical attributes to its perceptual impacts on residents and visitors.

4.3 Case Study Site: Tehran

Tehran, the capital of Iran, epitomizes the vibrancy and complexity inherent in major metropolitan centres. It serves as a critical node for a range of significant events that span cultural, political, and social realms, contributing to its dynamic character as documented by Saeidi (2005). The city's demographic complexity has been further augmented by extensive migrations, resulting in a densification of its populace and a concomitant intensification of urban vibrancy. These demographic shifts have introduced a pluralism of cultural influences, which are discernible in the city's eclectic soundscape, architectural variety, and the fabric of urban life.

Tehran's significance in the field of urban studies is complex, reflecting its role as a microcosm of the complexities of contemporary urban centres. Its identity is profoundly dichotomous, situated at the juncture of historical reverence and progressive aspirations, which provides an instructive case for analysing the impact of rapid modernization on urban form and function. The city's demographics are marked by a confluence of diverse populations, each bringing a unique cultural, ethnic, and social background, creating a mosaic of human experience within its confines (Doe and Rahman, 2010).

Further adding to its research value are the multiple functions Tehran serves, functioning simultaneously as a political epicentre, economic powerhouse, cultural heart, and social node. The interplay of these roles' positions Tehran as an exemplary model for studying urban functionality and its evolution (Smith, 2012). The city's vibrancy is another aspect of note; its dynamic street life and public spaces are teeming with activity, providing empirical evidence for the vitality that characterizes successful urban environments (Brown, 2016). The multiplicity of these backgrounds enriches the research potential of Tehran, offering varied perspectives on urban development and social dynamics.

Moreover, the 'fabric' of the city is not monolithic; it is a patchwork of different urban designs reflecting the various phases of its growth and transformation. The juxtaposition of traditional bazaars with modern shopping malls, narrow alleys with wide boulevards, and private homes with high-rise apartments offers a physical narrative of Tehran's historical 'ups and downs' through different eras (Karimi, 2014).

This varied urban fabric allows for an in-depth exploration of how different architectural styles and planning approaches affect urban life and residents' experiences of their city. Tehran's distinctive urban morphology, characterized by its variegated landscape and architectural heterogeneity, affords scholars a unique research opportunity to interrogate the interplay among sonic environments, spatial dynamics, and societal interactions.

These characteristics of Tehran's physical geography and built environment are critical in influencing its overall soundscape, rendering it an excellent case study for soundscape analysis. Ataee's (2014) findings corroborate this, suggesting that Tehran's soundscape is as much a product of its physicality as it is of the cultural and social practices of its inhabitants. The resultant acoustic profile thus emerges not only from topographic and built-form conditions but also from the dynamic human activities that define urban life in Tehran. Studies of this nature can yield insights into how urban planning and design influence, and are influenced by, the auditory experiences of city dwellers, contributing to a broader understanding of urban soundscapes as sensorial experiences deeply embedded in the context of place (Ataee, 2014).

Lastly, Tehran's resilience through historical fluctuations, economic booms and downturns, political stability, and upheaval adds another layer to its academic allure. Researchers can examine how these temporal shifts influence urban planning and policymaking, with particular emphasis on how the city has adapted to environmental challenges, such as noise pollution and air quality concerns (Madanipour, 1998; Ghafouri, 2020).

The inclusion of Tehran as a case study is instrumental in advancing the research objectives that pertain to elucidating the city's distinctive challenges. These challenges are particularly manifested in the sensory dimensions of its public spaces. By examining Tehran's unique interplay of sensory stimuli within these areas, the study aims to shed light on how urban design can shape, and enhance, the experiential quality of public space using sonical elements. This case study approach not only provides a concentrated view of Tehran's specific conditions but also contributes to the general discourse on sensorial urbanism. It offers valuable insights into the methods through which public spaces can be assessed to cater to the sensory needs

of urban populations, thereby improving urban liveability and fostering engaging social environments.

4.3.1 6th District in City of Tehran

Within the setting of Tehran's complex urban context, the research focused on District 6, which is home to significant educational, cultural, residential, and political landmarks. Enghelab and Yousef Abad, the two 6th District neighbourhoods (Figure 2) chosen for this study, are microcosms of Tehran's greater urban fabric, exhibiting a blend of historical background and modernism, substantial public spaces, diverse social fabrics, and a cacophony of urban sounds.

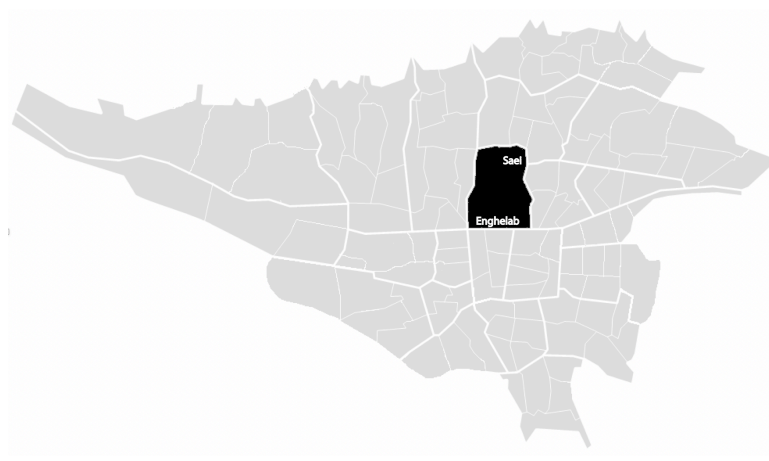


Figure 2 Location of neighbourhoods on the map of Tehran

The selected neighbourhoods within this district offer contrasting narratives and insights, serving as microcosms for the study's broader investigation into urban sensorial qualities. Yousef Abad neighbourhood, adjacent to Saei Park, is predominantly residential with an informal public space that has evolved organically between the interstices of alleys and void spaces. The character of Yousef Abad has been shaped over time by the local community, lending it a unique identity that is a product of gradual, resident-driven development.

On the other hand, the Enghelab neighbourhood boasts a more formal urban arrangement, embodying a rich cultural and political history that dates to the early developmental phases of Tehran. It holds a central position within the city's layout, with Theatre City Square and Keshavarz Boulevard marking it as an epicentre of urban

vitality. Enghelab's prominence as a cultural hub—comprising various theatres, universities, and political institutions—naturally infuses the area with a multiplicity of auditory stimuli reflective of its social and political significance.

By focusing on these two neighbourhoods, this study endeavours to map out the acoustic footprint shaped by Tehran's diverse urban conditions, exploring how soundscapes vary from the bustling commercial areas to the more tranquil residential zones. Methodologically, this inclusion entails a deeper exploration of a range of urban characteristics such as public space typologies, pedestrian, and car use, and urban greenery, and how they shape the auditory experience.

4.3.2 Yousef Abad Stairs-Saei neighbourhood: a quiet and green lifestyle

In a city that is known for its relentless traffic and heavy smoke, Yousef Abad neighbourhood is perceived as an oasis. Starting from its central street of Fatemi, the district expands from north to south and ends in Abshar street. This green district has been especially popular in recent years, because of its unique characteristics: it is lush, placid, traffic-less, cosy, historical, and vivid. Yousef Abad is limited to Kordestan Highway and Amir Abad Street from the west, Fatemi Street from the south, Abshar street and Resalat Highway from the north, and Valiasr Street from the east.

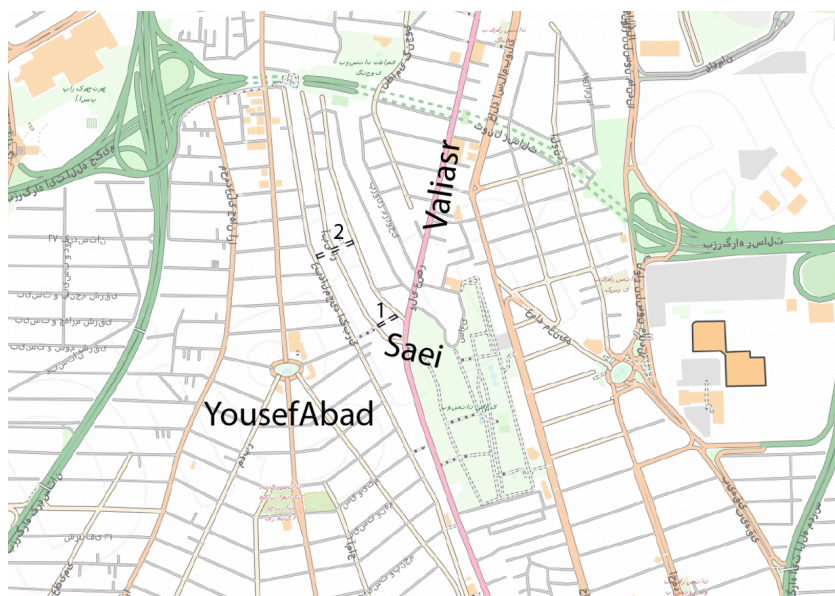


Figure 3 Location of Yousef Abad Stairs



Images: Yousef Abad stairs

Running parallel to Yousef Abad, Valiasr Street offers a monumental contrast. Notable as the longest street in the Middle East and one of the world's lengthiest at 17.3 kilometers. Valiasr Street is typified by its bustling nature and commercial vibrancy, forming a central axis that delineates the eastern and western segments of Tehran. The contrast between Yousef Abad's residential quietude and Valiasr Street's commercial dynamism is bridged by what is locally referred to as 'pelle-hay-e Yousef Abad' (the stairs of Yousef Abad). These stairways function as conduits, offering passageways that interweave the private residential fabric of Yousef Abad with the public commercial expanse of Valiasr, representing physical and symbolic transitions between distinct urban experiences.

The dichotomy between Yousef Abad and Valiasr Street encapsulates the broader urban narrative of Tehran, highlighting the spatial and functional diversity that defines its cityscape. The 'stairs of Yousef Abad,' in this regard, are not merely infrastructural elements but are emblematic of the city's layered urban identity, facilitating a juxtaposition of lifestyles within a densely woven environment.

In examining the staircases of Yousef Abad, it is essential to analyze the distinct features of the five staircases under consideration. The texture on each step, resulting from extensive use over time, indicates a history of frequent use for both urgent morning commutes and relaxed evening walks.

This research analysis specifically focuses on the Fifth Staircase due to its complex route. It weaves through two distinct alleys, with each bend presenting a unique aspect of daily life in Tehran. These staircases serve not merely as a physical means of movement and connection but also as a conduit for observing the dynamic social fabric of the neighbourhood. This is illustrated by the presence of local phenomena such as the aroma of Sangak bread emanating from bakeries and the socialising sounds emerging from buildings, which contribute to the character and atmosphere of the area. Yousef Abad Stairs are more than mere structures; they are silent witnesses to the ever-evolving narrative of Tehran, a city where tradition and modernity coalesce in the most unexpected ways.

4.3.3 Enghelab Neighbourhood: A Socio-Cultural and Political Microcosm of Tehran

The Enghelab neighbourhood in Tehran, evolving from a confluence of historical, geographical, social, spatial, and political factors, has long stood as a significant area both for its residents and the city at large.

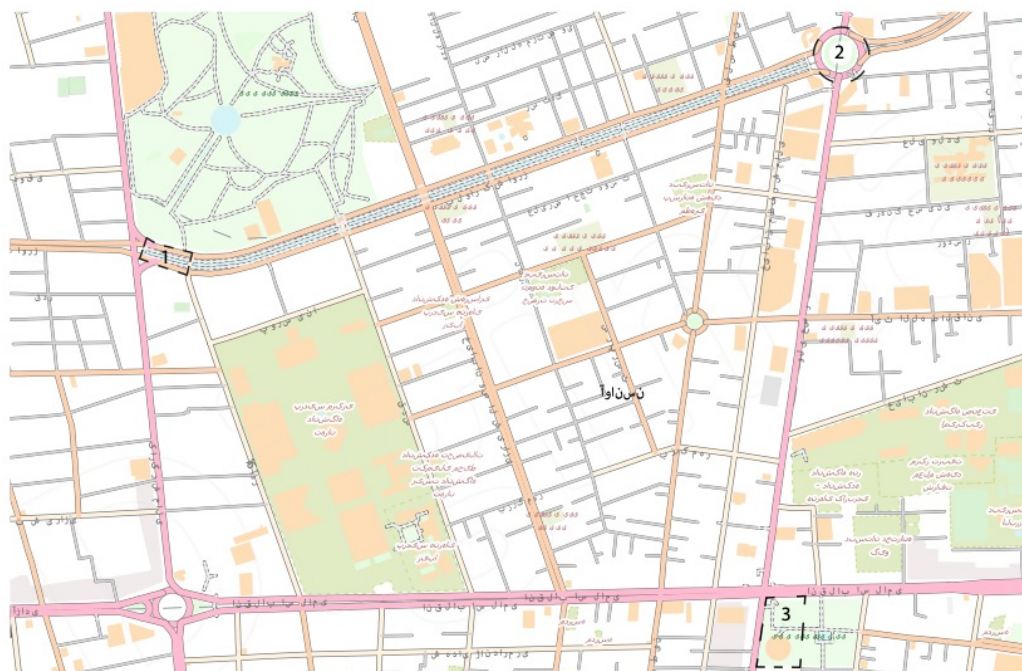
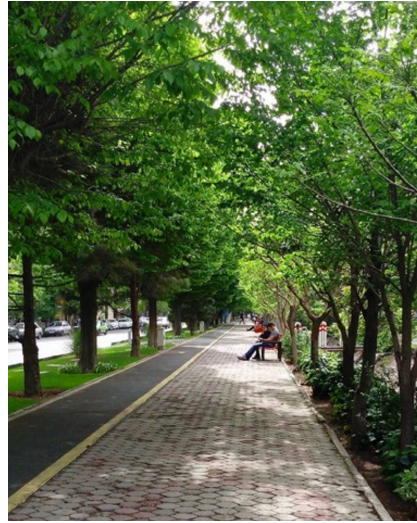


Figure 4 Enghelab Case Studies Locations



Images left: City Theatre Square. Right: Keshavarz Boulevard

This neighbourhood was part of ancient Tehran before any plans. Originating in the Qajar dynasty, specifically the Naseri period (1789-1925), this neighbourhood is steeped in history, evidenced by its many historic houses and gardens.

It gained prominence during the Pahlavi dynasty's modernization efforts starting in 1925 under Reza Shah, leading to substantial development and construction. The neighbourhood's allure, initially due to favourable weather and lush greenery, grew as Tehran expanded, swelling from this central location.

Demographically, Enghelab is home to more than 251,384 residents, accounting for 2.9% of Tehran's total population, spread across 2,137 hectares. The population growth has been notable, increasing from 13,784 in 1996 to 30,553 in 2006, with a near-equal gender distribution and a high number of households (Mashayekhi, 2009). The architectural evolution in Enghelab has been remarkable, blending Western modernization influences with Persian traditions, as seen in the lancet arches of the University of Tehran (founded in 1934) and Amir Kabir University of Technology (founded in 1956). This mix of styles is indicative of the neighbourhood's broader cultural and political significance, which has been especially pronounced since the 1979 Islamic Revolution. The renaming of its main street from Reza Shah Street to

Enghelab (Revolution) Street reflects this change, symbolizing the area's ongoing role in shaping Iran's political, social, and cultural narrative (Tashakor, 2014, my translation; Ehsani, 2015).

Enghelab's sociopolitical import is further underscored by its cultural institutions, including the City Theatre (built between 1960-1972) in district 6th, and its status as a residential area for artists and writers. Housing 30% of the city's governmental, private, and significant buildings, it represents a vibrant urban tapestry (Khatam, 2016).

Furthermore, the neighbourhood exemplifies Tehran's socio-spatial divides, with the northern part associated with wealthier classes and the southern part with poorer socio-economic groups (Mashayekhi, 2009; Asayesh, 2014). This dichotomy not only reflects the city's north-south class division but also serves as a focal point for class differentiation and socio-political movements (Tehrani, 2015).

Two public spaces within this neighbourhood – Keshavarz Boulevard, and City Theatre Square – have been selected for this research. Each, designed and built in different eras and featuring distinct physical elements and functions, presents an opportunity to analyse varying user interactions and design qualities, thus offering insights into the neighbourhood's unique character and development trajectory.

In the following section, these public spaces will be examined in detail, shedding light on their individual and collective contributions to the urban experience.

4.4 Review of methods for data collection

To investigate the sonic dimensions of public spaces, this study adopts a comprehensive methodological framework. This framework is designed to systematically explore the auditory experiences within these spaces, focusing on aspects such as ambient noise, soundscapes, and the impact of sound on the perception and use of urban areas

This was adopted from extensive literature review, aimed at shaping a robust theoretical base. It was complemented by a bespoke research design, geared towards guiding the empirical route of the study. Observational studies were conducted to accumulate empirical evidence, and interviews were arranged to collect in-depth insights and subjective experiences. The selection of these methods was a deliberate

scheme, calibrated to optimize relevance and efficacy while concurrently mitigating potential limitations that might impede the data collection process.

This methodological review is committed to a critical examination of each deployed method. It endeavours to appraise the assessment of these methods with the research objectives, simultaneously offering an analytical examination of their respective strengths and limitations. Such a distinctive evaluation is pivotal in ensuring the methodological robustness and the empirical integrity of the study, thus facilitating a comprehensive understanding of the interrelations between urban design, the qualities of public spaces, and their sonic attributes.

4.4.1 Documentary research methods

The documentary research method involves analysing documents that contain information relevant to the phenomenon under study (Bailey, 1994). It involves the analysis of documents, from private, public, or personal accounts, reflecting the diversity of their authors or sources (Payne and Payne, 2004). Ahmed (2010) posits that no single research method is universally superior, a perspective that applies to documentary research, known for both its strengths and weaknesses.

One of the key strengths of documentary methods is their capacity to document historical context and insights in a low cost and efficient manner. Their tangible nature facilitates cross verification, enhancing their reliability (Tight, 2019). Unlike human subjects, documents are impervious to the influence of the research process. However, Scott (1990) cautions about the evaluation of documents, emphasizing the importance of assessing their authenticity, credibility, representativeness, and meaning. These criteria are crucial in determining the method's effectiveness.

For researchers, understanding the origins, purposes, and target audiences of the documents is essential (Grix, 2001). Ensuring data authenticity, particularly in safeguarding against forgeries, is a significant responsibility. However, access to documents can be uneven, with certain official documents being classified and limited to specific groups (Scott, 1990, p. 14).

In the context of Tehran's public spaces, documentary research can provide a comprehensive understanding of historical, cultural, and social aspects. This includes analysing historical texts, urban planning records, architectural critiques, films, and

literature. Becker (2007) stresses the importance of incorporating diverse societal representations through movies, photos, maps, and literary files, in addition to traditional methods such as ethnography and statistical models. Xerez and Fonseca (2011) demonstrate the utility of photo archives in urban planning, revealing the impact of social networks on neighbourhood development.

Mogalakwe (2009) argues for the inclusion of literature reviews, often overlooked, in documentary research. They help in developing conceptual or theoretical frameworks for data analysis, providing fresh insights into social phenomena (Mogalakwe, 2006). In this study, documentary methods will be utilized to explore how the social and cultural contexts frame the sonic experiences in relation to the urban design of Tehran. Secondary data, including photos, personal diaries, and literature, will be pivotal in understanding the soundscape and usage of public spaces. This research also considers the role of sound in literature to comprehend the listening and preference culture of Tehran's residents.

Through this approach, the research aims to establish a comprehensive understanding of the sonic qualities of spaces and gather background information of the places and people of the spaces in analysis. This system was designed to establish a consensus on the sonic qualities of spaces and to gather comprehensive background and demographic information, crucial for understanding the cultural and spatial dynamics of neighbourhoods. To achieve this, the study analysed a curated selection of documents, including urban planning records related to the 6th district either photo, sound related documents but mostly related to the selected places which includes local government reports. These documents were accessed through public archives, and requests to municipal authority of District 6th. The analysis employed qualitative to extract themes related to sonic qualities and cultural dynamics.

4.4.2 Observational Methods

The second method that is adopted is observational techniques, mainly informed by the seminal works of Pink (2009), Whyte (1980) and Laurier (2009), to explore the nature of public spaces. Unlike documentary research, this methodology emphasizes real-time, in situ analysis, capturing nuances of space usage, activity types, and amenity utilization that pre-existing records may miss. It draws upon ethnography and

sociology, notably utilizing Whyte's behavioural mapping to understand activities, diversity and inclusivity within urban areas and Laurier's ethnomethodology to examine every day social interactions, thereby uncovering the dynamics of community and publicness.

Whyte's work in behavioural mapping, a basis in the Project for Public Spaces, focuses on understanding social life and activities within specific areas. This approach has been instrumental in revealing how urban facilities in a place are utilized. Similarly, Laurier's work in ethnomethodology, particularly his concept of public spaces as 'natural laboratories,' offers invaluable insights into the mundane aspects of social interactions. His detailed observations in everyday settings like cafes and streets reveal the subtleties of social order and community dynamics.

Place making is intrinsically connected to observational methodologies. Kevin Lynch (1960), a forerunner in the social usage approach, conducted extensive examinations of individuals' perceptions of their cities and spaces. His work highlights the profound implications such examinations hold for the redesign of urban areas. Central to the concept of place-making is the engagement of the public; without a comprehensive understanding of their needs and perspectives, transformative change remains elusive (Project for Public Spaces, 2000).

Jan Gehl (2010), in his diverse body of research, advocates a variety of observer methods including counting, mapping, photography, diary keeping, tracking, and test walks. These techniques are considered standard in place making endeavours, providing metrics for evaluating the success or failure of public spaces.

The research extends beyond traditional observational studies by incorporating sensory observation, particularly focusing on the sonic quality of public spaces. This nuanced approach allows for an immersive understanding of the soundscape, going beyond measurable aspects like volume to appreciate ambient sounds' contribution to a space's atmosphere. This approach aligns with Pink's sensory ethnography, which argues for the inclusion of the researcher's sensory experiences as data to achieve a deeper understanding of the cultural and social dynamics within spaces. By immersing themselves in the environment, researchers can capture the subtle nuances of sound that contribute to the overall atmosphere and character of urban spaces, such as the

ambient noise, the rhythm of pedestrian movement, and the soundscape's impact on social interactions and community life (Pink,2009).

The primary objective of this research is not just to observe but to gain an in-depth understanding of public spaces from multiple dimensions. This includes spatial and functional aspects, as well as social and sensory experiences (with a particular focus on the aural). Such an approach ensures a thorough understanding of how these spaces operate and are experienced by individuals. The methodology enables an exploration of how the design and use of public spaces influence human behaviour and perception, thereby contributing to the field of urban design and planning. The details of this approach, along with specific methodologies and analytical frameworks, will be elaborated in the following section of the thesis.

Sensory Observation and Sensory Ethnography

In the realm of urban design and ethnographic research, there is a critical need to transcend traditional observation techniques that predominantly leverage visual ethnography. This traditional focus on visual methods overlooks the rich potential of engaging other senses for data collection, particularly when analysing environmental features relevant to non-visual senses, such as auditory experiences.

The reliance on visual observation, as exemplified in the works of scholars like Whyte and Jan Gehl, who primarily employ vision to observe, count, and analyse people and activities, restricts our understanding of urban spaces to the visual spectrum. This approach omits the nuanced layers of experience provided by listening to and interpreting the environment, thereby underscoring a significant research gap in fully comprehending the sensory dimensions of public spaces.

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Sensory ethnography advances this conversation by highlighting the interconnectedness of sensory experiences as described by James Gibson (1966).

Gibson theorises that perceptual systems do not operate in isolation but are intertwined within a comprehensive system of bodily orientation, where looking, listening, and touching are integrated aspects of a singular activity: the organism's engagement with its environment. This perspective is foundational to advancing ethnographic research that embraces a multisensory approach, acknowledging that sensory experiences overlap and contribute collectively to our understanding of spaces.

The influence of Gibson's ideas on ethnography is manifest in the growing scholarly work across geography and anthropology. Researchers (Grasseni, 2004, 2011; Strang, 2005; Downey, 2007; Spinney, 2007) have integrated multisensory approaches into their studies. Their work exemplifies the growing recognition of the importance of a holistic sensory analysis in ethnographic research, moving beyond the visual to include the auditory, tactile, and other sensory dimensions.

Hence, in the exploration of place through the lens of sensory observation, digital audio recording emerges as a pivotal tool for capturing the experiential qualities of environments. Gallagher and Prior's advocacy for phonographic research methods marks a significant stride toward embracing sonic geography (2014). Phonography, distinct from broader sonic research, employs sound recording to delve into the multisensory complexities of environments, offering a method to access the nuanced, often intangible aspects of place that traditional research methods may overlook (Gallagher and Prior, 2014). Through their investigation in a Scottish coastal community, Gallagher and Prior (2014) illustrate how audio recordings can surface the local nuances and sensory dimensions of place. By capturing sounds deemed significant by community members, ranging from the mechanical rhythms of the harbour to the natural calls of seabirds and the ambient noise of the sea against the shore, they were able to document the unique sonic footprint that defines the locale. Such phonographic methods reveal the layers of meaning and emotional resonance embedded in everyday sounds, contributing to a richer understanding of place.

Similarly, the 'sound diary' method introduced by Duffy and Waitt (2013) demonstrates how sonic recording can probe into the affective and emotional landscapes of domestic spaces of Australian homes. Participants recorded the sounds of their daily lives, which were then discussed in follow-up interviews. This approach facilitated a

deep dive into the emotional responses elicited by familiar sounds, from the ecological reminders of rain and wildlife to the everyday hum of household machinery. By focusing on sound, Duffy and Waitt (2013) were able to unpack the intricate connections between individual subjectivities, home, and the broader environmental concerns, thus linking sonic experiences to the sustainability discourse.

In the context of urban environments and sensorial ethnography, scholars have endeavoured to unravel the complexities of the sound environment and its interconnections with various factors. For instance, Aletta et al. (2016) spearheaded a pivotal study in this domain, concentrating on the evaluation and quantification of soundscapes. Their methodology is a prime example of utilizing field observation for planning and sound research. They collected audio-visual data from 46 locations across England and China, using a Canon EOS 500D camera for visual information and a binaural headset connected to an Edirol R44 portable recorder for auditory data. This data was not only crucial for their field research but was also later used in the studio for participant interview, thereby adding an interactive and experiential dimension to their analysis. This comprehensive approach underlined the importance of subjective perception in evaluating acoustic environments, suggesting a shift towards a more human centred approach in soundscape evaluation.

Bild et al. (2018) used a mixed methods approach in their research, focusing on the influence of soundscapes on social behaviours in public spaces. Their study combined on-site data collection, including questionnaires and non-participant observation, with behavioural mapping, users, their activities, and the surrounding soundscapes.

Lastly, Lavia et al. (2018) explored the potential of soundscapes to enhance urban liveability through sound installations in outdoor locations in Brighton and Hove or London. Their research utilized a combined approach of behavioural observations, open-ended question interviews, and self-reported surveys, presented in a sequence to minimize the impact of rationalization on natural behavioural responses. This method acknowledges the limitations of traditional self-reporting techniques, as human responses to sound are often unconscious and context based. Lavia et al.'s approach, which includes non-participatory observational methods, provides an alternative that captures more authentic human responses to soundscapes, although acknowledging the challenges and costs involved in such methods.

Each of these studies, with their unique methodologies, highlights the complexity and innovative nature of soundscape research. They collectively underscore the emerging field of sensory ethnography and its importance in understanding urban soundscapes. These examples underscore the growing importance of digital recording technologies in sensory ethnography, particularly for understanding the complex interrelations between people and their environments. Not only do such technologies enable researchers to capture and analyse the sensory fabric of places, but they also pave the way for new insights into sustainability by highlighting how soundscapes influence perceptions and engagements with environmental issues. Through the lens of photography and sound diaries, the field is equipped to explore how sonic dimensions contribute to the making and experiencing of place, offering profound implications for environmental sustainability and the sensory study of habitats.

Considerations and Limitations

Johnson and Sackett (1998) critically discussed the limitations of observational methods, highlighting the potential for participant observation to yield inaccurately descriptive data in behavioural research. They contended that such data might not be representative of the culture under study, often reflecting the researcher's personal interests rather than objective cultural realities.

The scope of observation is inherently limited by the researcher's perceptual capabilities, as it primarily relies on visual recording of events. Dunstan (2005) and Caughey et al. (2001) recommend using standardized forms for recording activities, as these guide the observer's focus towards aspects most relevant to the research. In my forthcoming fieldwork, I am aware of the inherent biases that may arise from my social assumptions and plan to address these in the subsequent section.

Kawulich (2012) notes that observation is both time-consuming and constrained by the observer's presence, potentially leading to missed events. Consequently, data interpretation and selection remain subjective processes. Factors like time of day, week, and varying weather conditions can dramatically influence the use and experience of public spaces. I will also adopt a diary and record to control this effect. Ethical considerations, particularly regarding privacy and consent of observed individuals, are also paramount. To ensure ethical practices are embedded in this

research, the consent form and ethical consideration are considered, as carefully detailed in the ethics section.

Furthermore, a key aspect of the methodology is the conscious effort to minimize researcher bias. Recognising the inherent subjectivity in observational research, strategies are put in place to reduce this bias as much as possible. The researcher's presence in the field, along with their potential influence on the observations, is not only acknowledged but also critically evaluated and factored into the interpretation of the findings. This introspective aspect of the methodology ensures a more balanced and objective analysis.

However, it's also important to acknowledge the time-consuming nature of such detailed observational methods. The process requires a significant investment of time and resources, and there are inherent limitations, especially in terms of engaging with the users of the space being studied. The value of these observations within the broader context of the case study is carefully weighed, and their application is adapted accordingly. They may serve as a preliminary exploratory tool in the early stages, like pilot studies, or as the main method of data collection later.

To address the above issues and to avoid relying solely on one source of information for better validity and broader scope, especially since sensory data are intangible and harder to understand and assessed, I will employ complementary methods (a mix method approach), such as various types of interviewing methods, to gain deeper insights into participants' motivations and choices, which I will elaborate upon in the interview method section in more details. This approach aims to provide a more comprehensive understanding of the dynamics of public space utilization.

Procedures of Sensory Observation Selected in this Research

My research employs field observation as the primary tool, which is enhanced using behavioural mapping, sound description mapping, and sound listening and recording techniques. This approach is not limited to visual observation; it encompasses a multisensory perspective, where auditory perceptions play a crucial role. In addition to mapping, I will maintain a diary section alongside my map floor data collection to document observations and reflections in detail.

First step was initial site visits to selected sites in Tehran to gain a preliminary understanding of the area's soundscape and general ambiance. Take notes on observable activities, physical layout, and any significant sound sources (e.g., machinery, traffic, fountains, social sounds like public gatherings).

[illegible]

Behavior-Sensorial Mapping Data collection form

Location: Keshavnagar Boudhary
 Date: 2nd September - Monday
 Time: 11:30 AM

G.O.P.D.	Sex		Age		Activities		NO. OF VISITORS
	M	F	0-7	8-15	16-25	26-35	
1	3	2	5	1	2	2	1
2	4	1	1	2	1	1	1
3	2	2	1	1	1	1	1
4	2	2	1	1	1	1	1
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Types of sounds

Natural	-----
People	-----
Traffic	-----
Silence and quiet	-----
Transportation	-----
Construction	-----

Sound event

Temporality	●
Sound Pressure level	—
Sound source location	→
Sound mark	*

Sounds:

water splash	10/10
traffic	10/10
human (conversation)	8/10
motorcycles/Bike	8/10
Horns	10/10
footsteps	5/10

People who use the space, families couples, singles (old Men, young women/men), friends (youth). No children observed. Activities are massively relaxation {watering, walking, eating, playing on phone.

- row of trees
- Benches
- lighting is good & provided
- water fountain is removed (No water sound from middle)

In the data collection process, the duration and scheduling of observations were pivotal. Initially, I planned a preliminary observational period with a duration of four months, but I remained adaptable, extending this period by two months during my second field trip.

Choose strategic time and points within each public space for comprehensive observation. These points should offer a clear view of the area's main activities and sound sources.

To ensure a structured yet adaptable approach for systematic data collection, I chose to conduct observations three days a week: Fridays, Saturdays, and Monday, over a total period of four months. The choice of days was strategic. The Fridays selected included the national holiday in Iranian culture, offering a unique perspective on public space usage; and the selected Saturdays, included the first working day of the week, providing insights into a different pattern of space utilization; Monday were random week day, to observe the contrast with weekend activities. Each public space was observed on different days of the week to maximise the variety of events and observations captured. This rotation of days was crucial in ensuring a diverse and comprehensive collection of data from each location.

The duration of each observation session varied from one to three hours. This range was determined based on the time constraints imposed by the number of case studies and the need to balance depth with breadth in data collection. During these sessions, my activities included listening, noting, recording, and mapping the dynamics of the public spaces. This involved sitting, walking, and pausing to capture activities, complemented by audio recordings and photographs.

Over the four-month period, extending from July to October, I undertook approximately 20 hours of observation and sound recording across each of the three locations. The recordings were strategically scheduled in two time slots: either between 10:00 a.m. and 1:00 p.m. or between 2:00 p.m. and 5:00 p.m. This schedule, detailed in Figure 6, was designed to capture a wide range of observations at different times and on different days.

This structured, yet flexible, approach was instrumental in achieving theoretical saturation - the point at which no new data emerge, and additional observation does not yield further insights into my research questions. This methodology guided the

overall duration and approach of my observation, ensuring a rich and varied collection of data.

Week 1	Friday	Saturday	Monday
Keshavarz	3 hours Spatial Data collection (Observation) Sound Recordings, and audio-spatial data collection. Interviews		
Theatre Square		3 hours Spatial Data collection (Observation) Sound Recordings, and audio-spatial data collection. /Interviews	
Yousef Abad Stairs			3 hours Spatial Data collection (Observation) Sound Recordings, and audio-spatial data collection. /Interviews
Week 2	Friday	Saturday	Tuesday
Keshavarz		3 hours	

		Sound/Spatial Recordings Interviews	
Theatre Square			3 hours Sound/Spatial Recordings Interviews
Yousef Abad Stairs	3 hours Sound/Spatial Recordings Interviews		
Week 3	Friday	Saturday	Monday
Keshavarz			3 hours Sound/Spatial Recordings Interviews
Theatre Square	3 hours Sound/Spatial Recordings Interviews		
Yousef Abad Stairs		3 hours Sound/Spatial Recordings Interviews	

Figure 6 The timetable for the field trip, three weeks out of 20 weeks that I elaborate in Analysis section.

Recording Tools

In this study, a blend of traditional observational tools and sensory-specific instruments is employed to gather comprehensive data, reflecting the dynamic interaction between the physical environment and its users.

Traditional tools include notetaking, which allows for the real-time documentation of environmental details, user behaviours, interactions, and any significant patterns or

events. Photography serves to document specific moments, spatial arrangements, and interactions that are pivotal to the study. Additionally, behavioural mapping is employed to graphically represent the movements and activities of people within the space, helping to identify usage patterns and how individuals interact with their environment. These methods are considered traditional due to their long-standing application in various research fields, offering a foundational means for observational studies.

Within the scope of sensory-specific instruments, the focus on auditory data collection through sound diaries and sound recorders emerged in the data collection period. Sound diaries, a qualitative tool, empower this study to document each case study auditory experiences over a period, description of the daily sounds that shape each space. This method, as highlighted in studies by Duffy and Waitt (2013), Sound recorders complement the sound diaries, accurately archiving the acoustic properties of an environment. These devices play a crucial role in gathering precise data on sound quality, intensity, and temporal variations, thus facilitating an in-depth analysis of the soundscape's influence on user experience with unmatched detail and accuracy, beyond what mere observation can offer. Moreover, sound recordings are instrumental for archiving purposes, allowing for the preservation of auditory data over time. They also present the data in a unique format within this thesis, enabling readers to review the auditory information in a manner akin to how photographs or graphical representations provide visual insights. This dual functionality not only enriches the methodological toolbox of the researcher but also enhances the thesis's ability to convey complex sensory experiences to the reader, thereby offering a comprehensive and multi-dimensional understanding of the studied environment. The integration of sound diaries and sound recorders into research methodologies underscores the significance of auditory elements in understanding the sensory dimensions of public spaces.

Audio Recording Device

A crucial component for sensory data collection is the audio recording device. To capture the soundscape of public spaces and provide insights into the auditory experience of users, this study utilizes sound recording technology. This is in line with

Schafer's concept of the "soundscape" (Schafer, 1977), where audio recordings serve as an auditory lens for understanding the character and ambiance of urban spaces. During observations, I used a sound recorder to capture sounds while simultaneously noting the primary sound sources and describing the soundscape of the specific public space.

Key considerations in selecting the right device included high-quality sound capture, ease of carrying, long battery life, and ample data storage for extended recordings. The Zoom H4n Pro Handy Recorder (Figure 7) was selected for its high-resolution recording capabilities, up to 24-bit/96kHz, which are more than sufficient for capturing detailed soundscapes. It is compact and portable, allowing for discreet recording in public spaces. Additionally, it supports SD/SDHC cards for ample storage and easy transfer of audio files to a computer. On days when carrying the recorder was not feasible, I used an iPhone 11 sound recorder.

The use of the Zoom H4n Pro has enabled the capture of a rich auditory profile of public spaces, integral for assessing their qualities and understanding the sensory experiences they offer. This data is then analysed in conjunction with other sensory and observational data to provide a comprehensive understanding of the space.



Figure 7 Zoom H4n

Summary of the procedure of sound recording

The initial phase of the sound recording process, undertaken in the first week of data collection, involved a preliminary spatial analysis of the site to determine optimal recording locations. Recognizing the importance of immersing myself in the environment, I engaged in sound diaries to identify areas with significant auditory interest. This spatial assessment was twofold: firstly, to choose spots where I could

remain stationary and record ambient sounds effectively, and secondly, to allow the sounds themselves to guide me to areas of spatial and acoustic relevance.

In the case of City Theatre Square, selecting recording locations posed a challenge due to the area's size and the diversity of its spatial and sensory elements. Here, the approach required a careful balance between being stationary in pre-determined spots and remaining open to moving towards emerging sound sources that warranted further investigation.

Conversely, in Keshavarz Boulevard, the process was more straightforward. I selected two fixed spots for recording, based on prior spatial analysis and the relative uniformity of soundscapes. Similarly, at Yousef Abad Stairs, despite the environment's structured and consistent nature, I maintained flexibility to relocate recording equipment in response to unexpected events or sounds highlighted during interviews, underscoring a bottom-up, adaptive data collection strategy.

The recorder was activated when I arrive and settled for recording, and I usually record for between 1 minutes to 5 minutes. Occasionally during my site visits when predetermined auditory cues or significant ambient sounds were present, ensuring a focus on relevant acoustic data. Recording sessions varied in duration, depending on the evolving soundscape and specific incidents capturing my auditory attention. Primarily, I remained stationary at chosen recording spots to capture consistent soundscapes. However, mobility was embraced when following sound cues to areas of interest or reacting to spontaneous events, thereby adopting a dynamic approach to sound recording. After collecting the audio data, I meticulously reviewed and edited the recordings to isolate pertinent sound bites. This editing process was guided by both the initial objectives of the research and new insights gained during fieldwork.

Photography

Photography is another vital research tool employed in this thesis. As Collier (1998) suggests, effective observation requires appropriate tools. Photographs taken during fieldwork support and visually represent the observations made. For convenience and the ability to respond quickly during interviews and other activities, I use my iPhone for photography because it is discrete. These photographs help describe and analyse

the data in this thesis and archive more events. I use to utilise photo to support my audio data and in presenting the spatial elements. Therefore, the photography is not my major tool in the data collection process.

Field Notes and Maps

Field notes and maps are important in capturing the complex, multisensory experiences of public spaces. This approach goes beyond audio-visual documentation to include the sensory environment and experiences, such as ambient atmosphere and reactions to sounds. Following the methodologies recommended by Emerson et al. (1995), this research involves detailed note-making and mapping.

A structured note-making system, evolving to include quick field scrawls and later expanded into comprehensive field notes, was developed. Each note is cross-referenced with corresponding audio recordings and visual data to create a cohesive narrative for each observation.

In mapping, the data from field notes and direct observations are converted into visual maps. This process starts with creating a detailed map of the setting, as advocated by Merriam (1998), including physical dimensions and the arrangement of elements within the space. The mapping methodology incorporates Whyte's principles of empirical observation and human-centric space analysis, focusing on elements like sound sources and design features. Variables such as the number of people, soundscapes, and types of activities are meticulously documented. Behavioural mapping, as guided by Whyte's principles, provides a robust and insightful methodology for analysing the use and design of public spaces.

Summary

This section has detailed the observational methods and tools employed in this research, emphasizing a multi-method approach to reduce limitations and broaden the scope of the study. In the next section, I will elaborate on the interview methods that complement the observational tools in this research, further enhancing our understanding and answering the research questions.

4.4.3 Interview methods: Exploring Attitudes and Perceptions

Interviews are instrumental in understanding attitudes, perceptions, and motivations, which are not always apparent from mere observation of behaviour. Unlike observation, various interview methods yield distinct types of results, each suited to specific research objectives.

Payne and Payne (2004) categorize these into informal/formal interviews, guided interviews, and questionnaires or surveys.

Informal interviews resemble everyday conversations, lacking a predefined structure or purpose. In contrast, guided interviews, as Payne and Payne (2004) describe, are structured yet flexible, allowing for the exploration of specific topics and issues relevant to the researcher's aims. Although the questions are standardized, they permit additional queries as needed, facilitating comparison of responses. Questionnaires, as Jones (2008) notes, are structured interviews with well-phrased, unchangeable questions, usually seeking precise answers, often through multiple-choice formats. This structure facilitates an easier analysis of responses, providing clear, quantifiable data.

In sensory ethnography, particularly in studying the relationship between space, sonic quality, and users, interviews transcend traditional formats. These methods involve multi-sensory engagement—watching, listening, tasting, smelling—to collect data on sonic events and their impact on public space identity and perception.

Previous research often relied on laboratory settings or recorded soundscapes for interviews. However, as Aletta et al.'s work demonstrates, combining audio-visual field data in a studio setting can yield deeper insights into individual perceptions and experiences (Aletta et al., Year). This approach of integrating field observation with experiential analysis signifies a comprehensive method in soundscape research.

Yet, there are limitations to traditional interview settings. Hoffman (1980) highlights the challenges of cultural differences and potential distrust from participants, while McCormack (2013) criticizes the inability of lab-based interviews to capture the immediacy of everyday life rhythms and affects. Pink (2009) similarly notes the inadequacy of laboratory settings in studying sensory experiences. Therefore, as Vannini (2015) suggests, ethnographic and autoethnographic methodologies are gaining popularity for their immersive engagement with everyday life practices.

In my research, interviews will occur in situ, focusing on the sonic experience within public spaces. Degen and Rose (2012) advocate for such physical experience data collection, as it offers more accurate interpretations of urban spaces perceived through senses. The semi-structured nature of the interviews, aiming for a minimum of 15 per public space, is designed to capture the fluidity of conversation, providing rich, contextual data.

Limitations

Despite their versatility, interview methods come with inherent limitations. Cultural differences and communication barriers can arise when engaging with people from diverse backgrounds, making potential participants hesitant or distrustful (Hoffman, 1980). In some cases, key informants might view the researcher as a threat, or the research objectives may not be clearly conveyed, leading to confusion or misinterpretation.

Moreover, the authenticity of interview data can be compromised by dishonest interviewers who may fabricate results. McCormack (2013) criticizes interviews for failing to capture the emergent nature of everyday life rhythms and affects. This criticism is echoed by Pink (2009), who points out the limitations of lab-based interviews in sensory studies, where the natural environment and immediate experiences are crucial. These critiques underline the need for more immersive and contextually relevant methods in certain research areas, like sensory ethnography.

Interview objectives for this research

The selected interview for this research is semi structured and in situ. The primary objectives of conducting semi-structured interviews in this research are crucial for a comprehensive understanding of sonic environments in public spaces. Hence, these interviews will serve as a valuable tool to first identify the sonic qualities of space based on research objectives; By engaging participants in detailed discussions, the research aims to pinpoint key sonic elements within various public spaces. This involves not only recognizing distinct sounds and their sources but also discerning their impact on the ambiance of the space. A significant aspect of this exploration is to differentiate

between sounds perceived as pleasant or disruptive, offering a nuanced understanding of the auditory environment from the user's perspective.

Second reason to select this method this research data collection is to understand user norms and habits. Interviews will delve into how individuals interact with these sonic environments. This includes examining the emotional, psychological, and behavioural responses of users to different soundscapes, which are vital in understanding how sound influences user experience in public spaces. Capturing personal anecdotes and subjective experiences through these discussions will reveal deeper insights into user interactions with and feelings about the sonic aspects of public spaces.

Another critical aspect of this research involves examining the relationship between sonic qualities and urban design features. By focusing on diverse types of public spaces—ranging from informal areas to urban squares and boulevards—this approach seeks to discern how sonic profiles influence user experiences and perceptions in different urban contexts. The interviews will compare user experiences across these varied settings to draw conclusions about how sound and design collaborate to shape the public space experience.

Furthermore, recognising the impact of cultural and social backgrounds on sound perception is essential. The interviews aim to reveal how these factors colour individual experiences of soundscapes, supporting the development of public spaces that respect and reflect a wide array of auditory preferences and cultural aspects.

The culmination of this interview-based exploration is a series of case studies that apply the insights gained to assess and suggest improvements for specific public spaces. By incorporating direct user feedback into design recommendations, the research ensures that proposals are rooted in the genuine needs and preferences of those who use these spaces. This includes paying special attention to the cultural dimensions specific to Tehran, emphasizing the city's unique auditory culture.

Incorporating in situ interviews into the research methodology plays a crucial role, particularly due to the dynamic and often unpredictable nature of soundscapes in public spaces. Conducting interviews directly within these environments allows for an immediate, authentic engagement with the sonic aspects of the space, capturing the

experiential nuances that might be lost or diminished in a more controlled or removed setting.

Ultimately, the adoption of the semi-structured and in situ interviews is anticipated to yield rich, qualitative data that offers comprehensive insights into the sonic experiences of public space users. This in-depth exploration is poised to inform a grounded approach to urban design, ensuring that enhancements and recommendations are deeply aligned with the lived experiences and needs of the community.

Interview Procedures in this Research

During my fieldwork, I opted to integrate my interviews with sound collection process, aiming to correlate the findings from these two data sources effectively. Flexibility was key in the number of interviews conducted; I aimed for a minimum of three participants per each visit. The bustling atmosphere of the City Theatre Square anticipated a higher interview count. Nonetheless, the specific demographics present in such locations restricted the number of interviews conducted there, leading me to focus more on Keshavarz Boulevard for a straightforward interview process.

I did not confine myself to stationary interviews. Recognizing the dynamic nature of public spaces, I approached individuals engaged in various activities, asking for interviews during their walks, music listening sessions, or moments before departure. This approach allowed me to explore how sound perceptions influence the quality and experience of the space.

In ensuring the ethical integrity of my research, I prioritized transparent communication about the purpose of my study. Before engaging in any interviews, I meticulously explained my research objectives and obtained informed consent from participants, using consent forms to formalise this process. This practice was not only a fundamental ethical requirement but also served to establish a foundation of trust and mutual understanding between myself and the participants.

The cultural context of Tehran presented unique challenges and learning opportunities, particularly when compared to my previous experiences with participants in the UK. In Tehran, I found that a direct approach to initiating conversations, common in British contexts, was often less effective. Instead, I

discovered the importance of gradually building rapport with individuals. This process involved engaging in preliminary discussions, expressing genuine interest in their perspectives, and gradually introducing the topic of my research. This approach was essential for navigating the cultural nuances of interpersonal interactions in Tehran and ensuring respectful and meaningful engagement with participants.

Semi-structured questions were carefully chosen to maintain focus on the auditory aspects of public spaces without losing sight of their overall ambiance. These questions included:

How do you experience these public spaces? (Assessing whether participants mention sound or are more visually oriented)

How do you feel about the sonic environment in the public space?

Why did you choose to record these sounds?

How would you describe the quality of these sounds? Are they positive or negative? Please elaborate.

Does the soundscape affect your sense of belonging in this public space?

Does the soundscape influence your activities in this public space?

Are there any sounds that uniquely identify Keshavarz Boulevard, City Theatre, or Yousefabad?

Aligning with research questions, this methodology aims to uncover the sonic qualities characterizing Tehran's urban public spaces, understand how these sounds influence perceptions of publicness, and explore the relationship between Tehran's soundscapes and the auditory experiences of its diverse users.

4.5 Conclusion

This research outlined meticulously integrates semi-structured, in-situ interviews and sound diary, listening and collection processes to delve into the complex relationship between urban soundscapes and user experiences in Tehran's public spaces. The interviews aim to identify and analyse the sonic qualities of various urban areas, focusing on how these sounds are perceived by users and their impact on the ambiance of public spaces. By exploring the emotional, psychological, and behavioural responses to different soundscapes, the research sheds light on the

intricate ways in which sound shapes the experience of urban environments. Furthermore, the study investigates the connection between sonic qualities and urban design features across diverse public spaces, offering insights into how sound and design collectively influence the public space experience.

Ultimately, this research employs a grounded, comprehensive approach to explore the sonic dimensions of urban public spaces in Tehran. Through this detailed examination, it aspires to contribute to urban design practices that prioritize the needs and experiences of the community, ensuring that public spaces are inclusive, enjoyable, and reflective of the city's diverse sonic landscape.

Analysis

Introduction

In this section, I will analyse the data I have collected from two primary sources: interviews and my own observations. The objective here is to succinctly summarize and contextualize the data in alignment with the research questions that underpin this study.

The data will be systematically categorized and analysed in accordance with the specific research questions I have posited. The approach has two sections, firstly, it involves an examination from an urban design viewpoint, concentrating on how the qualities of soundscapes in public spaces enhance sensorial experiences and perceptions. Secondly, an exploration from the user's perspective, delving into the sensory experiences and perceptions within urban spaces. Consequently, my analysis is divided into two separate chapters: Chapter 5 and Chapter 6.

Chapter 5, Soundscape Analysis from an Urban Design Perspective

This perspective investigates the contribution of soundscapes to the enhancement of urban design quality and the publicness of places. It begins with an examination of spatial and auditory elements in public spaces, exploring how sound enriches the overall quality and lived experiences within these areas. Furthermore, it addresses the existing theoretical and practical gaps regarding the integration of sound into placemaking, drawing from observations and mapping exercises.

Chapter 6: Soundscape Analysis from a User Perspective

This segment of the analysis focuses on individuals' interactions with and perceptions of sounds within their local urban environments. It seeks to capture the subjective sensory experiences of users, providing insights into how soundscapes affect daily life, behaviours, and perceptions of space.

Both chapters will centre on three distinct urban areas: City Theatre Square, Keshavarz Boulevard, and Pelleh/Yousef Abad stairs. The aim is to thoroughly analyse each case study for its sensorial qualities from a user's perspective as well as its urban design elements. This comprehensive approach will provide a deep understanding of how sounds influence and are influenced by the spatial qualities of spaces, alongside the dynamics of users and their interactions within these environments.

5. Soundscape Analysis from an Urban Design Perspective

How does sound influence the perception of 'publicness' in Tehran's urban landscape, shaping the interactions, accessibility, inclusivity, and safety of its users?

How do different sounds affect feelings of belonging or exclusion in these spaces?

Chapter five embarks on an exploratory journey into the heart of Tehran, probing the intricate relationship between sound and space, and how this interplay shapes the essence of public space qualities in the city's various public areas. This chapter seeks to unravel how sound influences and is influenced the quality of public spaces' accessibility, inclusivity, and safety, and how it fosters feelings of belonging or exclusion among the city's diverse public.

Drawing upon the seminal works of Magalhães (2010) and Kohn (2004), this section also endeavours to academically define the concept of publicness, dissecting its multifaceted nature. Magalhães (2010) introduces a dual perspective on accessibility in public spaces, emphasizing both its physical and psychological dimensions. Physical accessibility pertains to the tangible ease with which individuals can enter and navigate these spaces, a fundamental aspect of urban design. Psychological accessibility, on the other hand, delves into the more intangible aspects of public spaces – the sense of welcome, comfort, and belonging that encourages people to engage with and utilize these spaces. This dual aspect of accessibility is pivotal in creating public environments that are not only physically approachable but also emotionally inviting.

Kohn (2004) expands this understanding by introducing a view of public spaces that transcends legal titles and property rights. He emphasizes a communal sense of ownership, stewardship, and belonging among the public. This dimension of publicness reflects the idea that public spaces are more than just physical locations; they are shared resources that should serve the interests and well-being of the wider community.

Intersubjectivity, as highlighted by both scholars, emerges as another crucial element of publicness. It encompasses the dynamic interactions and communication between individuals within public spaces. Kohn (2004) specifically underscores the role of public spaces in facilitating unplanned encounters among diverse groups, including strangers, friends, and acquaintances. This aspect of publicness is vital for fostering

social cohesion, cultural exchange, and community building, making public spaces vibrant hubs of social interaction.

This chapter is organised into three sections, each dedicated to a specific case study: City Theatre Square, Keshavarz Boulevard, and Yousef Abad Stairs. The structure is designed to systematically explore these spaces through a urban design lens focusing on sonic qualities. Each section is contributed by diverse insights derived from the data collected.

In the initial segment of each section, there is a focused examination on the various physical and spatial characteristics, including history, architectural form and function, legibility, accessibility, and inclusivity. These attributes collectively enhance the overarching sense of publicness. Exploring the historical context allows the study to uncover how past events and developments have sculpted contemporary public spaces. Analysis of architectural form and function sheds light on how the design and practicality of these spaces either support or impede public interaction. Legibility is crucial for ensuring these spaces are easily navigable and comprehensible to users, thereby creating a welcoming and memorable atmosphere.

Furthermore, the study probes into accessibility beyond mere physical entry, contemplating the social and economic hurdles that might restrict access to these spaces. Inclusivity is meticulously evaluated to confirm that these public areas accommodate a wide array of needs, fostering a sense of equity and community connection. Collectively, these aspects form a detailed framework for grasping how physical characteristics significantly shape the perception and utility of public spaces, aligning with the theoretical framework's aim to create environments that are comfortable, inclusive, and enjoyable for users, emphasizing identity, comfort, well-being, pleasurability, legibility, inclusivity, and diversity as outlined in Chapter three.

The subsequent data portion stems from sensory ethnography with a focus on auditory elements, aiming to delineate the soundscape, sound marks, and the characteristics of the sonic environment. This examination catalogues the variety of sounds permeating Tehran's public space, ranging from mechanical and natural to social interactions (Section 3.1.4), highlighting their sources and origins, whether internal or external to the space, and their contribution to the overall sonic ambiance in conjunction with previously mentioned elements. This exhaustive exploration in

Chapter 5 endeavours to deepen the understanding of the interaction between sound and space, guiding urban designers in evaluating place quality through auditory senses and harmonizing these insights to articulate the publicness of Tehran. This provides a nuanced perspective on the intricate dynamics of urban public spaces.

5.1 City Theatre Square: A Cultural Hub and Architectural Marvel

City Theatre Square is located on the edge of Valiasr- Enghelab intersection, which is considered the most important node in Tehran. This intersection is where Valiasr Street (formerly Pahlavi Street), one of the longest streets in the Middle East at 17 km, intersects with Enghelab street (formerly Shah Reza), one of the longest streets in Tehran. The University of Tehran, known as the mother university and the oldest and most prestigious in Iran, is also close to this intersection.

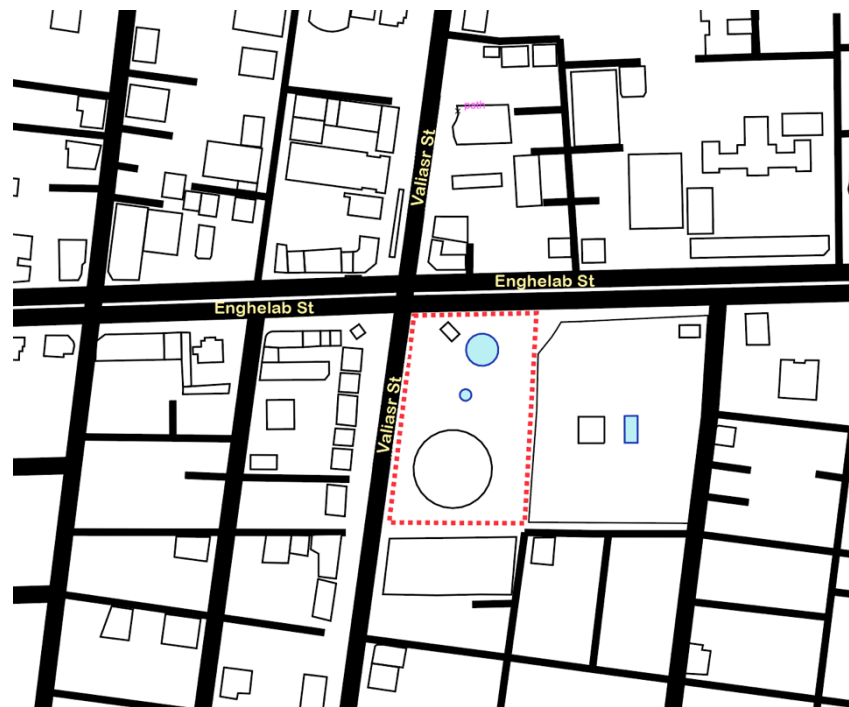


Figure 8 City Theatre Square Location marked with red dashed line, 2022.

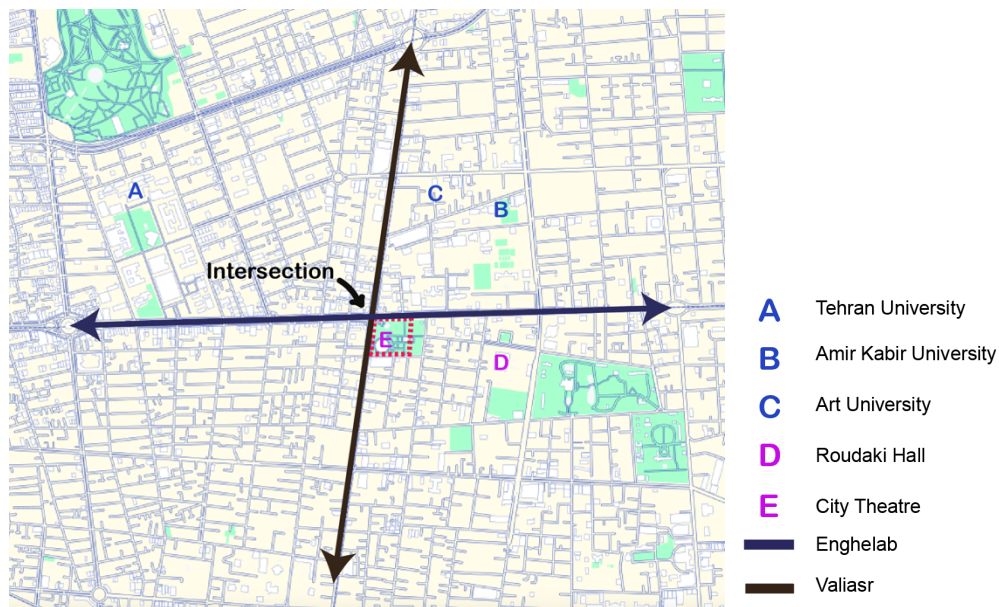


Figure 9 Location of City Theatre Square

City Theatre Square was developed in the 20th century as part of Tehran's modernization efforts. It became a focal point for cultural activities and urban development. The square is home to one of the most important art centres in Iran, the Teatre Shahr, or City Theatre, with its iconic building. In addition, the square is within walking distance of Vahdat hall (formerly Roudaki hall), the main venue for art music Performances (Figure 5.1.2). Across the street are Amir Kabir University (formerly Politeknik) and Art University. The recent addition of Valiasr Mosque and Religious Centre, located just behind the City Theatre, has sparked architectural debates due to its controversial design.

5.1.1 Urban Design Analysis

Comprehending the character and spatial attributes of the city theatre square is essential for the formulation and enhancement of public spaces that are not only contextually responsive but also attuned to its distinctive features. In pursuit of this understanding, I have elected to focus on an analytical framework encompassing historical context, land use patterns, form, inclusivity, diversity of activities, and legibility mapping as primary vectors for studying its character as I have justified in chapter three. This methodological approach is designed to provide a holistic view of the site, thereby facilitating a interpretation of its physical, social and spatial dimensions. Subsequently, I intend to amalgamate the data acquired from these initial studies with an analysis of the soundscape character, thereby enriching our comprehension of the site's multifaceted identity. This integrative approach

underscores the importance of a multi-dimensional analysis in urban design, ensuring that the resultant public spaces are reflective of both the tangible and intangible qualities that define the essence of the site.

Historical Context

Valiasr-Enghelab intersection where city theatre public space located has experienced a significant evolution through three distinct historical phases, transitioning from a modest alleyway into one of the primary arteries of Tehran.

Initially, during the Qajar era (1785-1925), it served as a slender path nestled among the gardens of the Qajar city. The transition of power to the Pahlavi dynasty in 1925 marked the beginning of its transformation, with the alley being expanded into Pahlavi Road. This development aimed to facilitate a shorter route between Tehran and Shemiran, linking the Marble Palace with the Sadabaad Palace, both Pahlavi dynasty creations. Over time, the area surrounding Pahlavi Road saw a gradual shift, turning the road into a bustling street. By the late 1960s, the term "road" fell out of use, and it became known as Pahlavi Street.

The street's third phase of historical significance coincides with the 1979 Islamic Revolution and subsequent modernization efforts. Initially renamed Mossadeq, in honor of a nationalist prime minister, it was later named Valiasr, after the 12th Shia Imam. This period saw a brief downturn due to demographic and social shifts, but soon, Valiasr Street emerged as a vibrant hub of urban life. In 2011, the street's unique character, highlighted by its iconic sycamore trees, earned it a spot on Iran's National Heritage List by the Cultural Heritage Organization, recognizing its historical and commercial importance (Mokhtari et al., 2014). Valiasr Street, with its extensive length, intersects several key east-west thoroughfares, becoming a focal point for political and social activism at various times. Among these, Shahreza Street (Enghelab Street) emerged as a significant urban axis during the city's expansion, playing a pivotal role in the gatherings and demonstrations that led to the 1979 Islamic Revolution in Iran. It was during this period that Shahreza Street was recognized as the city's central socio-cultural vein (Mokhtari et al., 2014)

Throughout history, this spot has been associated with both political turmoil and arts. Valiasr intersection has been a popular site for demonstrations, street fights, and rebellions since the 1970s.

From the 1930s to the 1950s, the intersection was home to a renowned café called Cafe Baladiye (Figure10), which not only had a beautiful outdoor space but also symbolized the emerging urban modernity in Tehran. It held significant artistic importance as well, with many elite Iranian classical musicians, including the pioneering Ghamar, performing there. Ghamar, known for her exceptional Iranian vocal techniques, was also the first female performer to publicly unveil herself, an act that put her life at risk in a conservative religious society. However, in the 1960s, the café was demolished and replaced by the prestigious City Theatre building, commissioned by then empress Farah Pahlavi. The most recent architectural development in the area is the construction of the Valiasr cultural and religious centre to the south of the site, which has sparked debates regarding its urban and architectural aspects, as well as its ideological significance. Nonetheless, these are not the only notable locations in this area.



Figure 10 Valiasr (then Pahlavi) intersection, 1956, aerial photo. The building on the southwestern side of the site is Cafe Baladiye (Marked with Red line). Courtesy of Valiasr Street Museum.



*Figure 11 Valiasr intersection towards the east, probably in the 1950s.
Courtesy of Valiasr Street Museum.*



*Figure 12 Valiasr (then Pahlavi) intersection, aerial photo. The circular building is the building for Theatre Shahr (City Theatre) while being constructed.
Courtesy of Valiasr Street Museum.*

Daneshjoo Park, formerly known as Pahlavi Park, is also situated on the eastern side of the intersection. Following the triumph of the revolution, the street was aptly

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renamed Enghelab Street, a Persian term meaning "revolution," symbolizing its profound political significance in Tehran's landscape (Rezaee Rad, 2012). This area, now a hub for intellectuals and students, marked by the presence of the Student Park and City Theatre, became a key site for revolutionary activities (Mokhtari et al., 2014, my translation). Today, the intersection of Valiasr and Enghelab Streets continues to be a vital centre in Tehran, maintaining its historical legacy as the city's heart.

Form and Function

As second part of my urban design assessment involves a detailed examination of the space's form and function, which constitutes a spatial analysis of the public area in question. To thoroughly understand the form, it is imperative to evaluate the physical design of the public space. Concurrently, to gain insights into its function, I have resolved to undertake a land use mapping of this public space. This dual-faceted analysis is designed to provide a holistic understanding of the space's characteristics, thereby facilitating a more informed exploration of the interplay between its design elements and soundscape.

Land use

This public space is encircled by a diverse array of buildings, each serving various urban functions (Figure 13). The focal site of my study is highlighted by a dotted red line and is defined by a prominent structure — the city theatre. This structure logically establishes a significant cultural and social space within the city, likely serving as a hub for community events and performances. In terms of artistic and cultural significance, there are numerous private and public art centres within walking distance of the intersection, including City Theatre, Vahdat hall, Roudaki Hall (formerly known as The Small Hall), Hafez theatre, Ferdowsi theatre, a Black Box theatre, Art University, Faculty of Fine Arts of the University of Tehran, large bookstores, cafes, Hamoon theatre, Shahrzad theatre complex, and cinemas. However, the artistic presence in this area extends beyond recent decades.

Residential areas are notably sparse, representing the smallest portion of land use. They are situated away from the major roads, indicating that this vicinity is not

predominantly residential, which might suggest a deliberate zoning strategy to separate living spaces from the bustling city centre.

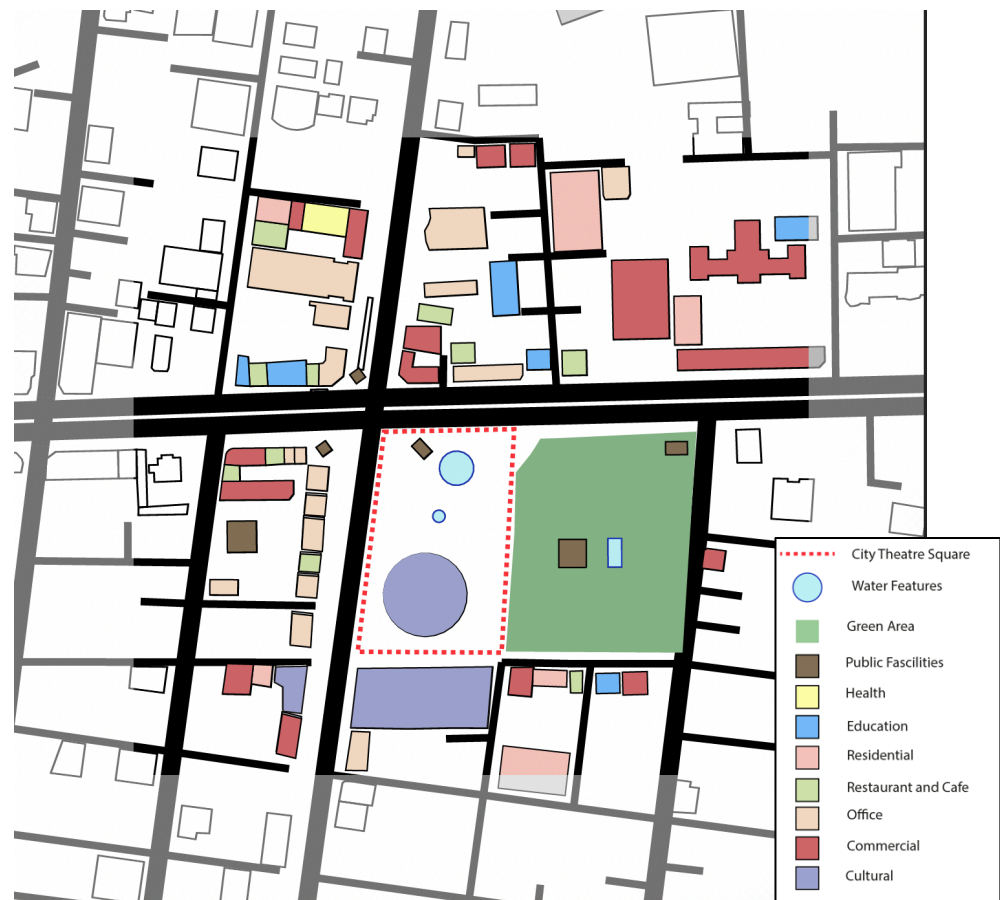


Figure 13 Land Use Map

The surrounding area is rich in educational facilities, including notable institutions such as Amir Kabir, the University of Tehran Art Department, with several buildings dedicated to higher learning in this sector and one junior high school.

The region boasts a significant concentration of office buildings that accommodate a mix of government services and private sector enterprises. This amalgamation of workplaces naturally fuels a high demand for dining options in proximity, particularly cafes and fast-food outlets, which cater to the bustling daytime population. The remarkable density of these culinary establishments not only meets the immediate needs of the workforce but also contributes to a lively gastronomic landscape, underscoring the area's reputation as a destination for both sustenance and socializing.

The green area, known as Daneshjoo Park, offers public facilities, including prayer rooms, a library, and public restrooms, contributing to the community's well-being. Like any other large urban park, it features trees, vegetation, pools, seating, and modern sculptures.

Interestingly, on the southern side of the theatre, a newly developed mosque stands where a parking lot once was. This decision reflects a strategic urban move that prioritizes cultural development, although it may present some challenges to the efficient fulfilment of the community's immediate needs, such as parking. The juxtaposition of the new mosque next to the theatre introduces a dynamic contrast to the area's urban fabric, highlighting the complex interplay between cultural considerations and practical urban planning.

Types

City Theatre Public Space closely aligns with the piazza typology, sprawling over 6000 square meters and using the theatre building as its central point of attention. This open space is enhanced by elements features such seating facilities, soft landscape, public art, and fountains, integrating plaza elements into its design.

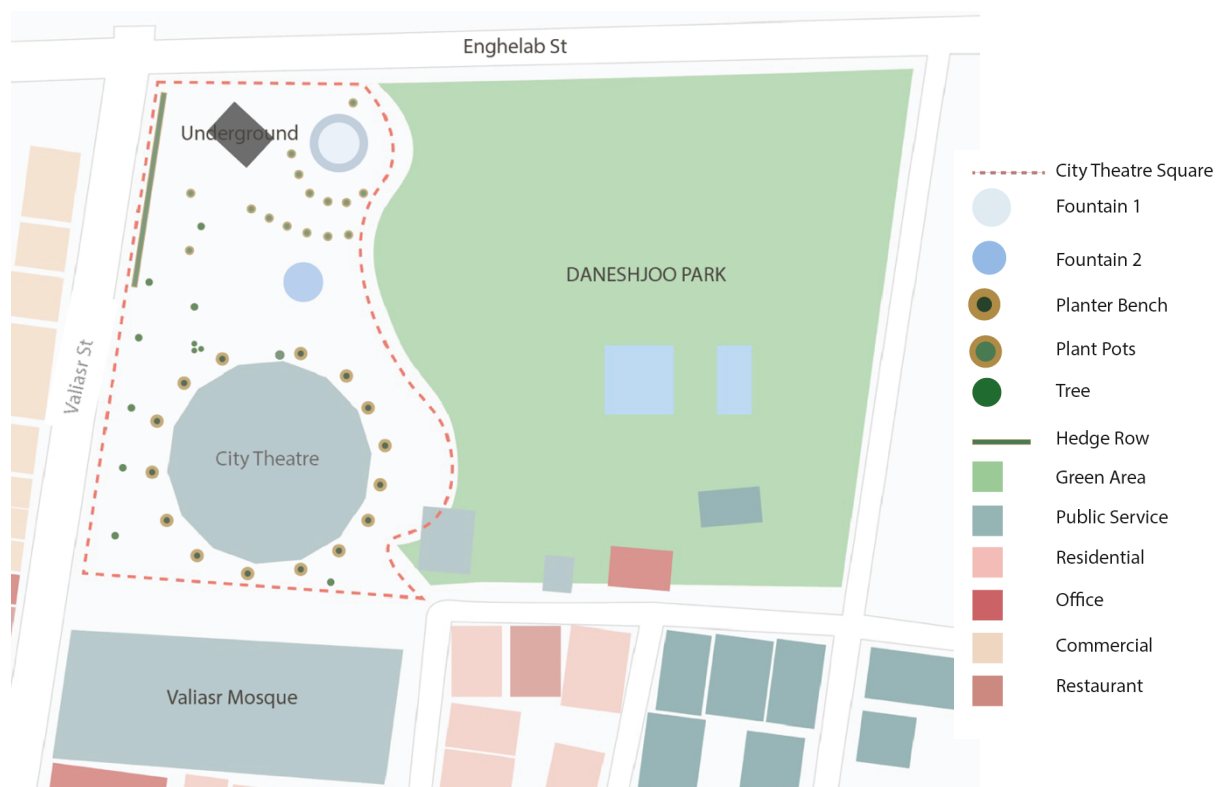


Figure 14 City Theatre Spatial Analysis Map

	Plaza and Square	City Theatre Square
Function, Goal and Definition	<ul style="list-style-type: none"> • A plot of linked to the building in towns and cities as a destination and stage. • To promote social interaction and commerce, run events and to showcase architecture. 	<ul style="list-style-type: none"> • Dedicated public land, featuring a public building located in Tehran and surrounding the city's theatre building, serves as a cultural hub. • This space functions as a venue for cultural gatherings that promote art and cultural events, positioning the theatre as a distinctive landmark in the capital city.
Design Considerations and Physical form	<ul style="list-style-type: none"> • Varied geometries (rectangular, square, circular, irregular), often defined by the surrounding architecture. • Visual and physical accessibility • Integration with urban fabric • Features include accessible walkways, seating, and amenities at a scale comfortable for human use. • Sense of enclosure; Achieved through the arrangement and height of surrounding buildings, walls, trees, and other vertical elements that frame the space. 	<ul style="list-style-type: none"> • Semi-Square shape, covering a very large area of 600 sqm. • Visually accessible and well-connected to the city. • Well-designed seating areas, but pathways are not very accessible and not properly scaled. • Not enclosed; it is a completely open space with two sides open to a large road and the other side open to a park with trees. • Contemporary architecture style.
Spatial Elements	<ul style="list-style-type: none"> • Hard paving • Surrounding buildings in a rhythm • Fountains, reflective pools, and statue, often serving as focal. • Good lighting for safety. • Long lasting material and architectural value. • Use of stone, brick, concrete, and natural materials that complement the historical context and intended use. 	<ul style="list-style-type: none"> • Hard paving dedicated for pedestrian zone. • Unique contemporary design inspired by Iranian architecture style, utilizing materials such as bricks instead of metal and stone. • Large, circular-shaped building standing 15 meters tall, designated solely for shows and events. • Surrounding buildings and park lack continuity in design and rhythm. • Limited trees and landscape design within the site, featuring scattered trees and plant pots. • A variety of seating options available in different locations.
Social Function	<ul style="list-style-type: none"> • Providing some activity generators, Serves as a gathering place for public events, markets, and socializing. 	<ul style="list-style-type: none"> • Offers a space for various types of activities such as leisure, commercial activities, and community gatherings in a natural setting, as it is located next to the theatre and in the city centre.
Ownership and management	<ul style="list-style-type: none"> • Good maintenance and operation to feel safe, lively, and attractive and for public use. 	<ul style="list-style-type: none"> • Owned and manage by public section, available and open to all, even if temporally controlled

Figure 15 City Theatre Square public space typology assessment

The evolution of public spaces in Tehran, particularly as observed in the City Theatre Square, marks a significant departure from purely traditional Persian garden principles that have historically shaped Iranian urban design. Unlike the quintessentially Western

concept of public spaces evident in this square, traditional Iranian public spaces, deeply rooted in the culture characterized by a harmonious blend of architecture and nature.

In contrast to the richly integrated natural elements of Persian gardens, which serve as paradigms of Persian cultural identity, the City Theatre Square presents a more restrained approach. The solitary round fountain, prominently placed yet not aligning with traditional Persian water feature placements, underscores this deviation.

This restrained integration of natural elements in the City Theatre Square, particularly the limited, conspicuous, and scattered presence of trees, starkly contrasts with the lush, carefully curated vegetation of Persian gardens, which are designed to create visual corridors and frame vistas, enhancing both the aesthetic and experiential quality of the space (Figure 14). This shift indicates a move away from the traditional Persian ethos, where the fusion of nature and architecture is not only aesthetic but also symbolic, reflecting deeper philosophical and cultural values.

Moreover, the spatial arrangement and the subdued use of nature in the City Theatre Square suggest a departure from the traditional Persian garden design and moving to more modernisation and piazza style of west (Figure 15). Traditionally, Persian public spaces feature pavilions as focal points that blend beauty with functionality, offering expansive views and inviting interaction with the natural surroundings. These pavilions, thoughtfully oriented to harmonize with the garden's natural beauty, embody the principle of human scale—creating spaces that are proportionate and conducive to human interaction. This careful attention to scale and perspective ensures that the pavilion enhances the garden experience, aligning with the traditional Iranian values of balance and harmony.

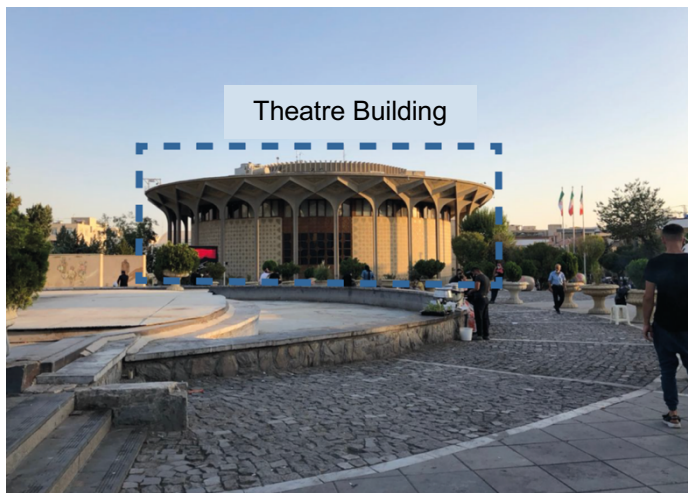


Figure 16 : Left: City Theatre Building. Right: The front pavement for pedestrian zone.



Figure 17 Seating Facilities in City Theatre

The City Theatre Public Space, defined by its central theatre building, represents a departure from traditional Persian garden design norms. Viewed from above, the theatre, situated near Daneshjoo Park, bears a superficial resemblance to a traditional garden pavilion. However, in contrast to these pavilions, which seamlessly integrate with their surroundings, the theatre distinguishes itself through its considerable size and distinctive design. Its cylindrical form, approximately 34 meters in diameter and

15 meters in height, is unconventional for Iranian public spaces, thereby challenging the principle of human scale. The grandeur of the building, with its small doors and vents, adds to its monumental character, potentially overshadowing the human element in the adjacent square.

The incorporation of traditional Iranian concepts of 'Andarooni' and 'Biruni' in the design of this public space represents a subtle influence of Persian culture on place-making. Andarooni at the city scale can be thought of as the more private, intimate spaces within the urban fabric. Biruni, in contrast, represents the city's public face, encompassing spaces designed for social interaction, commerce, and civic activities. These terms refer to the division of private and public areas within a physical space, a principle deeply embedded in Iranian architectural tradition (Pirnia, 2005).

The design strategy of the City Theatre building sought to integrate the concepts of Andarooni and Biruni, with a notable feature being the porch, which is encircled by a series of elegant columns (Figure 16 and Figure 17). This architectural element skilfully bridges the interior (Andarooni) with the exterior (Biruni), achieving a balance between open and private spaces while encapsulating the essence of Iranian culture. It highlights the cultural importance of privacy in its architectural expression (Memarian, 2002). Additionally, I would argue that the back of the building belongs to the Andarooni domain, as it is more secluded and shielded from the rest of the site by the building itself.

However, despite its intended purpose, the porch predominantly aligns with the open space, thus diminishing its role as a transitional zone. This contrasts with traditional Iranian architecture, where transitional spaces play a critical role in mediating between public and private realms (Kheirabadi, 1999). The stark contrast presented by the building's robust, impenetrable walls further accentuates this separation, deviating from the conventional architectural narrative where walls and openings are balanced to create a sense of enclosure and openness (Varjavand, 1998).

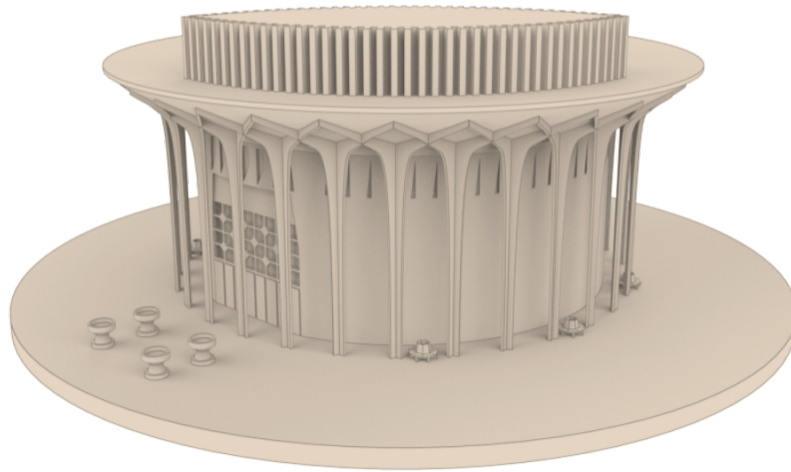


Figure 18 City Theatre 3d model.

Consequently, integrating the porch with the solid structure of the building inadvertently undermines its pivotal role as a mediator between open and enclosed spaces. This diminishes its potential as a connective element in the design, which is a critical aspect in traditional Iranian architecture (Madanipour, 1998). As a result, the space, although visually appealing, may not fully resonate with the underlying cultural and historical principles it seeks to reflect.

This observation aligns with Grabar's analysis in "The Islamic City" (1983), where the spatial dynamics of traditional Islamic architecture are contrasted with contemporary urban developments. Unlike the introspective experience synonymous with Persian gardens, the square extends towards the bustling Valiasr intersection with Enghelab, accentuating the building's segregation due to its location in the southern section, distinct and solitary.

Despite these differences, the material used for the exterior of the theatre building, adorned with yellow brick and turquoise tiles, forms a bold statement. This richly decorated façade echoes traditional Iranian architecture commonly seen in public buildings such as mosques and schools. The interior carries on this theme, featuring pottery bricks, geometric patterns, and traditional motifs, creating a dialogue between contemporary design and historical tradition.



Figure 19 Material used in the façade of the City Theatre building.

Legibility

Understanding the legibility of City Theatre square enhances the comprehension of its structure and utility. Legibility in urban design refers to the ease with which people can navigate and recognize various elements within a space, including paths, edges, districts, landmarks, and nodes (Lynch, 1960). This section will present this analysis to enhance the understanding of the space's accessibility and navigational clarity, proposing strategies for improvement where necessary and finding any correlation with other sensory stimuli.

Paths

The pathways within this public space are well-defined, offering several channels for movement. However, in comparison to the area's overall scale, the number and variety of pathways appear insufficient. The existing pedestrian pavements throughout the area facilitate freedom of movement, allowing individuals to choose their own routes. Sidewalks adjacent to roads provide additional access points into the public space, enhancing structural connectivity.

Despite the presence of these pathways, two primary issues emerge. Firstly, the start and end points of these pathways are not clearly marked, leading to potential confusion among users. Secondly, although the pathways are visually appealing and provide an engaging experience, their social management is lacking. This is evident from observations and maps (Figure 20) showing that people predominantly use only two major pathways within the space, suggesting a need for better distribution of foot

traffic and improvements in the way pathways are integrated and managed within the public space.

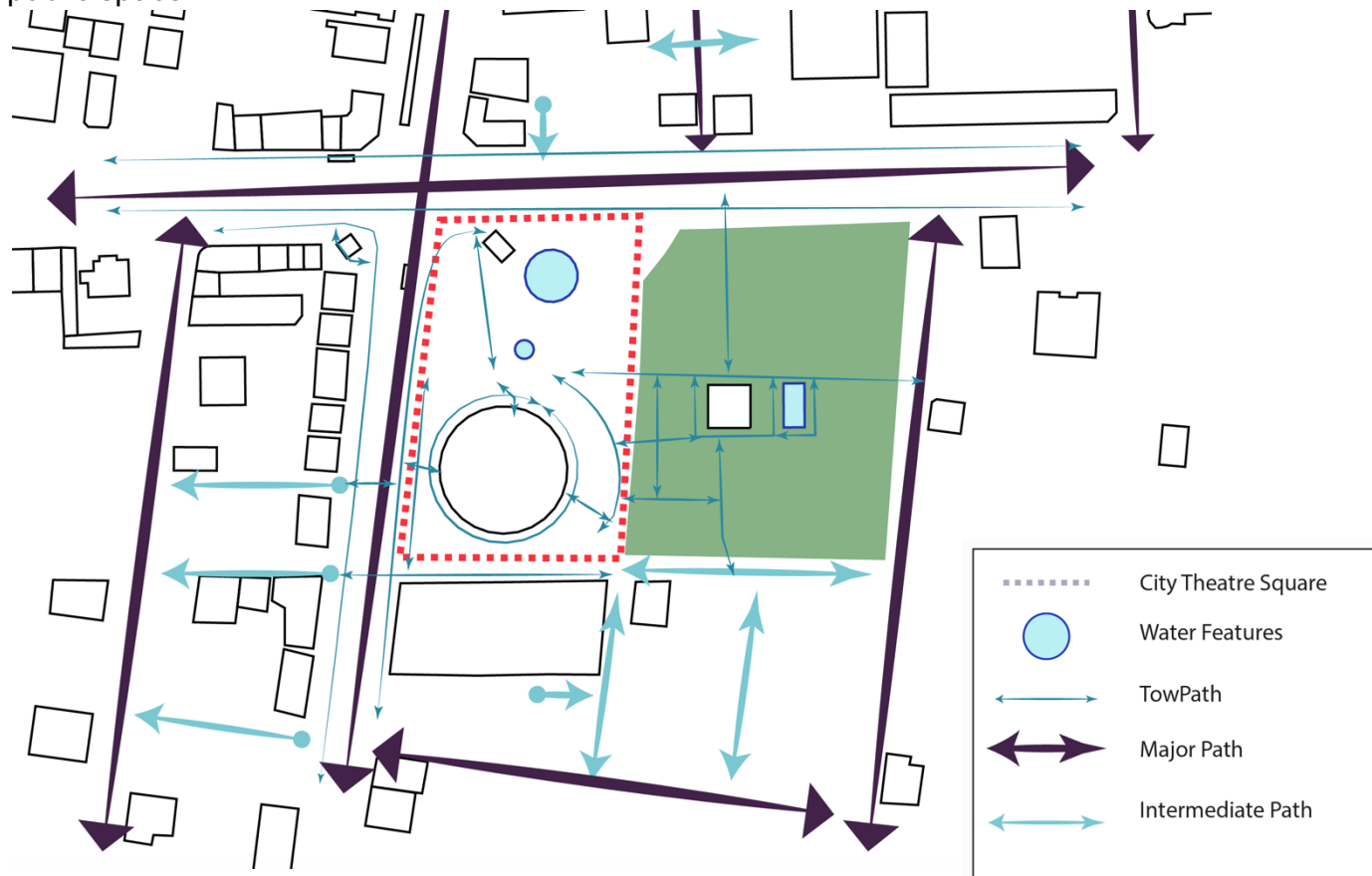


Figure 20 Legibility City Theatre Square, Paths

Landmarks

The main building within this public space is a significant landmark, not only for the area but also for the wider city of Tehran. Its distinctive scale, architecture, and strategic location render it memorable. Additionally, the nearby metro station, despite its nondescript design, serves as a minor landmark due to its proximity to the vital Valiasr-Enghelab intersection and its function as a transportation hub. The fountain located at the centre of the space, adorned with a statue, further enhances legibility by providing a visually appealing reference point within the public space. (Figure 5.10)

Nodes

Nodes are pivotal areas that attract activities and serve as gathering points. The primary node within this area is the intersection of two major roads, characterized by

high pedestrian traffic, metro connectivity underground, and the presence of taxis and vehicles. Secondary nodes include areas adjacent to the station, where pedestrian density peaks as people enter and exit the site or transition into the city. Additional minor nodes are found in the park near the prayer room and fountain, as well as in central areas featuring more seating options. These nodes are essential in organizing the flow of people and activities within the public space.

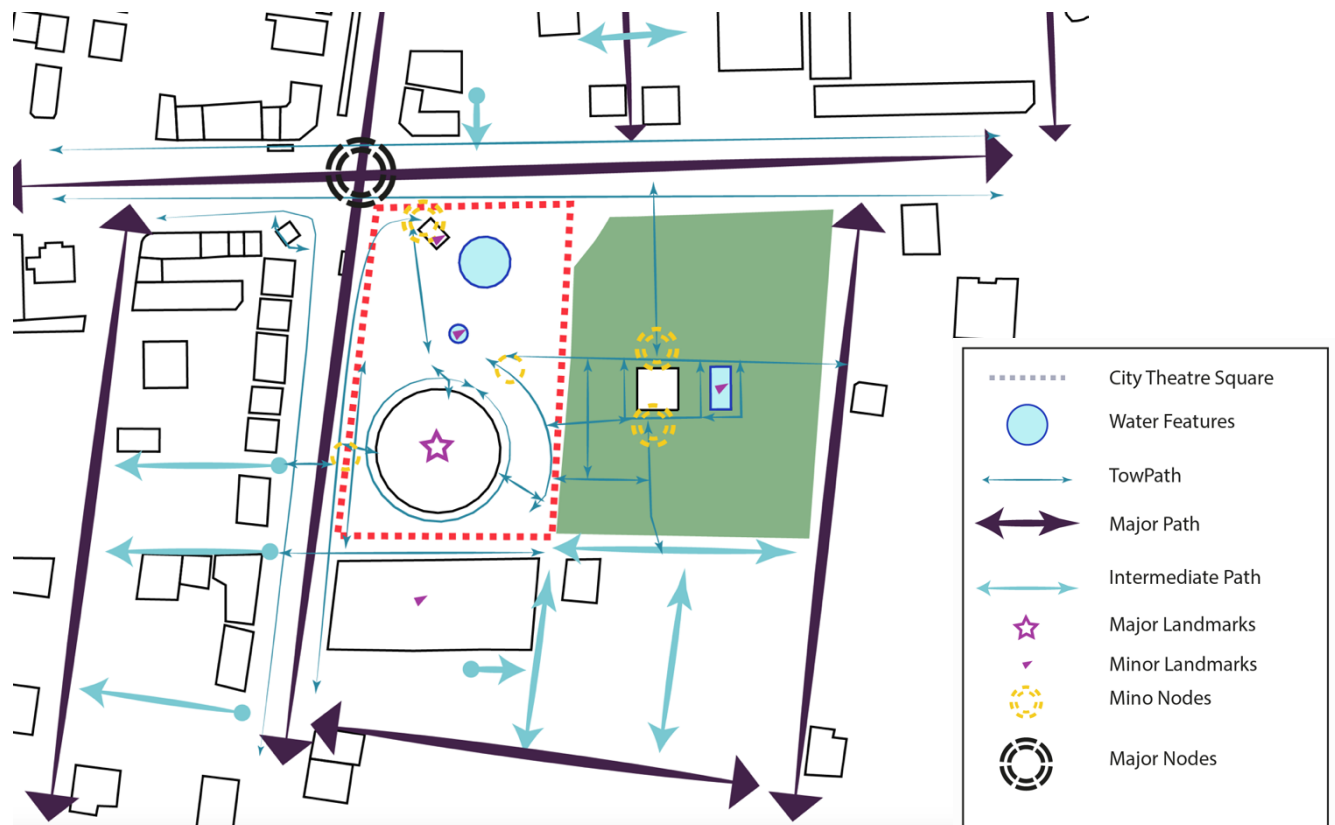


Figure 21 Legibility map City Theatre Square, Landmarks

Edges

In this site, two significant edges were identified. First, the boundary of Daneshjoo Park, which acts as a barrier between the park and the rest of the public space.

Second, the fences surrounding the City Theatre's public space, which serve to delineate the area from the adjacent busy roads. These edges are critical in shaping the spatial definition and perceived safety of the public space, influencing how visitors interact with and move through the area.

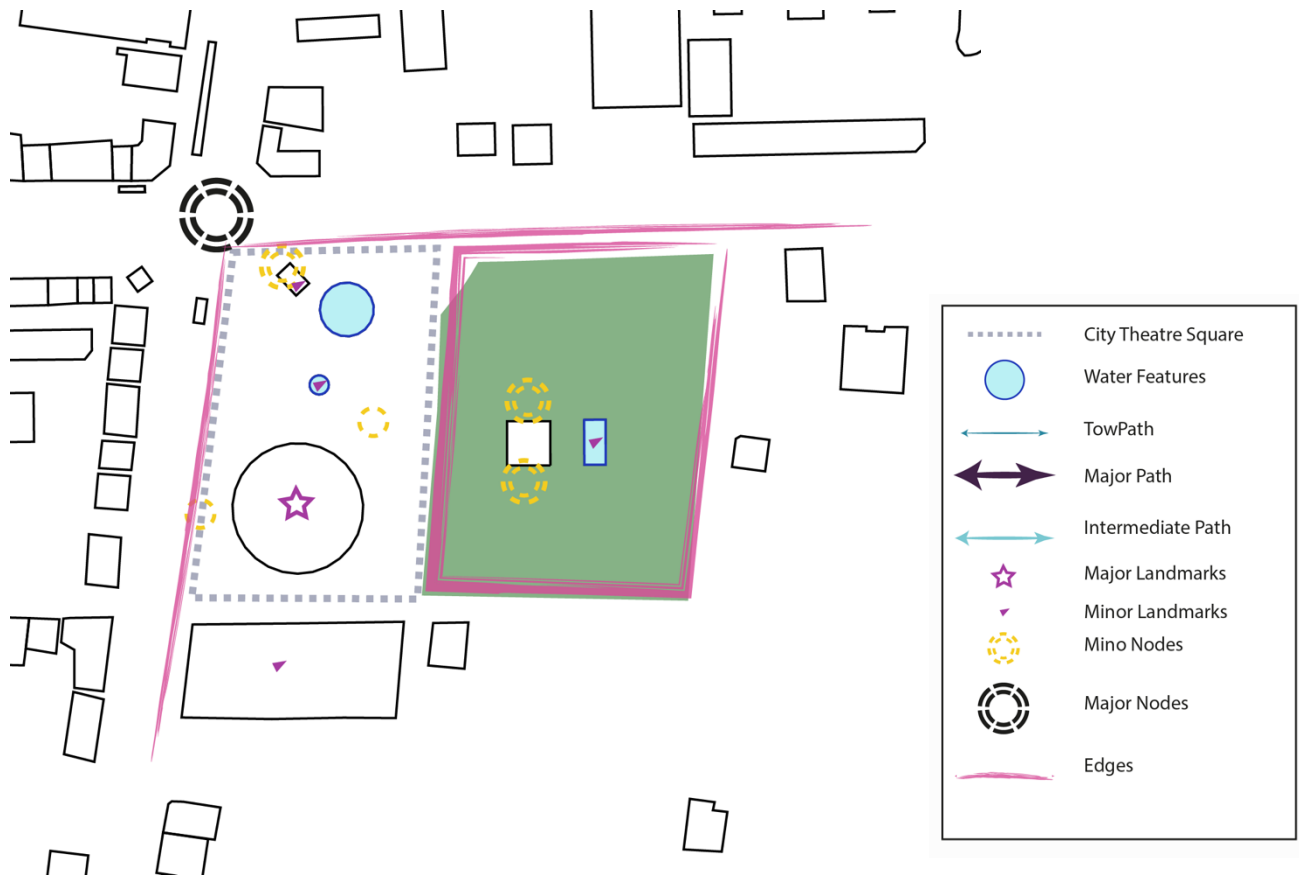


Figure 22 Figure 21 Legibility map City Theatre Square, Edges

Overall, City Theatre Square exhibits a good level of urban legibility with clear paths, identifiable landmarks, active nodes, and distinct edges. However, there are opportunities for enhancement, particularly in the areas of wayfinding, social management of pathways, and the clarity of pathway terminations. Improving these aspects could significantly enhance the navigational experience and overall functionality of the space.

Accessibility, Inclusivity and Diversity

In this section, I propose that accessibility is influenced not only by physical barriers but also by psychological and managerial factors that can implicitly restrict entry. The design interventions and management of this space may inadvertently diminish its accessibility, suggesting a misalignment with the actual needs of the populace.

The City Theatre Square is a site which is owned by public and managed by public sector, supposedly open to all, as it is a gateless pedestrian zone with distinctive tiling

for pedestrian use. It remains physically accessible around the clock, without any formal regulations pertaining to opening or closing hours.

However, the accessibility of this public space is not as straightforward as it initially appears. Officially, it presents an image of unrestricted access, yet several elements subtly counter this notion.

Firstly, the presence of security personnel near the entrances to the site, both at the underground access point next at the major intersection of Valiasr and Enghelab: location 1, as well as in front of the main entrance of the theatre building: location 2, creates a sense of isolation (Figure 23). This positioning subtly deters entry, making it instantly noticeable upon approach. Additionally, conducting observations in these areas proved to be challenging, particularly when the security was concentrated at specific locations. Throughout my observational study, I consistently observed security personnel stationed strategically near the square's entrance at the street edge. On some days, there was a noticeable increase in the number of guards positioned next to the city theatre entrance, as illustrated in the figure below.



Figure 23 Location of security guard marked by 1 and 2

This consistent deployment of security forces at a critical juncture of the public space underscores the importance attributed to surveillance and control within this area. Their presence not only serves as a physical deterrent but also symbolizes the underlying governance and regulatory strategies employed in the management of the space. This observation is crucial in understanding the dynamics of how public spaces are monitored and regulated, especially on days of heightened importance.

Secondly, a further impediment to the square's accessibility is the covert yet strategic method of control that transcends simple physical barriers, revealing a deeper, more calculated strategy by the management to govern access to the public space. The strategic erection of fences at all corners of the intersection, deliberately extending from the theatre square to the mosque, acts as a cunning ploy to manipulate pedestrian flow and activities (Figure 24). This design significantly hinders the ease of crossing the intersection, subtly undermining public access.



130 Figure 24 Accessibility City Theatre Square

To remedy the access issue that was caused by the managers, city authorities have implemented an alternative which is an underground passageway designed to facilitate movement beneath street level. However, this 'solution' effectively diverts attention and foot traffic from the intersection and the vast public space to the metro station. By encouraging the public to use the subterranean route primarily for transit, this approach inadvertently minimizes the visibility and engagement with the public square above, further eroding its accessibility and vibrancy. This strategy, rather than enhancing the square's utility and appeal, serves to weaken its role as a accessible and inviting public space for the community.

This is in simple contrast to the square's potential role as a significant node within the urban fabric of the city. The juxtaposition of its physical openness with these subtle forms of exclusion highlights the complex dynamics of accessibility in urban public spaces.

Users and activities

However, what sets this park apart is its hidden layer. It is notorious for being a "market" for transgender sex workers, as both prostitution and LGBTQ+ relationships are banned in Iran. The park becomes particularly active at night, with numerous customers and "sellers," and networks of procurers patrolling inside and around the park to attract potential customers.

In recent years, City Theatre Square has become a bustling hub for a variety of street vendors, ranging from food sellers to clothing merchants. These vendors span the edges of the square, covering areas from the northeast to the southwest (as depicted in Figures 25 and 26). A handful of these vendors have been formally organized into stands by the municipal authorities, yet the majority continue to operate from makeshift setups along the sidewalks. The arrangement of these vendors is generally disorganised, as illustrated in Figure 25,26, where some have placed their cooking equipment against the square's pillars near the entrance to the underground. Predominantly, these vendors offer street food, and a few even provide chairs and tables, accommodating customers who wish to sit and enjoy their meals on-site.



Figure 25 City Theatre Square Location, 2022



Figure 26 City Theatre Square Location, 2022

On the southern side of the Theatre building, the peddlers are extended on Valiasr street's sidewalk. They mostly sell clothes, shoes, accessories, and even some home

equipment. They are extended to the south, as far as the southern end of the mosque and religious centre.

5.1.2 Soundscape Assessment, the sound of centrality

This section will assess the soundscape of City Theatre Square in Tehran, focusing on the diversity and sources of sounds within this vibrant public space. Utilizing a combination of sound recording data and observational analysis, this research categorizes the soundscape into two primary sources based on findings: industrial and human activities, with an incidental note on natural sounds.

Sound Category	Key Elements	Description
Urban Symphony	Traffic, Public Transport	The baseline of urban symphony with the constant hum of traffic and public transport, setting the pace of life.
Society Interactions	Conversations, Social Interactions, Peddlers/Taxi Calls, Children's Voices, Playing games in the group	Rich tapestry of human voices and commercial interactions, highlighting the social dynamics and commercial nature of the Square.
Cultural Echoes	Public Performances, Religious Events, Sounds from Valiasr Mosque	Breaks the everyday monotony with cultural and spiritual sounds, offering glimpses into community life.
Nature's Whisper	Natural Sounds (leaves rustling, water flowing, occasional bird sounds)	Subtle natural sounds provide tranquillity and a break from urban clamour, reminding of the environmental context.
Individual Activities	Personal Soundscapes (listening to music, smoking)	Reflects personalization of public space, illustrating diverse individual experiences within the Square.

Figure 27 Sound Categorisation from Sensorial Ethnography

Urban Symphony and Human Interaction

The constant hum and rhythm of traffic, punctuated by the distinct sounds of public transport stops and starts, form the baseline of the urban symphony. This continuous cacophony sets the tempo of life around the Square, creating an ever-present backdrop that defines the urban experience. However, the sounds of traffic diffuse across the square without significant buildings to create a sonic bubble, causing the traffic noise to diminish in the expanse of the square. Additionally, the scale and

placement of buildings, along with the adjacent park, act as barriers that mitigate the high volume of traffic noise from the major roads, protecting those seated in designated areas illustrated by the planter bench in the figure 28 within the public space. It becomes evident that the location of these seating areas is optimal auditory experience.

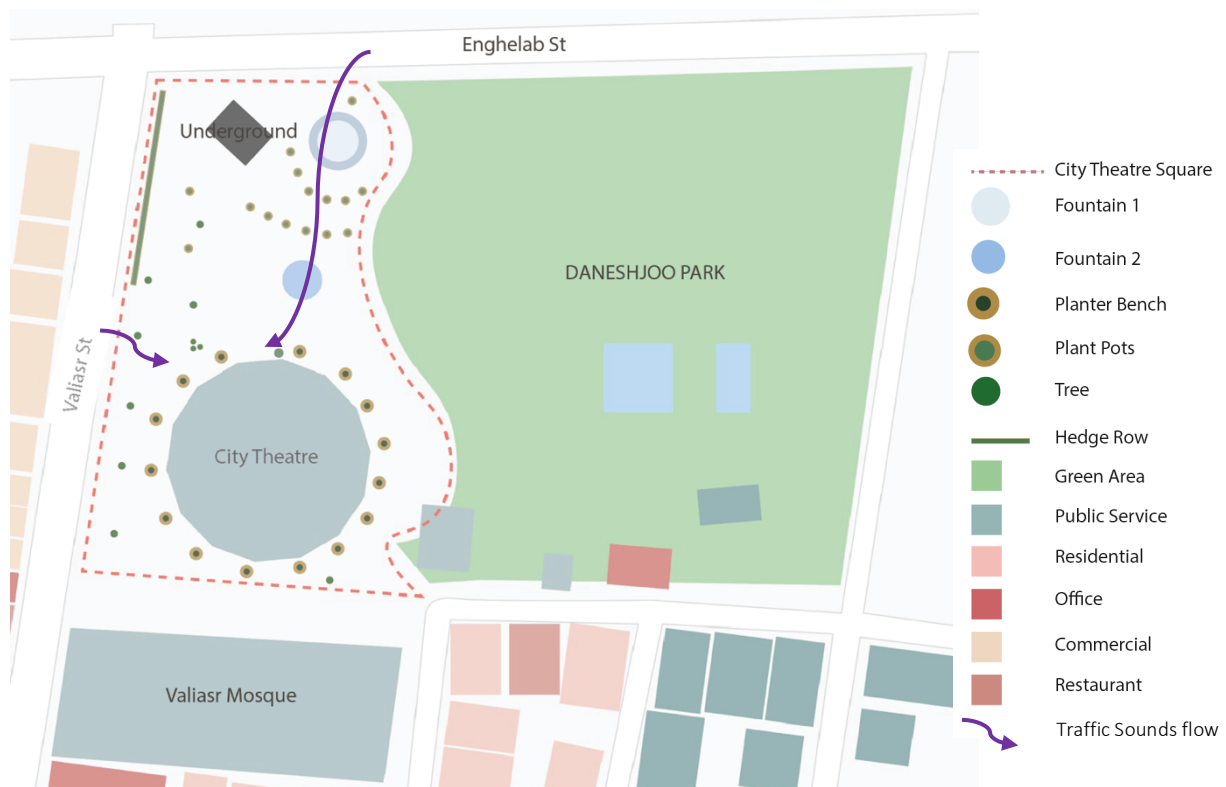


Figure 28 City Theatre Square Facilities

The second most prominent auditory element of this public space is the Human Tapestry. The first subgroup encompasses conversations and social interactions. The Square's atmosphere is enriched with the channels of human voices—conversations, animated group discussions, and the occasional loud exclamation. These sounds, brimming with emotion and variety, vividly illustrate the social dynamics at play. It's observed that these represent the sounds of social and optional activities typical of any public space. Interestingly, while positive human interactions are a joy to overhear, the spatial arrangement of seating areas—either widely spaced or back-to-back—means that louder, sometimes less pleasant exchanges tend to overshadow more

congenial conversations that take place with lower volume, occasionally including harsh or offensive language.

Peddlers, taxi calls, and street vendors constitute the second subgroup of the human tapestry. Mingling with the conversations are the unique calls of peddlers and taxis, signalling the commercial and transactional essence of public spaces. These calls, each with its distinctive tone and rhythm, enrich the auditory landscape. Taxi calls are more frequently heard near the station and intersections, while peddlers position themselves along the edges of the public space, between the major roads and the pedestrian areas. The third subgroup of human interaction involves children's voices and begging. The poignant sounds of children, whether playing or begging, introduce elements of vulnerability and innocence, eliciting a spectrum of reactions. These sounds, acting as audible signals, pervade the public space, drawing nearer for interaction or passing by, adding a layer of complexity to the urban soundscape.

Cultural Echoes and natural whisper

On occasion, the Square undergoes a transformation into a vibrant stage for public performances and religious events, introducing a diverse array of sounds ranging from musical performances to religious chants. These events punctuate the everyday auditory backdrop with a sign into the cultural and spiritual life of the community. Performances take place in the expansive outdoor areas, in front of the theatre building entrance, or atop the first fountain, which can be adapted into a makeshift stage.

Religious events, often coinciding with significant bank holidays such as the birth of the prophet or Ashura, bring a unique vibrancy to the square. Additionally, the daily, and sometimes occasional, sounds of the call to prayer and the echoes of religious gatherings from the nearby Valiasr Mosque add a spiritual dimension to the soundscape. This connection enriches the Square, tethering it to the broader cultural and religious practices of Tehran.

Amidst the urban clamour, the subtle presence of natural sounds - the rustling of leaves, the gentle flow of water from a fountain - serves as a reminder of the environment and offers moments of tranquillity and reflection.

The soundscape of City Theatre Square is a rich tapestry of sounds that reflects the complexity and vibrancy of urban life in Tehran. It is a blend of the relentless pace of traffic, the dynamic chorus of human interactions, the cultural vibrancy of performances and religious events, and the subtle undertones of natural sounds. Together, these elements create a unique auditory experience that shapes the identity of the Square and the experience of those who move within it.

Auditory Architecture and Spatial Identity

Through observation, audio recordings, and mapping of the City Theatre Square, it becomes evident that the acoustic architecture of each area significantly creates its distinct character. This approach not only defines the unique qualities within the case study but also establishes discernible boundaries within the space, highlighting the role of sound in forming urban environments.

Building on the previous discussion of legibility, an immersive auditory exploration reveals notable differences across three distinct areas within this public space, as illustrated in the accompanying map (Figure 29). Through repeated visits and data collected, these three primary zones within City Theatre Square have been delineated based on their unique auditory characteristics, which markedly influence their individual identities.

This segmentation informed by theoretical frameworks that emphasize the sensory dimensions of public spaces Henri Lefebvre conceives of space as a social construct, intimately tied to our sensory experiences. According to him, our comprehension and navigation of public spaces are profoundly affected by our sensory inputs, with a particular emphasis on the auditory dimension's role in forming our spatial perceptions. Complementing Lefebvre's insights, Michel de Certeau elucidates how sensory practices, especially auditory experiences, are fundamental in interpreting and navigating urban spaces. Consequently, the sounds within City Theatre Square transcend mere background noise, becoming crucial to how the space is experienced, navigated, and understood by its visitors. These theoretical perspectives provide a robust foundation for the identification of the three zones within the Square, each characterized by a distinct soundscape that mirrors and moulds the social interactions and activities occurring within them.

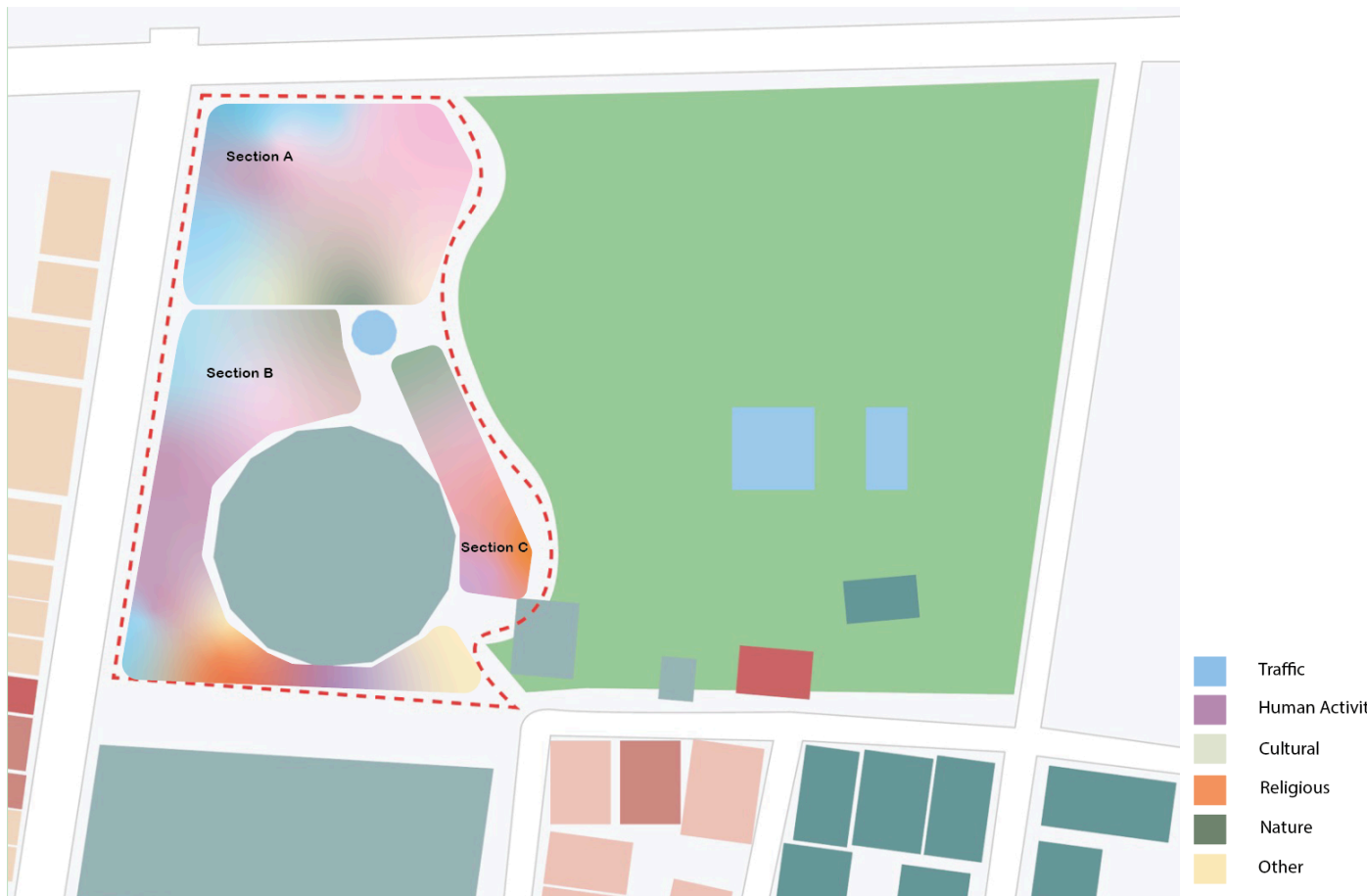


Figure 29 Soundscape characteristic of City Theatre square

Based on the detailed descriptions that will be provided for each section, I've summarized the character and labelled the types of soundscapes for Sections A, B, and C. The table below (Figure 30) presents a concise overview, focusing on the predominant sounds, activities, and overall atmosphere of each section that will be explained in detail in the following sections, along with an assigned label that captures the essence of the soundscape as it relates to urban public spaces.

Section	Character and Predominant Sounds	Activities Highlighted	Soundscape Label/Type
A	Dominated by vehicular traffic noise (honking, engines) near major thoroughfares, alongside human activity sounds from metro station proximity (footsteps, conversations). The space acts as a conduit for both	Vehicular movement, pedestrian flow around the metro station. Transient human interactions.	Urban Transit Corridor recordings

	vehicular and pedestrian traffic, embodying a sense of chaos and urgency.		
B	Divided into three sub-sections with distinct soundscapes: Ba (reduced mechanical noise, presence of fountain sounds), Bb (commercial activity, transactions), and Bc (tranquil atmosphere, optional leisure activities). Diversity in sounds, from social interactions to commercial hustle and tranquil moments, reflecting a vibrant place creation.	Ba: Natural and human-made sounds contributing to an accessible space. Bb: Commercial exchanges. Bc: Leisure and rest, affected by calls to prayer.	Mixed-Use Public Space
C	Near Daneshjoo Park, characterised by the diverse sounds of social interactions among various groups, including marginalized communities. Sounds include conversations, rustle of movement, phone talks, and ambient music. The proximity to the park enhances social interactions and the visibility of diverse groups, emphasizing the public and inclusive nature of the space.	Social gatherings, leisure activities, representation of diverse (including marginalized) communities.	Social Interaction and Inclusion Hub

Figure 30 SoundScape Type of Each Section

Section A ,The Urban Transit Corridor

The character of Section A is profoundly shaped by the design of the adjacent public square, the dynamic traffic flow at the intersection, and the proximity of a metro station. This observation aligns with the insights provided by Barrett and Miller (2004), who assert that each space is distinguished by a unique soundscape, intricately fashioned by both its physical layout and cultural milieu.

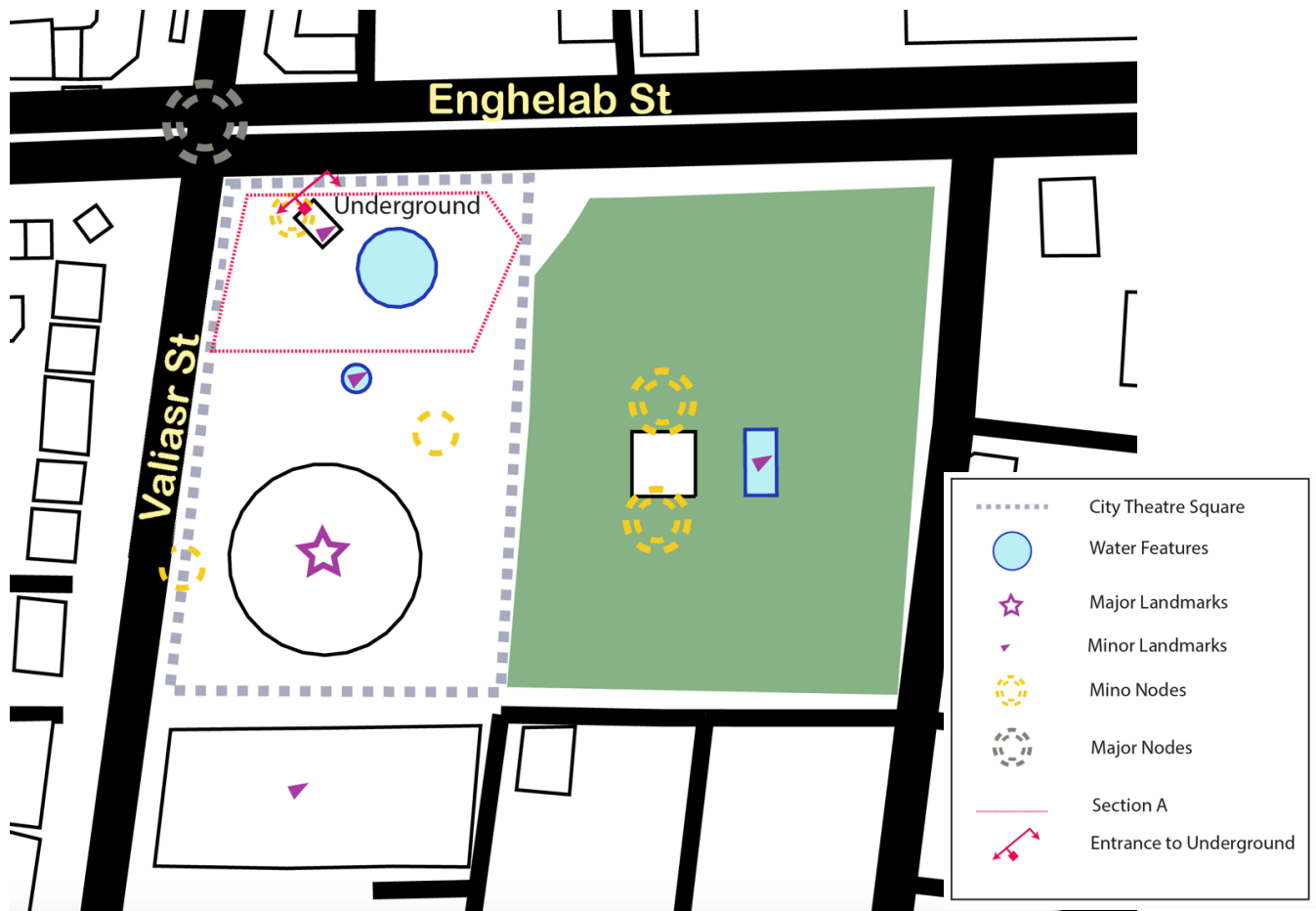


Figure 31 Section A

Section A is defined by its strategic position at the intersection and node where Enghelab and Valiasr streets converge, closely proximate to a critical point of urban flow (Figure 31). This area, being nearest to major thoroughfares, is primarily characterized by the sounds of vehicular traffic—honking horns, revving engines, and the continuous flow of vehicles. This auditory environment, often loud and unrelenting, creates a sense of chaos and urgency that permeates the space. In addition to vehicular noise, human activity—though more transient and consistent—also contributes significantly to the auditory landscape of this section. The presence of a metro station entrance within this segment of the public space, located in the northwest of Section A, introduces a variety of human sounds: people entering and exiting, footsteps on the stairs, and the general din of commuters in motion.

The entrance to Section A from the underground, facing the junction, acts as a conduit through which the sounds of the environment and the hum of traffic are not merely present but are intricately blended into the fabric of the area. This blending of sounds amplifies the auditory experience, making the transition from the bustling streets into Section A seamless integration of urban life's vibrancy and its chaotic rhythms. The proximity to the junction means that the soundscape here is a rich tapestry that combines the mechanical symphony of vehicles with the human elements of movement and interaction. These sounds underscore the area's role as a hub of movement and transition, emphasizing the dynamic nature of urban life.

The activities in Section A, therefore, are twofold. On one hand, the area is a conduit for vehicular traffic, embodying the energy and sometimes the congestion of urban transportation. On the other hand, it serves as a key pedestrian intersection, facilitating human flows and interactions catalysed by the metro station's accessibility. This juxtaposition of vehicular and pedestrian dynamics enriches the complexity of the urban experience, illustrating the multifaceted nature of public space usage and auditory experience in a bustling city environment.

This section is characterized by ephemeral auditory events which transient in their nature, serve as an acoustic reflection of the space's transitory character. Blesser and Salter (2007) emphasize the significance of such soundscapes in shaping our understanding and experience of spatial environments. They argue that these fleeting auditory experiences, though often overlooked, play a crucial role in defining the functional and emotional essence of a space. The flux of people entering and exiting the station underscores the area's function as a transitional space rather than a destination. This observation aligns with Tuan's (1977) notion that the movement patterns of people can significantly define the character of a space.

The transient sounds create a dynamic auditory environment that is constantly in flux. The conversations of pedestrians, brisk and sporadic, are indicative of the hurried nature of the space, where interactions are brief and purpose-driven rather than leisurely or contemplative. These transient sounds reflect the transitory nature of the space.

Moreover, the perpetual hum of city life, ever-present in the background, offers a sense of continuity and links the space to the wider urban landscape. In this context,

it is noteworthy to mention the public shared taxis, which on certain days vocally advertise to attract passengers to various city destinations. These taxis employ sound as a means of communication, effectively turning it into an informative beacon for potential passengers. My observations led me to realize that these auditory cues contribute significantly to the perception of this area as a transitional space, where the soundscape serves not just as a backdrop, but as an active component in defining the square's function and identity.

This auditory delineation plays a crucial role in shaping both the perception and behaviour of individuals within the area (Bull, 2007). The predominant transitory sounds in this public space, primarily identified as traffic noise, create a boundary that often overpowers human voices, thereby impeding effective communication. This acoustic dominance leads to a reduction in social interaction, reinforcing the space's identity as a transitional zone rather than a hub for gathering and socializing. This phenomenon stands in contrast to the principles of urban design, which emphasize the importance of creating welcoming and interactive spaces. While the visual aesthetics of the area, such as the inviting "Welcome to the City Theatre" sign, suggest a hospitable environment, the soundscape tells a different story. The auditory experience, in this case, becomes the forefront layer, overshadowing the visual appeal. This discrepancy highlights a significant aspect of urban design: the need to balance visual elements with other sensory stimuli to create truly welcoming and inclusive public spaces. The lack of auditory welcomeness, in this instance, detracts from the overall experience of the space, underscoring the complex interplay between various sensory dimensions in urban environments.

Moreover, the visual elements in Section A appear to be more dominant than other sensory stimuli, succeeding to invite people to stay or make the space lively. The noise can act as a barrier, both physically and psychologically, deterring people from using the space for communal activities or leisure, thus impacting its 'publicness'.

Finally, the soundscape of Section A might reflect broader cultural and social dynamics of Tehran – for instance, the bustling nature of city life, the challenges of urban planning, or the societal emphasis on movement and efficiency over leisure in certain areas. This perspective is supported by Lefebvre's (1991) concept in "The Production

of Space", where he argues that urban spaces and their characteristics reflect the broader social and cultural fabric of a city.

Section B, Mixed-Use Public Space

Section B stands out as the most diverse space in comparison to other sections, encapsulating a variety of sound types that to some extent contribute to its welcoming characteristic as a public space. (However, in the next section the observation will be assessed either users are counting this area as public space or not or welcoming?). This diversity in the soundscape is reflective of the standardised of public spaces, as discussed by Carmona et al. (2008) that the richness and variety of experiences in a public space are crucial for its vitality and attractiveness.

In Section B, this diversity is not only audible but also shapes the perception and use of the space. The area comprises three sub-sections with diverse character, each demonstrating a mix of sounds essential for vibrant place creation. Mix use design was encourage in urban design theory as Jacobs' (1961) emphasizes the importance of mixed-use developments for creating lively and engaging urban environments. I would like to emphasise that the mix of sound types could also result pleasant in the public space. However, this will also be assessed from user perspective in the next chapter.

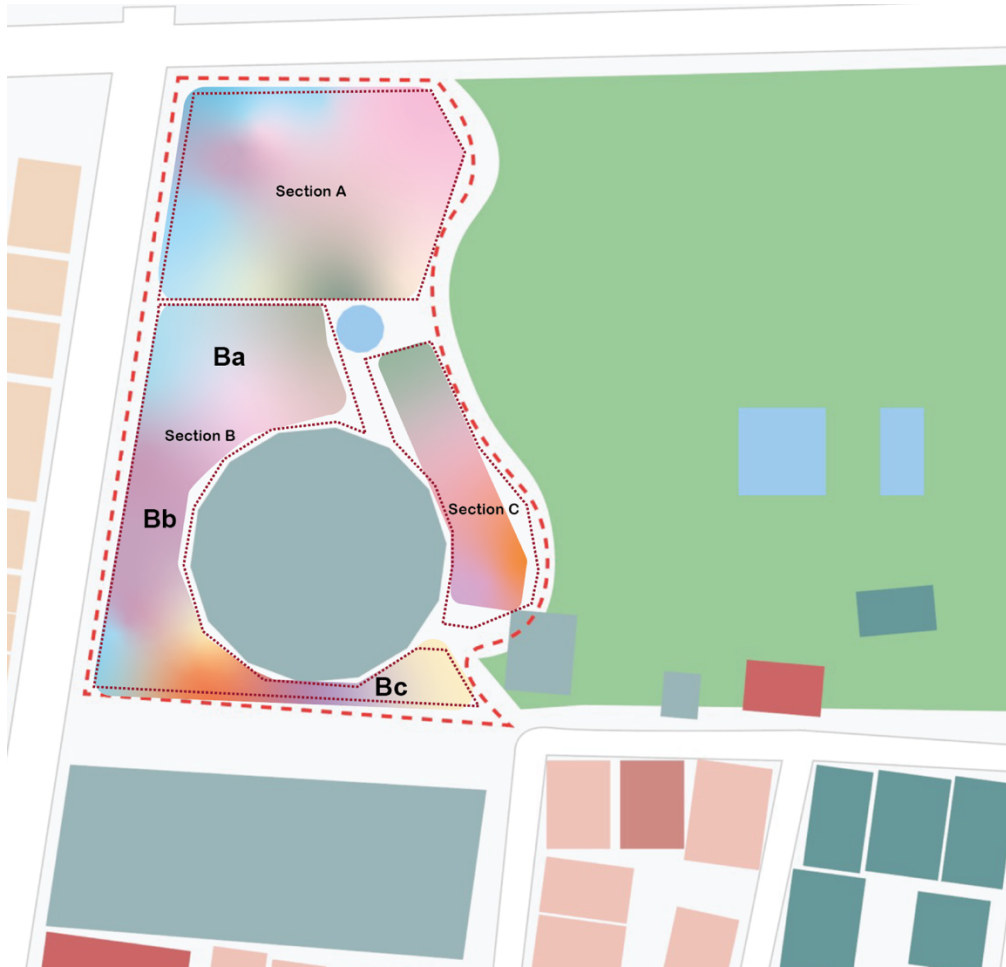


Figure 32 Subsections

After conducting several pilot studies in Section B of the area, I segmented it into three distinct subsections: Ba/ Bb/ Bc (Figure 12). This decision was informed by the findings that, in terms of assessment, the soundscape characteristics pointed towards smaller, acoustically defined zones with distinct Aural boundaries. Section Ba presents a soundscape markedly distinct from its counterparts, characterized by a diverse array of activities and a notable reduction in mechanically generated sounds. This acoustic shift becomes more pronounced as one progresses away from the main thoroughfares and delves deeper into the heart of the public space. Central to this area is a fountain, which plays a pivotal role in sculpting the auditory environment. The fountain's presence, while generally contributing to a unique ambiance, is subject to variability. On certain days, or at specific times, the fountain is inactive, leading to a notable alteration in the area's acoustic character.

This variability in the soundscape underscores the dynamic nature of Section Ba, where the interplay of sound and silence creates a fluid and ever-changing atmosphere. The presence or absence of the fountain's sounds not only influences the sensory experience of the space but also reflects the temporal rhythms of the public area.

From a perspective of urban design and social inclusivity, Section Ba emerges as a quintessential public zone. Its acoustic properties, influenced by both natural and human-made elements, contribute to a sense of accessibility and openness. The diminished presence of mechanical noise, coupled with the intermittent sounds of the fountain, fosters an environment that is both inviting and engaging, thereby enhancing the quality of the public space, and promoting inclusivity.

Moving towards Section Bb, which begins near the sound source and extends in front of and adjacent to the building, the area is predominantly characterized by commercial activities. Consequently, the soundscape here is rich with the auditory signatures of these transactions, a phenomenon that is perceptible both visually and aurally. It is important to acknowledge, however, that despite the volume of these interactions, they tend to lack depth in terms of social connectivity due to their primarily transactional nature.

Furthermore, this section presents a stark contrast to the more culturally oriented inner sections of the City Theatre public space. The commercial soundscape in Bb, dominated by the hustle of business exchanges, stands in juxtaposition to the cultural and social interactions that are more chief to the other parts. This distinction not only highlights the diverse functions within the space but also underscores the complex layering of soundscapes in urban environments, each contributing uniquely to the overall quality of the public space.

Adjacent to the back of the main building lies Section Bc, which presents a stark contrast to Bb. This area is characterized by a more tranquil atmosphere, where groups engage in various optional activities along the periphery of the building or are often observed resting. Notably, at three distinct times of the day, the sound from the modern mosque located behind the main building permeates the area, predominantly in Bc. While these auditory cues extend into Bb, they tend to diminish in intensity by

the time they reach Ba. This pattern of sound distribution suggests that Bc is an area more conducive to optional, leisurely activities.

The acoustic landscape of Section B, encompassing the lively chatter of social interactions and the nuanced dynamics of commerce, paints a vivid picture of how individuals interact with and navigate this space. The varied soundscape not only reflects the diverse functions and activities within each sub-section but also highlights the intricate relationship between sound, space, and social behaviour. In Summary section B defined by its unique auditory qualities, caters to different aspects of public life, from economic transactions to leisure and communal activities. This diversity in sound and function underscores the complexity of urban spaces and their capacity to accommodate a wide range of human experiences.

Section C, a Social Interaction, and Inclusion Hub

This part situated near Daneshjoo Park, serves as a melting pot for a variety of social groups, including both mainstream and marginalized communities, with a notable presence of LGBTQ+ individuals. Daneshjoo Park has become an important hub for these groups, especially for the LGBTQ+ community, acting as a crucial social gathering space. The proximity of this section to the park facilitates interaction among diverse social groups, creating a vibrant mosaic of activities and exchanges.

The array of sounds emanating from these varied groups, including those from marginalized communities, highlights the public nature of this space as a crucible of social interaction and representation. This diversity of auditory experiences aligns with modern theories of public spaces, which stress the importance of inclusivity and representation. Acoustically, the area is dominated by the sounds of human activity, such as conversations, the rustle of smoking, phone talks, and even the ambient presence of music. These sounds not only characterize the space but also give voice to its diverse occupants, reinforcing the role of public spaces as platforms for social visibility and interaction.

5.1.3 Soundscape and Publicness

Range of Activities

The most correlation found was the interaction of sounds and activities happening in this specific place. The capacity of a public space to not only accommodate but actively foster activities and social interactions is a crucial measure of its publicness. In this context, Theatre Square in Tehran emerges as a quintessential example, having been architecturally and functionally designed to promote the congregation and interaction of diverse groups.

During my empirical observations, specifically on Friday, August 21st, between 2:00 PM and 8:00 PM, I discovered an unexpected utilization of the space, deviating from its usual daily function as a transitional space to its original purpose as a social and cultural hub. The diary entry from this observation reinforces this point:

"Today, on Friday in August, the square becomes a hub for the younger generation. My observations reveal that the theatre, situated within the square, becomes particularly active between 5:00 PM and 10:00 PM. This period, known as the peak time, coincides with a theatre show called 'Gigantic Robots,' which lasts for 30 minutes. In addition, there are five other outdoor performances, all part of a theatre festival. The square is noticeably busier than usual, with the number of attendees doubling. Most notably, the demographic of the main users changes significantly, marking the first instance in recent months where the space has exhibited such vibrancy".



Figure 33 Top and Bottom: Street Performances

While the presence of certain spaces such as parks, mosques, and theatres contribute to creating a space for the public, Albrecht and Smith (2019) argue that these elements do not inherently foster sociability. They may establish a one-sided relationship between people and a programmed activity, but they do not necessarily promote communication and interactions among different social groups.

In this setting, visual elements alone were not enough to engage people as the crowd's attention was not solely focused on the visible aspects of the event. The auditory dimension played a crucial role in this scenario.

Theatre Square resonated with various sounds emanating from the street shows, particularly 'Gigantic Robots' and other performances. These sounds, ranging from music, dialogue, to special effects, acted as auditory beacons, drawing people towards the events. This rich soundscape, with its diverse auditory elements, was instrumental in transforming the square into a dynamic hub of activity, magnetically attracting a diverse array of individuals, and nurturing a sense of community and shared experience. The communal atmosphere was further amplified during the "Mareke Giri" (معرکه گیری) performances, which were quintessential expressions of Iranian street art. These performances captivated the audience through a blend of extraordinary demonstrations and direct interactions, leaning heavily on auditory stimuli rather than visual spectacles. The reliance on sound oversight in "Mareke Giri" was particularly noteworthy. I observed this event unfold twice during midday, demonstrating the unique ability of street performances to harness the expansive potential of a public space like Theatre Square. By creating an immersive aural environment, these performances encouraged visitors not just to pass through but to actively engage and immerse themselves in the experience.

The crescendo of sound levels, a confluence of the performances and the swelling crowds, became a palpable measure of the square's publicness. In the urban tapestry of Tehran, the vibrancy and vitality of a public space are often most discernibly captured through its soundscape. The auditory vibrancy on this day was a stark contrast to the more subdued, quieter periods, underscoring the transformative power of sound in urban spaces. This dynamic soundscape not only signified the square's role as a lively, active public space but also highlighted the integral role sound plays in enhancing urban publicness. By fostering vibrant,

interactive, and inclusive environments, soundscapes like those in Theatre Square reveal the profound impact of auditory experiences in shaping the social and communal fabric of urban public spaces.

Diversity and Inclusivity in Soundscapes

The auditory landscape on this day was marked by a rich tapestry of sounds, ranging from the dramatic flair of theatrical performances to the lively hum of the crowd. This diverse soundscape played a pivotal role in fostering an inclusive and dynamic atmosphere. The variety of auditory experiences reflected the heterogeneity of the space's users, encompassing a wide range of age groups and cultural backgrounds. Such auditory diversity is instrumental in making public spaces more welcoming and accessible, catering to a broad spectrum of society.

Challenges in Realizing Public Space Potential: The current utilization of public space presents challenges to its intended publicness. The presence of vendors has transformed a significant portion of the area into a commercial zone, shifting the focus away from intellectual and cultural exchanges. Additionally, designated resting areas primarily serve labourers and specific social classes, raising questions about inclusivity. Observations also reveal a trend of individualization, with many people using phones and AirPods, indicating a lack of interest in social interaction. This behaviour suggests a departure from the traditional concept of public spaces as areas of communal engagement.

The Role of Traditional Activities in Public Spaces: One notable event during my observation was an individual participating in 'Mareke Giri,' a traditional activity. This event stands in stark contrast to the prevailing trends of commercialization and individualization. 'Mareke Giri,' with its deep cultural roots and interactive nature, represents a form of engagement that recalls the more traditional uses of public spaces. Such activities can play a crucial role in revitalizing the publicness of the space, fostering communal participation, cultural exchange, and countering the prevailing trends of commercialization and individualization.

5.1.3 Conclusion

In this comprehensive analysis of Theatre Square's soundscape and its correlation with the concept of publicness, I uncovered the role sound plays in shaping the

dynamics of urban spaces. It reflects on the broader notion that urban spaces are not just physical entities but are also shaped by the sensory experiences they offer. These experiences, particularly the auditory ones, contribute profoundly to the spatial identity and user experience, enriching our engagement with urban environments.

In City Theatre Square, my observations and sensory ethnography revealed that sound significantly influenced both the activities within the square and the creation of distinct sub-zones, each tailored to facilitate specific interactions more comfortably. This led me to delineate various zones within the square, each characterized by its unique soundscape qualities. Through this approach, I aimed to highlight how auditory environments shape the function and atmosphere of urban spaces, segmenting the square into areas that each offer a different experience and level of engagement. This nuanced understanding of sound's role in urban spaces underscores its potential to create environments that are not only diverse in function but also in sensory experience, fostering a more organized and enjoyable public space.

The Urban Transit Corridor designation for Section A encapsulates its primary function as a transit space, where the auditory backdrop is heavily influenced by urban transportation noises such as vehicle movement and pedestrian flows associated with the metro station. This environment is marked by a sense of dynamism and a certain level of chaos, mirroring the rapid pace and complexity of urban life. The soundscape here, filled with honking horns, revving engines, and the constant motion of people, serves as a vivid auditory reflection of the section's role as a vital artery in the city's transportation network.

Moving to Section B, labelled as a Mixed-Use Public Space, is an area that supports a wide range of activities and experiences, underpinned by a diverse and rich soundscape. This section's auditory environment varies significantly across its sub-sections, from the serene sounds emanating from a fountain to the bustling noise of commercial transactions and the quieter zones designed for relaxation and leisure. The varied soundscapes within Section B contribute to its vibrancy and appeal, offering a snapshot of urban life that accommodates both the hustle of commerce and moments of tranquillity.

Section C is aptly described as a Social Interaction and Inclusion Hub, spotlighting its importance as a venue for diverse social interactions and inclusivity. The soundscape

is predominantly shaped by the voices and activities of a wide array of social groups, including marginalized communities, making it a rich tapestry of human experience. The auditory characteristics of this section—conversations, ambient music, and the sounds of social gatherings—reinforce the notion of public spaces as critical platforms for fostering social connections and ensuring visibility for all segments of society.

Together, these labels and their associated soundscapes provide an understanding of the spaces within the urban environment, each playing distinct roles that contribute to the city's social and functional fabric. This analysis not only defines the sections by their predominant auditory experiences but also shows the importance of soundscapes in shaping our perception and interaction with urban spaces, reflecting their broader implications for urban planning and community engagement.

The significant role of sound in facilitating this transformation becomes evident as auditory cues from street performances, like 'Gigantic Robots', and traditional Iranian street art performance, 'Mareke Giri', draw people into a shared communal experience. These sounds transcend mere background noise, evolving into pivotal elements that magnetize diverse groups, thereby enriching the square's publicness. This dynamic soundscape serves as a testament to the square's ability to morph into a space of vibrant activity, transcending its everyday function and redefining its contribution to urban life.

However, the exploration also touches on challenges that urban public spaces face in maintaining their intended publicness. The commercialization of areas and the trend towards individualization, highlighted by the prevalence of personal electronic device usage, pose significant obstacles to fostering inclusive communal interactions. Despite these challenges, the resurgence of traditional activities like 'Mareke Giri' offers a glimpse into the potential for public spaces to reclaim their role as centres for cultural exchange and communal engagement.

The final reflections on City Theatre Square's soundscape reveal how sound plays an engaging role in shaping social interactions and the character of Tehran's urban spaces. Auditory experiences significantly impact spatial identity and enhance the way people interact with place, highlighting the need for soundscapes to be a fundamental consideration in placemaking. This approach not only supports a variety of activities but also fosters social connections and inclusivity. Theatre Square exemplifies the

transformative power of sound in urban areas, demonstrating its capacity to invigorate public spaces. This case underscores the importance of recognizing the auditory dimension as essential in cultivating vibrant and inclusive urban environments.

5.2 Keshavarz Boulevard: A Symbol of Socio-Political evolution of Tehran

This section focuses on a unique urban corridor that stretches from Vali Asr Street to Felestin Street, known historically as Elizabeth II Street before being renamed Keshavarz Boulevard, meaning "Farmer," following the Islamic Revolution. Situated near the Ministry of Agriculture and adjacent to Laleh Park, one of the city's oldest parks, this boulevard is nestled among significant buildings and serves as a border to an important urban green space. Originally constructed alongside a river leading to Karaj in 1957 by the artist Sarfaraz Ghazni, the boulevard was once vital for providing local water to Tehran's citizens before the advent of modern sanitary systems.

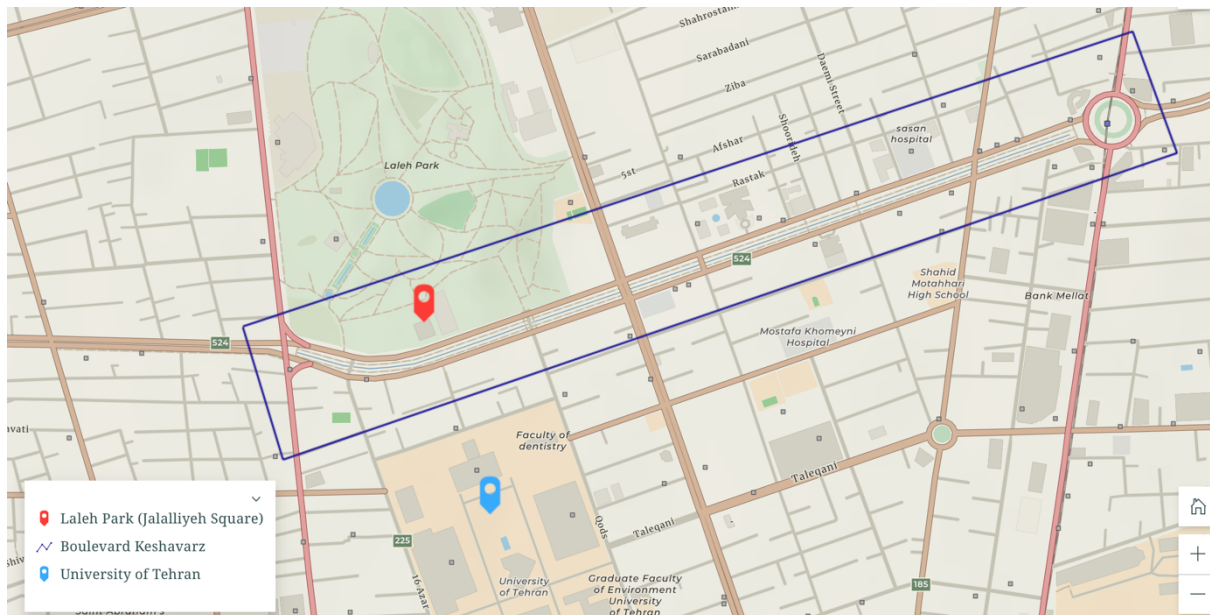
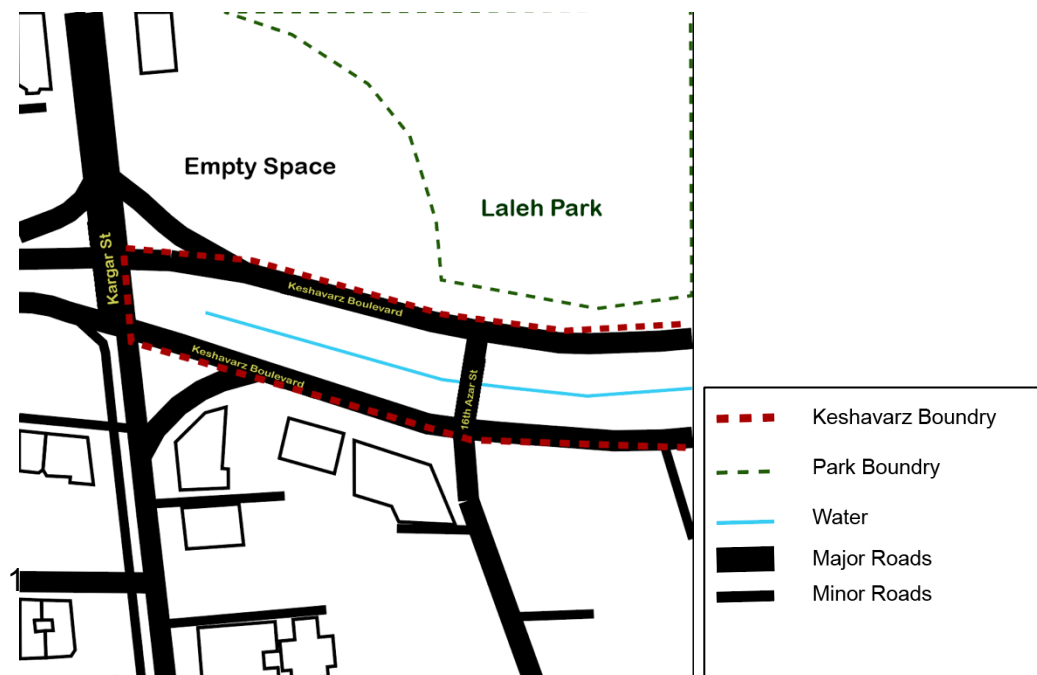


Figure 34 Above map and below map: Keshavarz Boulevard Location



Although the river no longer flows all the time, Keshavarz Boulevard has retained its role as a leisure space amidst the bustling city, even as the adjacent streets have grown busier, becoming key thoroughfares that connect diverse parts of the urban landscape. This public space, characterized by its open access and minimal physical structures, is enveloped in greenery, creating a serene escape in the heart of the city that I will explore more from two perspective to find a correlation, first I will analyse this public space from urban design perspective and later analysing the soundscape.



Figure 35 Keshavarz Boulevard

5.2.1 Urban Design Analysis

Historical Context

A notable historical fact about the boulevard's new name ("Keshavarz") relates to the early months of the revolution; Keshavarz Boulevard intersects with Kargar Street, "labour" in Persian, creating a significant junction. The intersection of Keshavarz ("farmer") and Kargar ("labour") led to an intriguing, Marxist-inspired satirical new name during this era. Drawing from various oral histories and popular accounts, this crossroad was humorously dubbed the "Hammer and Sickle" intersection. The new name cleverly symbolizes the union of agricultural and labour forces, reflecting the socio-political atmosphere of the time.



Figure 36 Keshavarz Boulevard in 1950

Constructed in 1957 alongside a river flowing towards Karaj, this space was the brainchild of artist Sarfaraz Ghazni. Historically, the river served as a primary water source for Tehran's residents before the development of modern sanitation systems. However, the river no longer flows. Since its inception, Keshavarz Boulevard has been a popular leisure spot. Yet, its role has evolved as the adjacent streets have become busier, transforming into major thoroughfares connecting various city areas.

Keshavarz Boulevard has played a significant role in the public and political life of Tehran. Initially a modest, unstructured passage, it transformed into a modern, green, and expansive boulevard, symbolizing an idealistic vision of modern Tehran, and

providing spaces for public gatherings. Located at the city's northernmost border in 1960 and adjacent to the University of Tehran, it became a focal point for socio-political activities.

The boulevard's history is marked by diverse uses and events. In its early days, it was adjacent to Jalaliyeh Square (later Laleh Park, red circle in figure 37), a site for military parades and practices, including military music performances and horse races, blending military and sports-leisure activities. A significant political event occurred in May 1961 when the opposition nationalist party, Jebhey-e Melli (The National Front), held a large meeting there, attracting between 20,000 to 140,000 people. This meeting, a sonic expression of opposition, was a turning point for many reformists, leading to increased political activism and arrests of key figures on the boulevard.

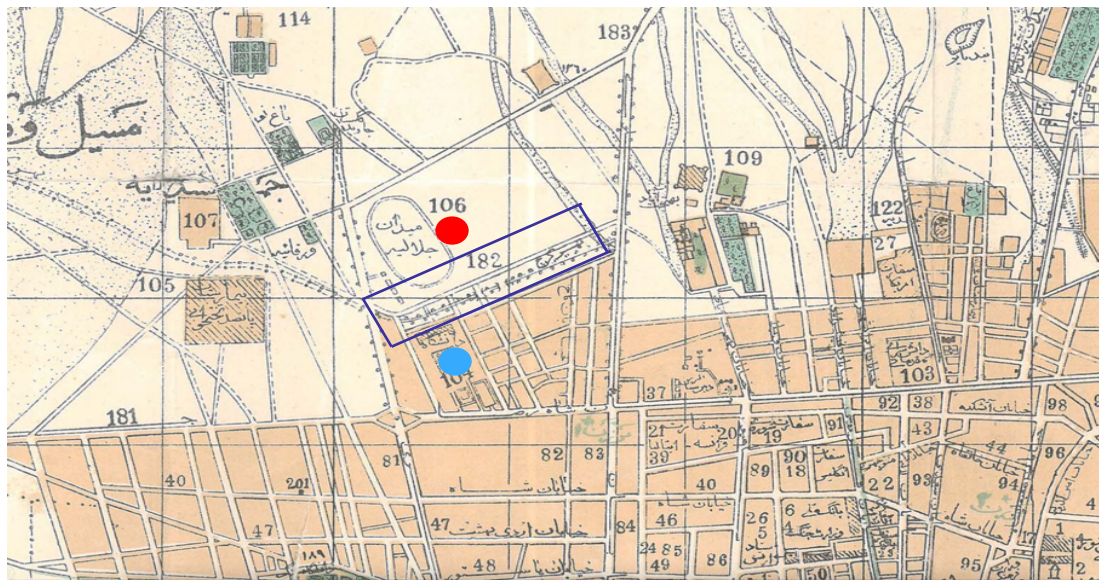


Figure 37 Historical Map from 6th District City Authority edited by author.

In addition to its role in peaceful political gatherings, Keshavarz Boulevard was also the site of more violent political incidents. In 1973, on the tenth anniversary of Shah's "White Revolution," members of the Mujahedin, a Muslim-Marxist opposition group, bombed three buildings belonging to international oil companies located on the boulevard. These events underscore the boulevard's importance as a space for both political expression and conflict, reflecting the broader narrative of left-wing politics in Iran.

Keshavarz has been a hotspot for many gatherings, meetings, and protests until the day. During the political unrest of 2009, which was the most widespread of its kind after the revolution, protesters gathered in the central streets of Tehran, including Keshavarz Boulevard, chanting their rhythmic slogans some of which are still famous: “Natarsid, Natarsid, Ma hame ba ham hastim” (“Do not fear! Do not fear! We are all together!”), or “Moussavi, Moussavi, ra’y-e ma ro pas begir” (“Moussavi! Moussavi! Get our votes back!”), and “Marg bar dictator” (“Death to the dictator!”). In the same year, a famous talk by Ayatollah Rafsanjani, the reformist cleric, famously brought thousands of mostly secular protestors to public prayer in the streets, from the University of Tehran to Keshavarz Boulevard.

Form and Function

Keshavarz boulevard shares a similar structure and plan with other boulevards, accommodating both pedestrian and vehicular traffic. Its form and structure are reminiscent of Western boulevards. Stretching over eight uneven blocks, Keshavarz Boulevard spans 2.2 kilometres from Laleh Park in the west to Valiasr Square.

The term 'boulevard' often evokes images of Paris, with its tree-lined streets, cafes, elegant buildings, shops, warm lights, and bustling crowds. Parisian boulevards are noted for their broad avenues, interspersed with trees and buildings that harmonize in height and architectural details, thereby defining their edges.



Figure 38 Parisian Boulevard, from Montegery (2007)

The design of Keshavarz Boulevard draws inspiration from both Persian Charbagh gardens and French boulevard architecture. Charbagh, a classic element in Iranian urban design, has influenced the city's layout, characterized by prominent buildings at its termini, thus directing the city's expansion linearly in this direction. The Iranian Charbagh, with its historical precedence over Parisian boulevards and detailed depictions by European travellers, is considered by some experts, including Habibi (1995), as a precursor to the contemporary boulevard's formation.

Originating in 1596, Charbagh is an Iranian urban design style that creates pathways leading to significant buildings, often a palace. It embodies essential elements of Persian culture: earth, heaven, water, and plants. Keshavarz Boulevard evolved from a water channel known as Karaj, which served both as an irrigation source and as a water supply for Tehran's residents. The boulevard's pathways were developed parallel to this water channel, extending towards Valiasr Square. Unlike the Charbagh structure, which typically leads to an urban landmark, Keshavarz Boulevard does not culminate in a significant landmark at its end.

The design of Keshavarz Multi-way Boulevard is cantered around a waterway, which bifurcates the area into multi-lane roadways flanked by tree-lined paths on either side of the stream. This layout achieves a symmetrical balance on both sides of the waterway, resulting in a visually appealing and uniformly distributed space. Such symmetry is not only characteristic of Persian gardens but also serves as an urban landscaping strategy to enhance aesthetics, as noted by Naghizadeh (2003). In Keshavarz Boulevard, this symmetry is evident in the central open space, the positioning of streams, and the strategic placement of vegetation and rows of trees along the street and sidewalks (Figure 40).



Figure 40 Boulevard Keshavarz 1975, from 6th District city authority archives.

The pedestrian areas, distinguished by green grassy edges, are distinctly separated from the main roads. Keshavarz Boulevard strikes a balance between being overly expansive and excessively narrow. It offers an efficient width and ample space, accommodating both individuals and groups comfortably, thus facilitating leisurely strolls.

Along Keshavarz Boulevard, substantial areas of land on both the northern and southern sides are dedicated to parks and buildings. The architectural landscape along the street is diverse, with buildings varying in height, size, and overall appearance. The street is thoughtfully furnished with elements such as trees, a bike lane, signage, public transit stops, and outdoor seating areas (Figure 41). These features are arranged in a way that they do not clutter or obstruct the designated pedestrian zones, thanks to a well-defined furniture zone.

The orientation of the buildings along Keshavarz Boulevard is noteworthy; they all face the boulevard, maintaining a respectful distance from the public open spaces. This

arrangement creates a clear demarcation between private properties and the public realm, with the bustling main road acting as a barrier. This thoughtful urban planning ensures that the boulevard remains a welcoming and accessible space for pedestrians, enhancing the overall experience of the area.

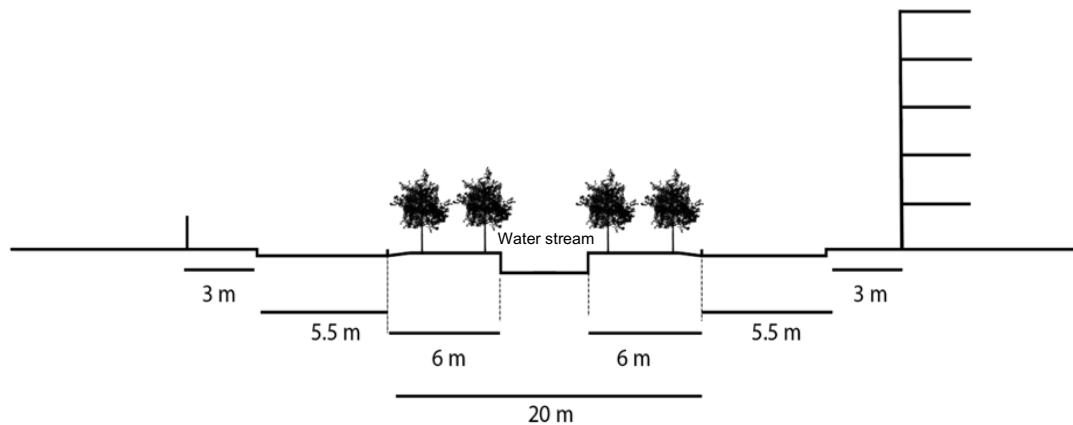


Figure 41 Boulevard Keshavarz Section by Author

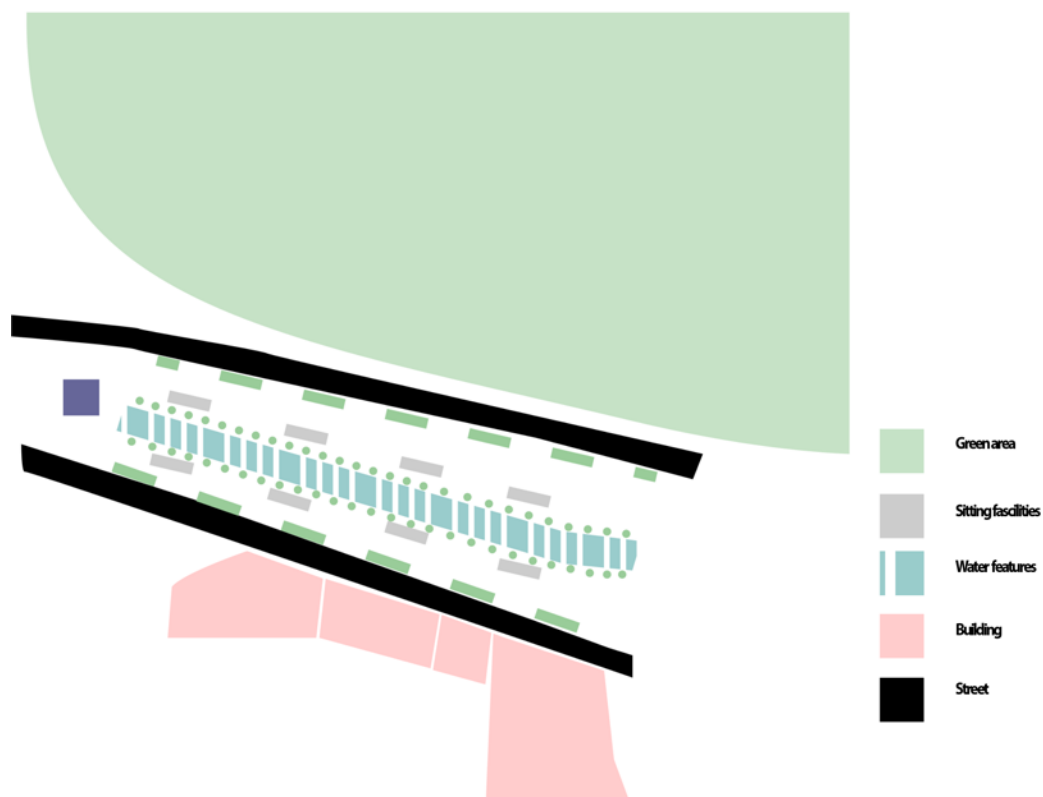


Figure 42 Keshavarz Boulevard Facilities

The architecture of the buildings along Keshavarz Boulevard, as well as the boulevard's materials and design, diverge from the standard types seen in boulevards worldwide. While the pedestrian zone within the boulevard presents a more cohesive aesthetic, the buildings exhibit a variety of architectural styles. Most of these structures align with the 'Sabke Meli' architectural style, which emerged in the early 1930s and evolved towards more modernist designs. Characteristics of this style include flat roofs, non-load-bearing walls often clad in glass or masonry, and a general absence of decorative elements (pictures below).



Contrary to typical boulevard features, Keshavarz Boulevard stands out uniquely; the sidewalks and surrounding architecture lack the elegance or sophistication often associated with boulevard environments. This distinct architectural approach gives the boulevard its own unique character, setting it apart from more traditional, ornate boulevard designs.

Land Use and Activity

In the analysis of land use along Keshavarz Boulevard in Tehran, it becomes evident that the boulevard is predominantly characterized by office spaces. Compared to other types of land use, offices significantly dominate the landscape, shaping the boulevard's daytime activity. Beyond the prevalence of office use, the boulevard also

accommodates a notable presence of healthcare facilities, including clinics, medical centres, and two hospitals. This concentration of healthcare services adds a specific functional character to the area, influencing both pedestrian and vehicular traffic patterns.

However, there is a relative scarcity of restaurants and cafés along Keshavarz Boulevard, a factor that potentially detracts from the vibrancy and pedestrian-friendly nature of the area. The limited number of dining and leisure options could be a contributing reason why the boulevard experiences diminished side-street activity and vibrancy, particularly outside standard office hours. This observation suggests that the boulevard functions primarily as a conduit for vehicular traffic, with pedestrian activities and leisure uses less pronounced on the sidewalks of the boulevard due to the current land use configuration.

Laleh Park, serving as a key destination, significantly contributes to the attractiveness of the area, drawing people to its vicinity and enriching the urban experience. Additionally, the pedestrianized central strip along Keshavarz Boulevard plays a crucial role in creating a vibrant hub of activity. This dedicated pedestrian zone, running the length of the boulevard, transforms the middle section into an engaging and lively space. It encourages foot traffic and social interactions, fostering a sense of community and making it a focal point for both leisure and transit.

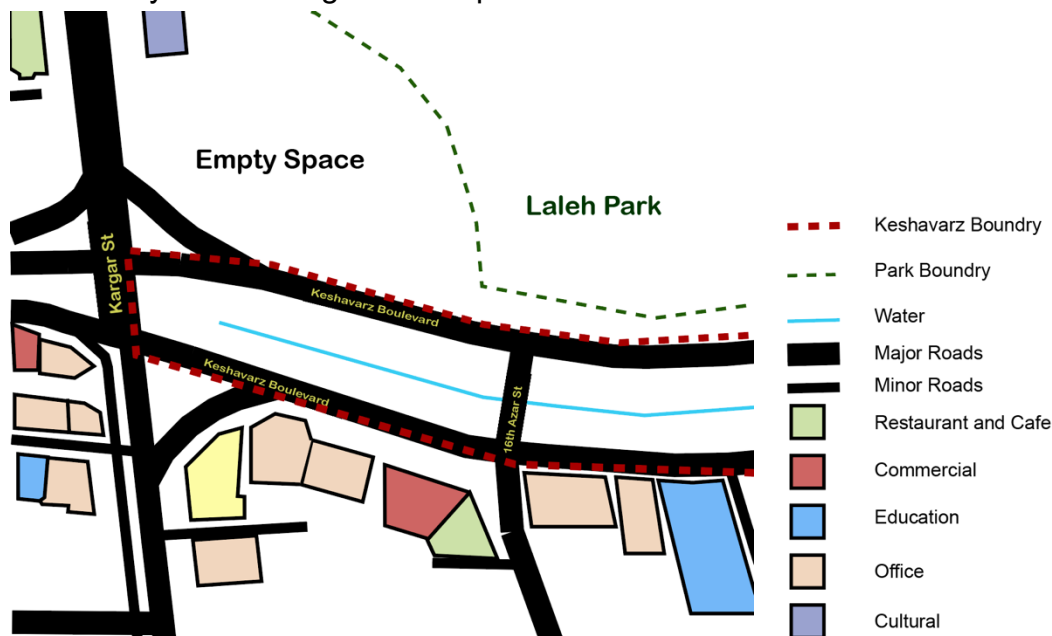


Figure 43 Land Use Map

Activity

Based on the behavioural mapping that inspired by Whyte (1980), I explored the activities and behaviours occurring within a specific public space, employing a systematic approach to categorize and quantify the observed actions of individuals. Next related them with the sound data in figure 44. To elucidate the dynamic interplay of human activity, design features, and their frequency, I organized the collected data into comprehensive tables, each aligned with different activity levels, Optional, Necessary, and social activities, along with an in-depth look at Moving Activity.

Activity level	Activity Type	Design Feature	Frequency
Optional	Cycle	Pathway	11
	Exercise	Benches	5
	Using phone	Pathway	28
		Benches	39
	Looking and listening	Pathway	12
	Lying	Benches	20
		Grass	5
	Sitting	Benches	62
Grass		5	
Total			

Figure 44 Table behaviour mapping information and notes of my observation sessions.

Necessary activities encompassed those essential for or incidental to the purpose of visiting the public space. Walking, as a primary mode of navigation through the boulevard, emerged as the most frequent necessary activity, illustrating the pathways' role in facilitating movement. Walking to cross at designated end points or corners and eating on benches or grass were also noted, painting a picture of the boulevard as a transit route interspersed with moments of rest and refreshment.

Activity level	Activity Type	Design Feature	Frequency
Necessary	Walk	Pathway	43
	Walk to cross	End points/Corners	41
	Eat	benches	12
		Grass	2
	Total		98

Figure 45 Table behaviour mapping information and notes of my observation sessions.

Social interactions within the boulevard were predominantly cantered around talking, with pathways being a crucial facilitator for these engagements. Lesser frequencies of playing at end points and having conversations on benches suggested varied uses of the space for socializing, further substantiated by interactions observed along pathways. These social behaviours underscored the boulevard's role as a communal hub, where the physical environment supports and enhances the social fabric of the community.

Activity level	Activity Type	Design Feature	Frequency
Social	Talking	Pathway	39
	Playing	End points	3
	Having Conversations	benches	33
		Grass	2
	Interactions	Pathway	7
	Total		84

Figure 46 Table behaviour mapping information and notes of my observation sessions.

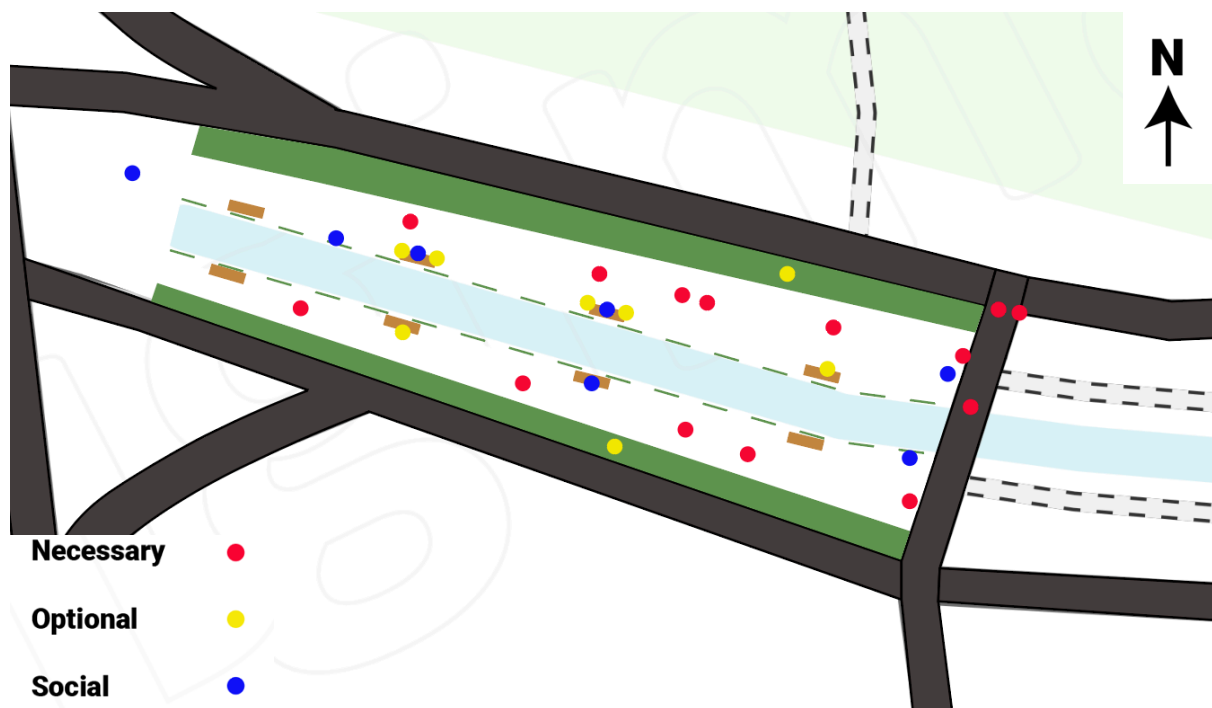


Figure 47 Behaviour Maps from my mapping

Walking emerged as a dominant activity, serving both necessity and social purposes. The intention behind walking varied, with exercise being a notable motivator, as evidenced by the pace of walking and attire of the participants. This activity also fostered public sociability, with a significant number of individuals walking in pairs or groups. This observation highlighted the boulevard's capacity to facilitate both individual and collective engagements, emphasizing its role in promoting public sociability and community cohesion.

Through this analysis, it became evident that the design features of the boulevard—pathways, benches, grassy areas, and corners—play a pivotal role in shaping the spectrum of human activity and interaction within the space. The variety of activities, from solitary phone use to group social interactions, reflects the boulevard's nature as a space that accommodates diverse needs and preferences, contributing to its vibrancy and appeal as a public space.

Legibility

The legibility of Keshavarz Boulevard is enhanced by several key factors, including its distinctive landmarks, comprehensive path network, defined edges, strategic nodes, and its unique soundscape. These elements collectively shape the way individuals perceive and interact with the space. In the forthcoming sections, this thesis will delve into these aspects in detail. Initially, I will examine the boulevard's legibility through the lens of Kevin Lynch's urban design principles, focusing on how its physical and visual features contribute to navigability and spatial understanding. Subsequently, I will investigate the role of the soundscape in influencing legibility, conducting a dynamic analysis to uncover how auditory experiences impact the way people navigate and experience Keshavarz Boulevard. This two-pronged approach will provide a comprehensive understanding of the factors that make Keshavarz Boulevard a navigable and memorable urban space.

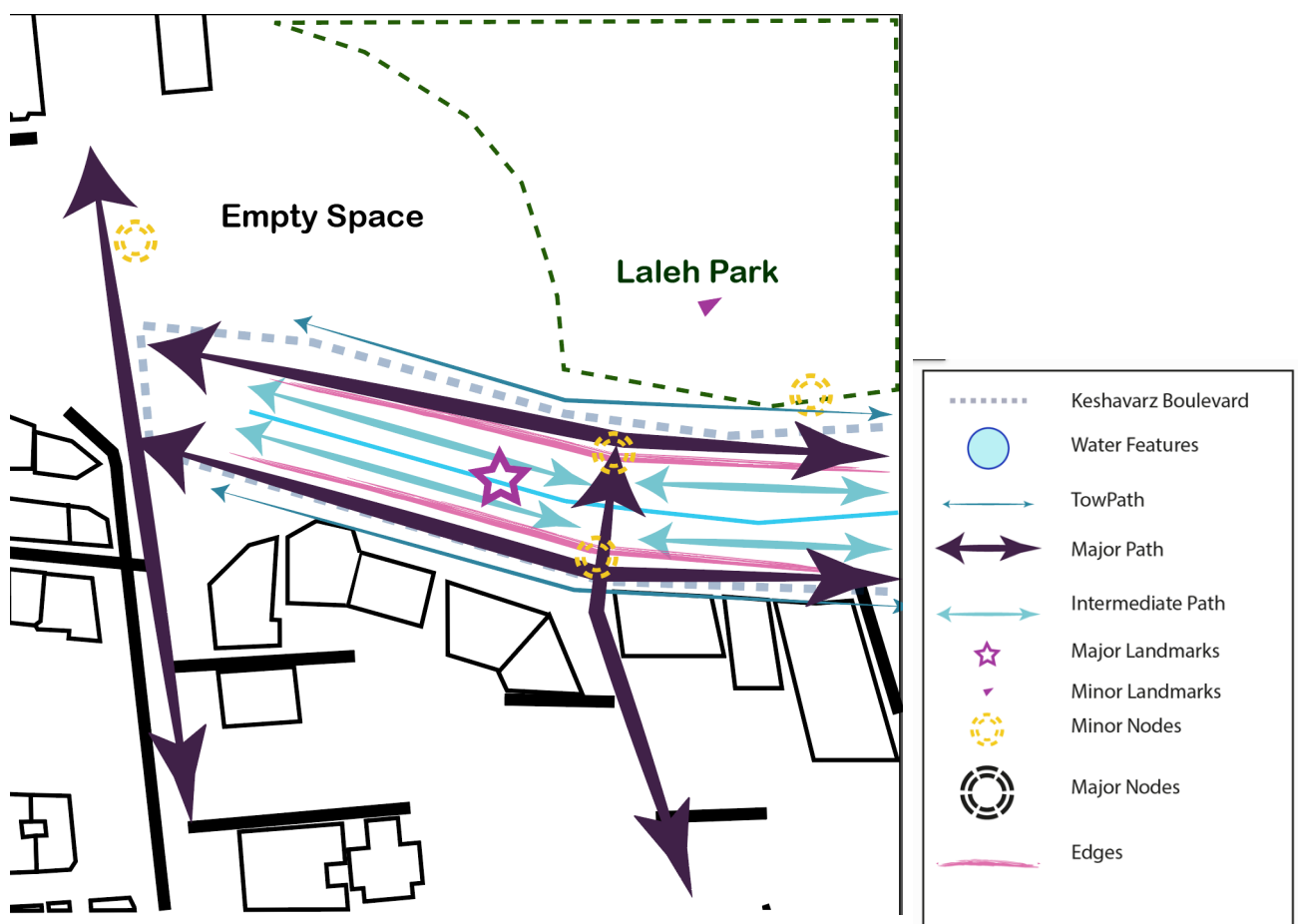


Figure 48 Legibility Boulevard Keshavarz

Landmark

Keshavarz Boulevard stands as a significant landmark in Tehran, not just for its physical presence but also for its profound impact on the city's navigational, cultural, and historical landscape. Bordered by Laleh Park, one of Tehran's oldest and most popular parks, and distinguished buildings like the Pars Hospital, the boulevard serves as a vital point of reference for both residents and visitors. These landmarks, with their rich history and visual appeal, not only enhance the boulevard's identity but also facilitate orientation, making it a well-trodden route within the urban matrix.

The boulevard itself transcends its role as a mere thoroughfare, emerging as a pivotal landmark that guides movement towards major urban nodes like Kargar Street and Vali Asr Square. Its reputation as a familiar landmark within Tehran underscores its importance in the city's collective consciousness. This recognition is not solely based on its utility for navigation but also on its embodiment of Tehran's urban and cultural narrative. Delving deeper into the essence of Keshavarz Boulevard's landmark status, it's essential to consider its historical evolution, which intertwines closely with the socio-cultural fabric of Tehran. Since its inception, the boulevard has witnessed and facilitated numerous social and cultural events, embedding itself in the city's historical narrative. The architectural diversity along its stretch, ranging from modernist facades to traditional Persian motifs, and the presence of public art installations contribute to its unique aesthetic and historical significance. These elements not only beautify the space but also tell the story of Tehran's architectural and cultural evolution.

However, it's noteworthy that within the expansive stretch of Keshavarz Boulevard, there exists a void of smaller, identifiable landmarks. This absence may pose a challenge to its legibility and the depth of interaction it fosters with inhabitants and visitors. The introduction of such landmarks could enhance the boulevard's narrative, creating intimate points of engagement and further enriching its historical and cultural layers.

Paths

As a major corridor connecting Vali Asr Street to Felestin Street, Keshavarz Boulevard serves as a significant path in Tehran's urban layout. Its role as a connector between

key parts of the city enhances its legibility by integrating it into the broader network of streets and avenues. The boulevard's historical context, evolving from a river path to a major urban road, adds to its significance as a thoroughfare, embedding it deeper into the city's collective memory and spatial understanding.

Edges

It becomes evident that the delineation of spaces along this urban corridor does not conform to the starkness typically associated with major urban edges. The boulevard's periphery is defined more by physical barriers than by active, engaging frontages, which contributes to a somewhat diluted sense of boundary. Unlike the vividly demarcated edges that sharply contrast adjacent urban zones, Keshavarz Boulevard's edges are subtle, fostering a gradual transition between spaces rather than an abrupt division.

However, the pedestrian zone along Keshavarz Boulevard emerges as a significant edge, serving as a buffer between the bustling vehicular lanes and the more tranquil, pedestrian-oriented areas. This zone is characterized by softer landscaping elements, including grassy areas and strategically placed green buffers, which not only enhance the aesthetic appeal of the boulevard but also perform a critical function in spatial definition. These green spaces and the intentional distancing from the vehicular roads create a perceptible separation, delineating the pedestrian area from the surrounding urban hustle. This separation is crucial in maintaining the legibility of the boulevard as a distinct urban space, allowing pedestrians to navigate and experience the area without the overwhelming presence of vehicular traffic.

To further enhance the edge definition and improve legibility along Keshavarz Boulevard, the incorporation of more active frontages could be considered. Activating these edges with features such as sidewalk cafes, public art installations, or interactive landscapes could transform these transitional zones into vibrant interfaces that encourage engagement and interaction. By doing so, the boulevard could foster a stronger connection between the pedestrian zone and its urban context, turning these edges into dynamic thresholds that invite exploration and contribute to the overall vitality of the public realm.

Nodes

It is observed that this urban corridor hosts various points of interest and convergence, such as intersections with key thoroughfares, access points to Laleh Park, and vicinities adjacent to cultural institutions. These areas serve as nodes within the urban fabric of the boulevard, places where pedestrian flows intersect and where public life has the potential to coalesce. However, upon closer examination, it becomes apparent that these nodes operate on a relatively minor scale, lacking the robustness and draw typically associated with major urban nodes. This observation suggests a missed opportunity for fostering more concentrated social interactions and communal activities along the boulevard.

The scattered nature of these minor nodes contributes to a dispersion of the population across the boulevard, rather than encouraging gathering and interaction in a few well-defined areas. This dispersal can dilute the intensity of urban life and interactions that are crucial for vibrant public spaces. The absence of significant, magnetic nodes along Keshavarz Boulevard points to a potential area for urban design intervention. By reimagining and reinvigorating these nodes, there's an opportunity to transform them into major points of attraction that can enhance the boulevard's role as a social and cultural hub.

Accessibility, Inclusivity and Diversity

The urban fabric of this neighbourhood was established well before the era of automobile dominance, having been designed primarily for pedestrian use, which was the main mode of transportation at the time.

Boulevard Keshavarz is seamlessly integrated with public transport, boasting sufficient infrastructure and a well-coordinated nodal system that facilitates easy access to public transportation. The street pattern is designed to enhance pedestrian flow, offering multiple pedestrian options in this area.

This public space is open and accessible to the public throughout the day. Characterised by minimal physical structures, it is bordered by lush vegetation and flanked by two parallel streets, forming a rectangular space in the centre.

The typical entry access points to the boulevard's pedestrian zone are from both sides of a smaller blocks, indicated by purple arrow lines on the map (Figure 50).

The boundaries of this public space are delineated based on specific categories that define the area's limits. I have segmented the study site area, marked by white dashed lines, into three smaller zones, each characterized by different types of barriers.

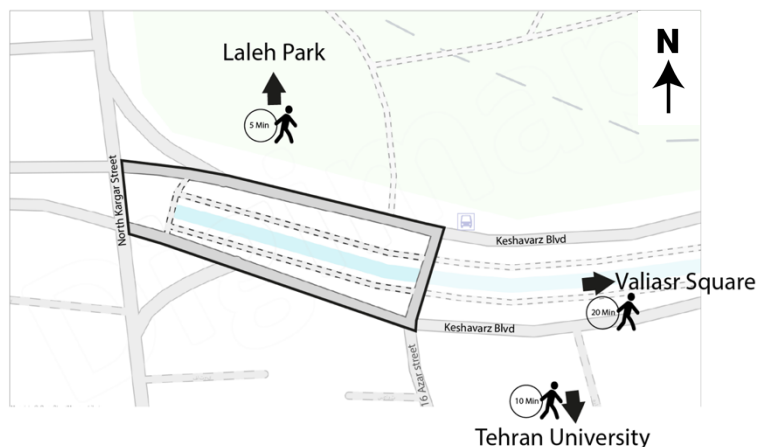


Figure 49 Access to the nodes of the neighbourhood



Figure 50 Boulevard Keshavarz Accessibility map

The section of the boulevard highlighted in yellow appears to be an addition made after the original design. It is closely bordered by a busy area. The boulevard is further divided into a northern section, marked in orange, and a southern section, colored green. This division is due to the presence of a natural barrier – water – that distinctly separates these two parts of the boulevard. Unlike the unified structure of Persian gardens, these two areas are not perceived as a single entity in some respects. The visual elements on each side of the boulevard differ significantly. The orientation of the benches, angled outward, further demarcates these two public spaces. Additionally, the absence of a central monument at the end of the boulevard and the lack of rhythmic symmetry on both sides contribute to this division.

The Boulevard, along with its central pedestrian space, boasts excellent accessibility via public transport and pedestrian pathways. The pedestrian facilities within and along the boulevard ensure robust access and convenience for foot traffic, indicating strong connectivity to other areas.

Strategically located in the heart of the city, the boulevard's design prioritizes pedestrian movement. The sidewalks are well-defined, and the central pedestrian pathways offer easy crossings between different parts of the boulevard, enhanced by adequate lighting. On average, it takes about 20 minutes to walk from the boulevard to Valiasr Street, leading to the public transport hub at Valiasr Square. However, the

area currently lacks sufficient bus stops and metro stations. Notably, a new metro station is under construction on the northern side of the public space, adjacent to the park.

Car traffic is heavier towards Valiasr Square (the southern part) compared to the flow towards North Kargar intersections. In terms of public transport, the cars are predominantly shared taxis, supplemented by motorcycles and buses on the streets. Interestingly, a significant proportion of pedestrians seem to be moving away from the main road networks, either towards Laleh Park or exiting from it. At peak times, the most substantial pedestrian movement is observed at street intersections. However, the central pedestrian path in the boulevard is consistently utilized. Yet, the pedestrian pathways on either side of the street tend to be busier than those in the middle of the boulevard.

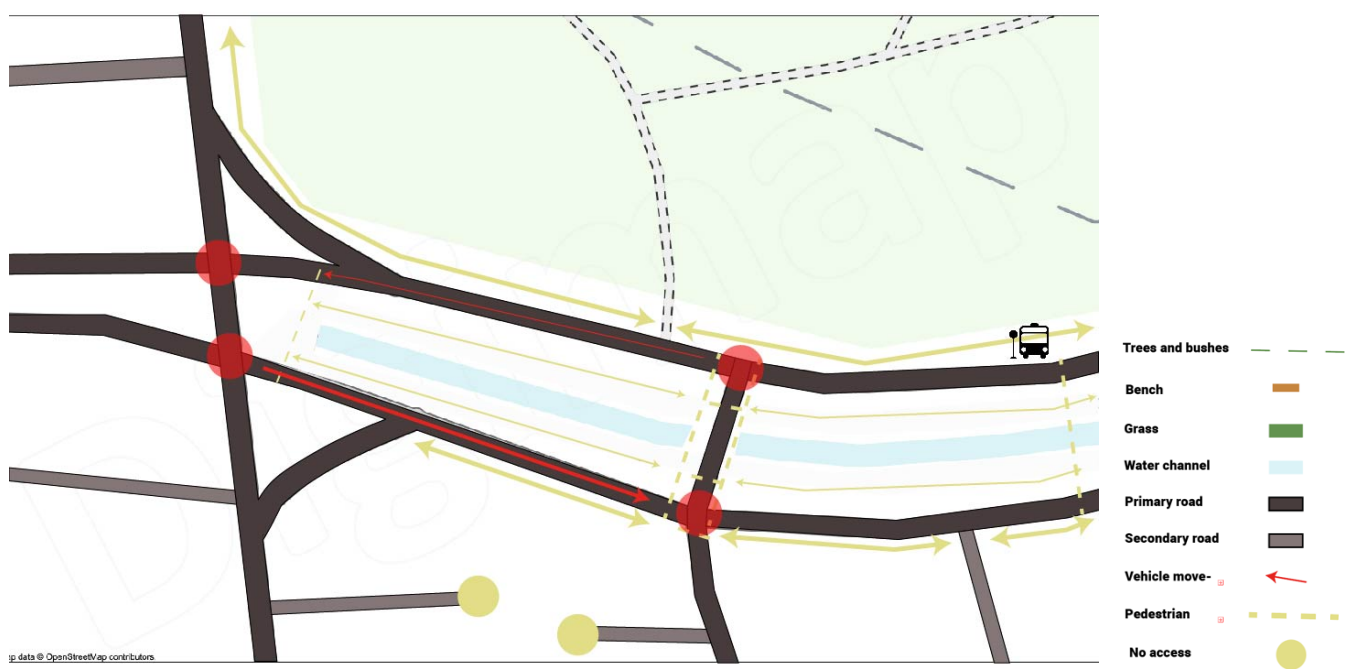


Figure 51 Accessibility Map, Boulevard Keshavarz

5.2.2 Soundscape dynamic shaping space quality

The soundscape in Boulevard Keshavarz varied in history, this place made to be a leisure area to citizens but to some extent it is not anymore in the form on those days. I conducted a thorough review of all notes and sound recordings in Boulevard Keshavarz to accurately characterize its soundscape.

The everyday soundscape of Boulevard Keshavarz. includes the persistent hum of traffic in the background, the rhythmic patter of footsteps, the occasional shouts of taxi drivers or pedestrians, the chirping of birds, and the gentle murmur of water. While these sounds vary in occurrence, they consistently contribute to the boulevard's unique auditory ambiance each day.

Dominance of man-made sound

After several field trips and detailed observations in Boulevard Keshavarz, it became evident that the acoustic character of this urban space is predominantly shaped by man-made sounds. These sounds, primarily originating from traffic and mechanical activities, form a unique acoustic code that defines the boulevard's atmosphere.

The most noticeable elements of this soundscape are the diverse sounds of traffic. This includes the humming of car engines, the distinct exhaust notes of passing vehicles, and the occasional beeps and roars of motorcycles weaving through the boulevard. The noise of tires and motorcycles rolling over asphalt, punctuated by the sounds of acceleration, deceleration, and braking, adds to this auditory tapestry. For example, BK1 sound recording (available in google drive) captures these elements vividly, providing a real sense of the boulevard's dynamic environment (Figure 52).

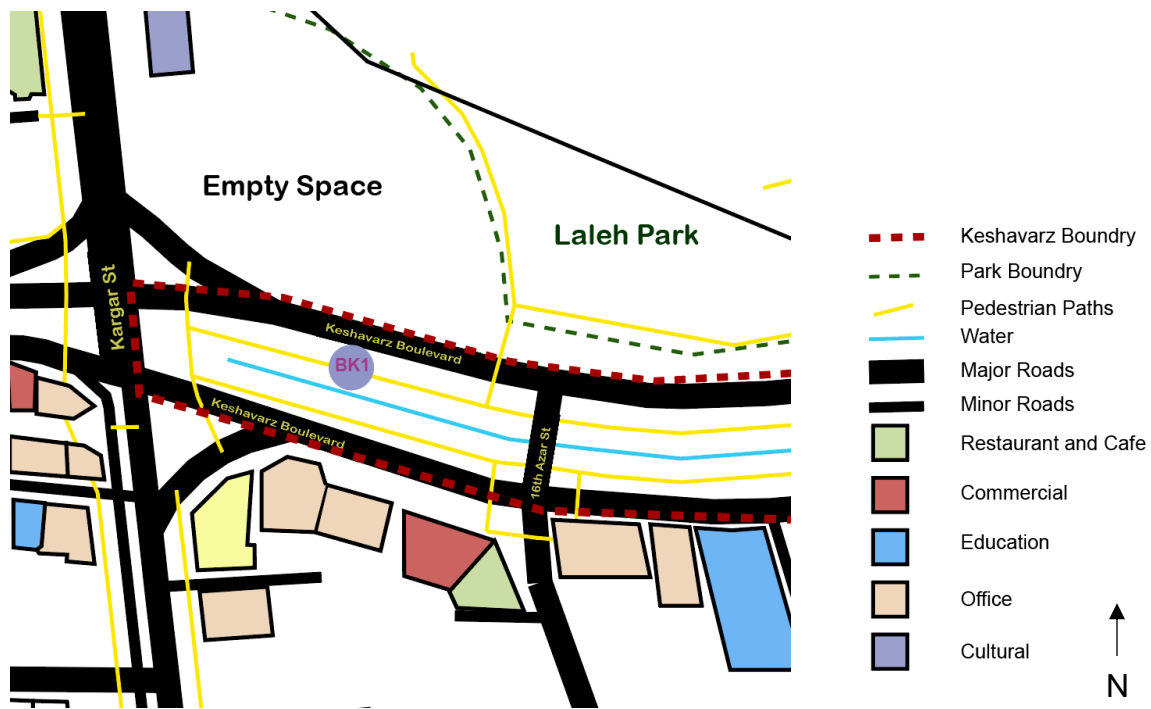


Figure 52 Location of the sound recording

Furthermore, the movement of cars along the boulevard offers auditory cues about the layout and dynamics of the street space. The speed and direction of vehicles not only visually map out the street but also create a sonic representation of its openness and flow. For instance, the sound sequence recorded at the side of the Laleh Park close to the empty space is distinctly contrasts with the sound recording on the other side of boulevard closer to the buildings. One can hear more sounds either traffic or natural sound in southern part due the physical features and openness of the boulevard (Figure 52). It encapsulates this variation, highlighting the diversity of sounds that contribute to the overall soundscape. The sounds of traffic and machinery are not just background noise; they are integral to the acoustic identity of Boulevard Keshavarz, offering insights into its urban rhythm. The machinery soundscape in Boulevard Keshavarz is not influencing the leisure character or either influence the optional activities, marked by a blend of natural and human sounds that stand out against the continuous drone of traffic.

Human Activities, Fading Sounds.

As the history shows the soundscape of the boulevard is changing and this could be the result of the use frequency and strategy of the placemaking. mix use building and the existence of the clubs could show something different.

The human soundscape of the boulevard, characterised by a rich and varied array of sounds, plays a significant role in shaping the experience of the space. However, this auditory richness is not uniformly distributed across the entire expanse of the boulevard. Instead, it manifests more intensely within smaller, more intimate sections of the boulevard—areas where individuals are in closer proximity to one another such as benches. These micro spaces, or smaller segments within the larger urban canvas of the boulevard, act as acoustic microcosms where the sounds of human activity—conversations, laughter, footsteps, and other expressions of urban life—become more pronounced and impactful. Human sounds like, vocal interactions form a significant part of this sonic environment. For instance, a loud and joyful conversation among a group of young adults near the benches serves as a distinct auditory marker, pinpointing the location of a recording. This audio clip captures the essence of a bustling afternoon on the boulevard, characterized by the rhythmic footsteps of people and the murmur of conversations – these being the most prevalent human-generated sounds in the area. I can conclude the rhythmic conversation and activities of people passing the boulevard as I was seated on the point. And the point of sound sources that raised some sound and add up to the boulevard soundscape Such as the sounds of laughter and the murmurs of people with cheerful expressions contribute to a welcoming atmosphere. These human sounds, intermingling with each other, create a vivid contrast to the omnipresent, louder man-made background noise, enriching the overall auditory experience of the boulevard.

Natural Elements

In Boulevard Keshavarz's soundscape, the role of natural sound sources, though often overshadowed, are significant. Natural sounds are symbolic sounds of the boulevard specifically belong to the boulevard as it has written in description and archived existed to the boulevard Keshavarz.

The presence of water features and tree-lined paths within the boulevard creates pockets where natural sounds can be distinctly experienced, albeit their prominence varies depending on the time and specific location.

Water had also existed since the first construction; it is still there but with very slow flow. However, a water pump installed in the basin generates a strong water flow. This creates an auditory focal point where the sound of flowing water captures the attention of people, potentially altering their perception of the surrounding traffic noise. Conversely, in other parts of the boulevard, the water is stagnant, causing the sound of the waterway to fade into the background, becoming more of a visual than an auditory element.

The auditory presence of water is also influenced by the time of day. For instance, during the hours after sunrise and before sunset, when water jets are active, their rhythmic splashing becomes a prominent feature of the soundscape. This contrasts with the stream in the middle of the boulevard, which, due to long-term dryness, seldom contributes to the auditory environment. This situation reflects broader issues of management and investment in public spaces in Tehran. Despite the potential of these water features to enhance the soundscape, their auditory impact remains underutilized.

The boulevard's tree-lined paths offer another natural acoustic element. The rustling of leaves and the sound of the wind through the trees provide a serene auditory experience. This was particularly evident after a rainstorm, as observed on April 9th, when the gusty winds created a unique soundscape, distinct from the usual urban noise.

In the northern part of the boulevard, bird songs are notably louder, attributed to the proximity of a large park and the specific spatial design of this area. This variation in bird activity highlights how natural sounds can coexist and even stand out within a noisy urban environment. Ariel (2009) noted that birds in urban settings often adapt their songs to overcome similar types of background noise, suggesting a complex interaction between natural and man-made soundscapes.

Overall, the natural sounds within Boulevard Keshavarz, from the flowing water to the rustling leaves and bird songs, play a crucial yet often understated role in shaping its auditory character. These elements not only provide a respite from urban noise but

also enrich the sensory experience of the space, underscoring the importance of integrating natural soundscapes in urban planning and design.

The impact of land uses, street performers, and other elements

The current land use along Keshavarz Boulevard falls short of fostering a dynamic and unique soundscape that one might anticipate from such a prominent urban thoroughfare. This shortfall is particularly notable when compared to the richer auditory environment of the boulevard's past. Despite its mixed-use composition, which includes offices, retail, residential, and leisure spaces, the soundscape lacks the rhythmic and fluid qualities that could emanate from a more diverse and vibrant urban setting. This deficiency can be traced back to the specifics of land use and the design of the boulevard's environment.

Keshavarz Boulevard is characterized by a configuration where office spaces dominate the upper floors of buildings, while the ground level is reserved for retail and leisure establishments. However, this arrangement does not effectively contribute to a diverse or engaging soundscape. One of the primary reasons is the homogeneity in the type of retail outlets present, which predominantly cater to the needs of office workers and university students. This narrow focus on books and office or university-related goods creates a uniformity in the retail landscape, limiting the variety of sounds that such a mix could potentially generate. Academic research underscores the importance of a diverse array of retail and leisure offerings in cultivating rich urban soundscapes. Yet, the retail aspect of Keshavarz Boulevard, constrained by its alignment with the needs of office workers, struggles to draw a wide range of visitors to the area.



178 *Figure 53 Keshavarz Boulevard land use illustration*

Moreover, the leisure dimension of the boulevard's soundscape is notably underexploited. The decline of establishments offering live music and engaging dining experiences has further muted the boulevard's auditory diversity. The remaining food outlets, primarily providing indoor dining or quick-service options like cold sandwiches, miss the opportunity to enliven the soundscape with the ambient sounds of outdoor dining and social interaction. The absence of outdoor seating areas further diminishes the potential for a lively and inclusive urban soundscape that could enhance the boulevard's attractiveness and vibrancy.

The dining establishments along Keshavarz Boulevard, particularly those offering Persian cuisine, are confined to indoor spaces, with fast-food joints providing only takeaway services. Additionally, the local cinema's operation is limited to just twice a week, and it suffers from a lack of promotional activity. This underuse of available leisure options leads to a diminished auditory diversity, making the boulevard less appealing to potential new visitors or varied user demographics.

Once celebrated as a premier leisure destination in Tehran, Keshavarz Boulevard's vibrancy in terms of activities, user engagement, and its soundscape has noticeably waned. This decline highlights the critical role that diverse and vibrant land uses play in crafting the auditory identity of urban areas. The transformation of the boulevard over time, marked by an increased dominance of vehicular traffic over pedestrian spaces, has notably shifted its character from a central urban oasis to merely a transitional space flanked by major roads. This shift has not only diminished its appeal but has also allowed traffic noise to become the overriding element of the boulevard's soundscape. Observations and recordings reveal that vehicular sounds, particularly from the nearby roads, dominate the auditory environment, overshadowing any potential for a varied soundscape.

The coexistence of pedestrian walkways and vehicular lanes has led to areas of conflict and confusion, adversely affecting both the flow of traffic and the pedestrian experience. These conflicts further detract from the boulevard's functionality and the comfort of its spaces. The dominance of vehicular noise in the soundscape is so pronounced that no other sound sources significantly stand out in recorded observations, with the constant hum of traffic serving as a persistent background noise.

Moreover, the functionality of sidewalks is compromised by parked vehicles, impeding pedestrian movement, and further limiting the spaces available for leisure and social interaction. This physical obstruction not only hinders accessibility but also contributes to the overall decline in the boulevard's status as a vibrant public space.

To revitalize Keshavarz Boulevard and reinstate its position as a key leisure hub within Tehran demands a coherent and multifaceted strategy. This strategy should focus on diversifying and enhancing access to leisure and dining venues, fostering cultural and entertainment activities, and upgrading pedestrian infrastructure to cultivate a richer and more engaging soundscape. Addressing the conflict between pedestrian pathways and vehicular traffic is essential. Through thoughtful redesign of traffic patterns and strict enforcement of parking regulations, the boulevard can recapture its unique charm and character.

The design and functionality of intersections, equipped with pedestrian crosswalks, represent another crucial aspect. However, the clarity and definition of subsections along the boulevard are compromised by the coexistence of a central pedestrian area with vehicular lanes. This blurring of distinct spaces, compounded by heavy traffic on the walkways, erodes the boulevard's distinctive identity, overshadowing its inherent qualities.

A significant aspect of the boulevard's transformation relates to its identity evolution. Keshavarz Boulevard, a beacon of modernity, romance, and youthfulness, mirrored Tehran's modernization phase. It was a cultural and leisure epicentre, resonating with the sounds of popular music and nightlife, including discos and nightclubs that thrived until the revolution. Icons like Farhad Mehrdad found their fame here, amidst venues that now exist only in memory, such as the Couchini club. Yet, today, the boulevard lacks dedicated spaces for music and performance, a stark departure from its vibrant past.

Despite these challenges, street musicians and small bands occasionally bring life to the boulevard, particularly at the junction of Kargar and Keshavarz streets near Laleh Park, and the Baradarane Mozaffar junction. These spots, ideal for performances due to their spatial characteristics and the presence of an engaged audience, hint at the potential for a revived cultural scene. Pre-pandemic observations of audiences interacting with performers underscore the boulevard's capacity for communal and

cultural engagement. However, the consistent presence of buskers, reminiscent of the boulevard's musical legacy, has dwindled post-pandemic, with performances becoming less frequent and lacking a specific locale.

This comprehensive approach to revitalizing Keshavarz Boulevard encompasses enhancing its physical and cultural infrastructure, encouraging a vibrant mix of uses, and fostering an environment where both planned and spontaneous cultural expressions can thrive. By reclaiming its identity as a modern, cultural, and leisurely space, Keshavarz Boulevard can once again become a cornerstone of Tehran's urban landscape, offering a rich tapestry of experiences that reflect its historical significance and contemporary potential.

5.3 Yousef Abad Stairs (Pelleh): A hidden public space

5th (Stairs) Pelleh, situated in the Saei neighbourhood, is a mixed-use zone where residential buildings are predominant, interspersed with local commercial services. These services include supermarkets, a handful of restaurants and cafes, a drug store, and the leisure area of Park Saei on Valiasr Street. This case study focuses on an area between these two streets, where residential buildings are the main feature, yet commercial and office spaces are also interspersed.

Pelleh represents an informal public space, in contrast to the formally planned Saei Park. It embodies the 'unplannable,' a welcome deviation from Tehran's standard urban planning (Moghadam, 2016). The area features rows of steps that naturally create incidental void spaces between each set, fostering unplanned activities and diverse informal uses. The buildings, constructed in various shapes without adherence to regulations, create spaces that respond to housing needs outside of standard planning templates. The government and district authorities maintain both the designed spaces (limited to residential block development) and unplanned spots (incidental public spaces), which often become underutilized voids in the urban landscape, like spaces under bridges or gaps between stairs. However, these empty plots are informally utilized by the people, their spontaneity transforming them into vital areas supporting local, everyday social activities in Tehran.

In informal settlements, public spaces, much like housing, are predominantly created by the residents themselves. These areas are primarily utilized by the local community, who engage in unique ways of interaction, appropriation, and imbuing these spaces with meaning. The resulting environment reflects the community's needs, interactions, and symbolic constructs.

Informal public space suggests that the development of spaces in informal settlements is characterized by informal approaches, seeking novel solutions for both spatial and social aspects. This process is marked by continuous transformation and heavily relies on the active participation of the local community (Hernandez-Garcia, 2013). The shaping of these informal spaces is predominantly directed by the residents themselves. Lefebvre (1991: 286) contends that 'space is saturated with social interactions; it not only exists because of these interactions but is also shaped and shapes these social dynamics.' Hence, 'social space "encompasses" the activities of

both individuals and groups, encompassing the spectrum of human experience from birth to death, including suffering and agency as observed in informal settlements.



Figure 55 5th Yousef Abad Stairs

In the Saei neighbourhood, public spaces are typically designed with pedestrians in mind. 5th Yousef Abad Stairs, functioning akin to a square, presents a unique blend of planned and incidental spaces within its urban fabric. Nestled between Yousef Abad and Valiasr Street, it serves as a connective corridor between two neighbourhoods. Historically, many of these stairs were constructed by residents, enhancing their mobility across the area. Each plot within Stairs is distinctly square-shaped, surrounded by residential flats, creating a seamless transition where deliberate and spontaneous spaces converge. This intermingling makes it challenging to discern where purposeful space ends and incidental space begins, as they coexist in a harmonious blend.

These stairs and landings are not just mere passageways but have evolved into multifunctional spaces. They hold different meanings and serve various unplanned

These stairs and landings are not just mere passageways but have evolved into multifunctional spaces. They hold different meanings and serve various unplanned

uses, reflecting the dynamic and adaptive nature of the community. The stairs become a canvas for social interactions, informal gatherings, and a multitude of activities that go beyond their original purpose of facilitating movement. This organic evolution of space in Stairs exemplifies the fluidity and adaptability of informal urban environments, where the community's needs and creativity shape the character and function of public spaces.

5.3.1 Urban Design Analysis

Spatial layout and design

Speaking of Yousef Abad's stairs, one must pay attention to the unique characteristics of each of the five stairs that are between Vali Asr and Yousef Abad. The fifth one, however, is more complicated and lengthier. It passes through two different alleys and has different orientations and sequences.

The primary method to describe each podium in Pelleh is through its spatial level, height, and physical characteristics, especially in comparison to the planned areas nearby. The street level, known as space 0, features a narrow and tall entrance leading to a series of steps that ascend towards the first void, labelled as number 1. This void is a large, open area, signifying the beginning of Pelleh's unique spatial journey. The street level itself is an integral part of the pedestrian zone, with buildings on the left guiding entry into the area from point 0.

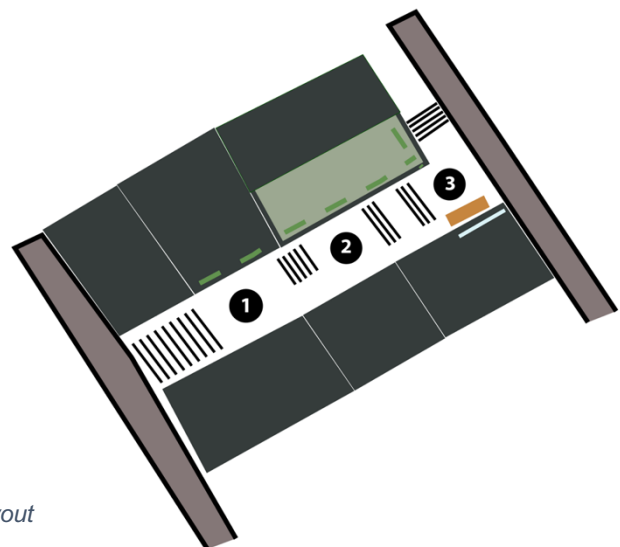


Figure 56 Yousef Abad Stairs Spatial Layout

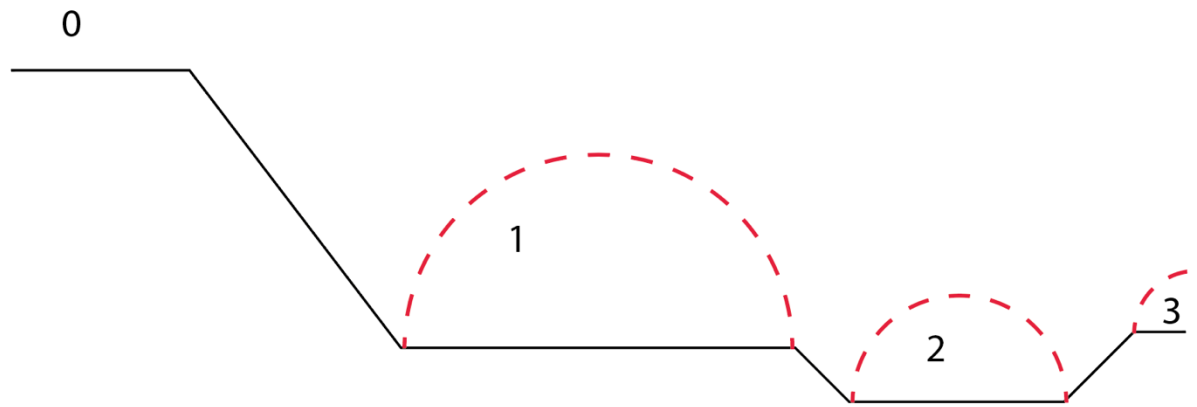


Figure 57 Yousef Abaf Stairs. Entrance, Point 0



Figure 58 Yousef Abad Stairs, Left: Largest void Location 1. Right: Lowest void Location 2

There are two vacant spaces situated adjacent to the mixed-use and residential buildings, nestled between stairs at locations 1 and 2. Location 0, which is at street level, stands at a height of 0 meters. Descending from there, location 1 is situated at -4.5 meters, while location 2 is further down at -6 meters, making it lower than both the street level and location 1. Location 3, in contrast, is an integral part of the existing area leading towards the alleyway (Figure 58). It is closely adjoined to the backyard of a mixed-use building and a commercial flat that specializes in furniture sales.

The dense urban fabric of the Saei neighbourhood, coupled with government strategies regarding the allocation and regulation of built and unbuilt areas as well as building heights, has led to the creation of diverse spaces like those found in Pelleh 5th. These varying elevations and spatial arrangements contribute to the unique character and functionality of the area, reflecting the intricate interplay between urban planning and the organic development of community spaces.

The urban features of the area are distinctly recognizable and form a cohesive pattern, comprising a row of stairs interspersed with void areas. These spaces are adorned with graffiti on the walls, as well as decorative tile patterns and paint.

This series of stairs serves not only as a physical pathway facilitating movement but also as a canvas for specific users, such as graffiti artists. These artists often employ signposting to mark their presence, contributing to the path's identity. Additionally, the direction of Pelleh itself creates a distinct path, characterized by a clear starting point and an ending destination.

The stairs also function as nodes, serving as gathering spots and showrooms for displaying graffiti art within the city.

While I could argue that Pelleh stands as a landmark within the city of Tehran, particularly since the Saei stairs act as orientation points, it differs from other urban settings. Pelleh is not well-known among non-local or infrequent visitors, primarily due to its enclosed nature and lack of signposting.

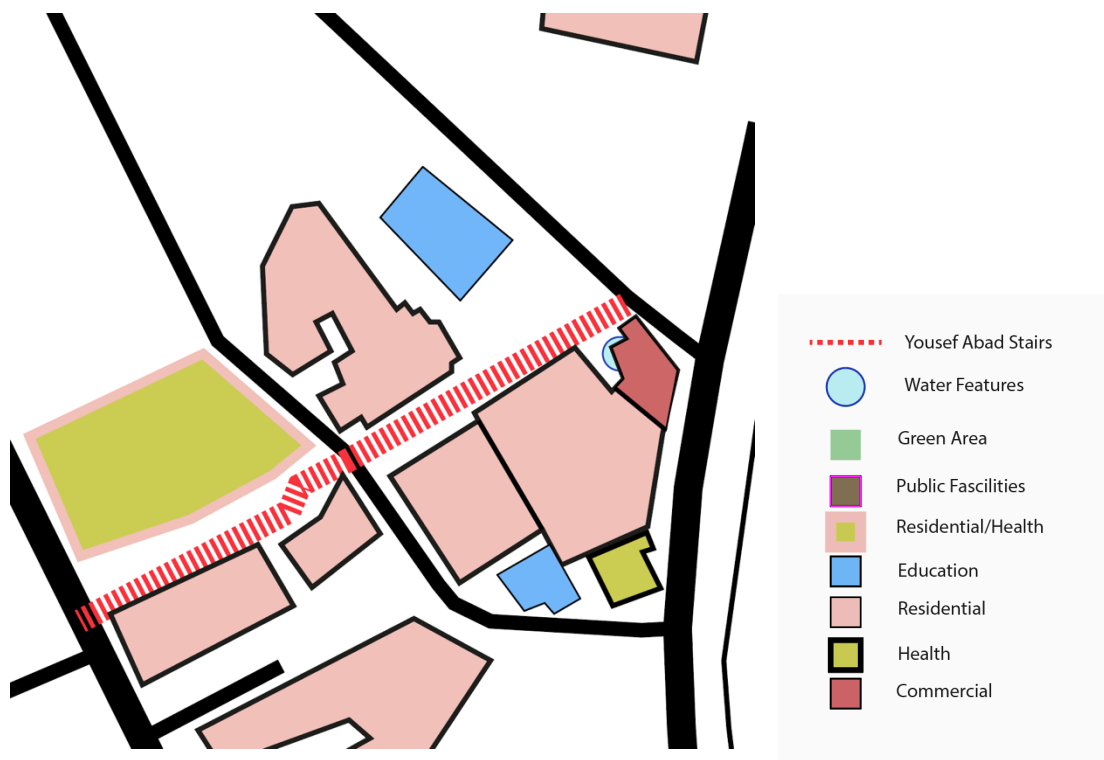
Three open spaces within the area are enhanced with vegetation and surrounded by buildings. In addition to gardens and balconies overlooking these spaces, a solid wall obstructs the entire front view of the site. The entrance to the site is quite narrow; from location 0, one cannot fully grasp the scope of the area as the mass and scale of the surrounding buildings dominate the space and obstruct the view.

The proportion of sky visible across the street diminishes the sense of enclosure. A continuous facade of buildings along the street on either side of the public space further accentuates this sense of enclosure. The feeling of being enclosed is shaped not only by the buildings flanking the sides of the public space but also by the views directly ahead and across the Pelleh.

This configuration of public space indicates that the sense of enclosure is influenced by several factors: the presence of buildings along the street, the views extending ahead and across the street, and surprisingly, several urban design elements. These include the average width of the street, the typical setback of buildings, the average height of buildings, the standard spacing and type of trees, and the relationship between the street width and the height of the buildings. All these factors play a significant role in defining the spatial experience of the area.

Land Use and Activities

5th Yousef abad stairs (Pelleh), a focal point surrounded predominantly by residential buildings and featuring a music institution and a pet health centre, I delve into the categorisation of observed activities. These activities have been classified into three main types, Social, Optional, and Necessities, to provide a clearer understanding of how the space is utilized and the nature of its vibrancy and in the following section its relationship with the soundscape.



The 5th Yousef Abad stairs serve as a microcosm city, where the smooth distribution of social, optional, and necessary activities reveals the balanced use of this public space by local people. The presence of a music institution, furniture shop and a pet health centre add unique elements to the area's soundscape and social dynamics. The music institution likely introduces an artistic vibe, attracting students and enthusiasts, thereby enriching the cultural fabric of the vicinity. The sounds of music practice sessions may occasionally permeate the outdoor environment, adding an auditory layer to the stairs' atmosphere.

Social activities, such as sitting and talking or engaging with pets, underscore the stairs' function as a communal gathering spot, where residents and visitors can enjoy leisurely moments and socialize. Optional activities like smoking and phone conversations represent personal choices made within the public realm, reflecting the stairs' accommodating nature for a range of individual behaviours. Necessary activities, primarily walking, highlight the stairs' integral role in the neighbourhood's physical infrastructure, facilitating movement and access across the residential area.

Activity Type	Activities	Location	Description
Social	Sitting or standing and talking	Steps and adjacent void areas	Individuals or couples engage in conversations, contributing to the communal atmosphere.
Optional	Smoking Cigarettes	Isolated spots along the stairs	Smokers find secluded spots for breaks, often alone or in small groups.
	Feeding or Playing with Cats	Near the pet health centre	Pet owners and animal lovers interact with cats, fostering a sense of community among pet enthusiasts.
	Talking on the Phone	Various locations along the stairs	Users stop to have private conversations, utilizing the stairs as a transient social space.
Necessities	Walking to Pass the Stair	Entire stretch of the stairs	People use the stairs as a thoroughfare, moving between different levels of the neighbourhood.
	Walking to Enter Buildings	Entrances adjacent to the stairs	Residents and visitors access the buildings, indicating the stairs' role in daily commutes.

Figure 60 Activities at 5th Yousefabad Stairs (Pelleh)

This information, based on my detailed observations, vividly demonstrates that the 5th Yousef Abad stairs represent a dynamic and essential element of Tehran but more locally used and valued. This space, teeming with life and activity, adeptly accommodates a wide spectrum of human behaviours, predominantly those categorised as optional and necessary. The findings underscore the pivotal role that such urban constructs play in nurturing community interaction, providing a sanctuary for relaxation and contemplation, and meeting the everyday functional requirements of urban residents. Through this examination, the stairs emerge not merely as a physical structure but as a crucial facilitator of urban liveliness and connectivity,

underscoring their significance in enhancing the quality of life and fostering a sense of belonging among the city's inhabitants.

Accessibility

The area is intentionally designed to serve as a linkage between one neighbourhood and another, with street connections to other areas thoughtfully integrated. The entrances to the buildings are clearly visible and accessible to those within the vicinity. However, the area's layout and features are not well communicated to those approaching it for the first time. It remains somewhat concealed and tucked away within the neighbourhoods. A notable absence of signage exacerbates this issue, as there are no markers to help differentiate one location from another or to guide and orient users through the network.

Additionally, several windows and doors are designed to be recessed, adding to the unique architectural character of the area while also influencing the overall accessibility and navigability of the space.

5.3.2 The Soundscape of Yousef Abad Stairs

Sound recordings in the Saei neighbourhood capture three primary categories of sound sources, representing the diverse auditory landscape of this urban area. These categories include manmade sounds, human-related sounds, and natural sounds, each with its own subcategories. For human-related sounds, the focus is on voices and music. Natural sounds encompass those made by animals and various weather phenomena. Manmade sounds are divided into industrial noises and household sounds.

My initial exploration of the neighbourhood began from ValiAsr Street. As I entered the neighbourhood from the Abshar junction, I was immediately struck by the shift in the soundscape. This area emerges as a tranquil enclave where, on most days, the sounds of nature are the predominant auditory experience. Following this, there is a blend of manmade sounds and human activities.

The ambient soundscape is composed of a symphony of birdsong, the distant hum of machinery and vehicles, the rhythmic sound of footsteps on stairs, and the various

noises associated with human activities. This rich tapestry of sounds offers a unique auditory insight into the life and rhythm of the Saei neighbourhood.

I have two sound recordings that demonstrate the relatively low sound levels in this neighbourhood. To substantiate this observation, I will provide specific measurements or evidence. Most recordings exhibit similar characteristics, the sound level is not only low but also clear and distinct (Sound Recording YAS1 available in google drive). Listening to these sounds is effortless, with each sound signal being easily distinguishable due to its unique character, set against a subtle background noise.

In the neighbourhood, the designed landscape elements, such as the trees (soft features) and the fountain (hard features), create a backdrop for natural sounds. Bird species are the predominant auditory presence in this space, offering a clear and continuous sound profile. Just as the sound of vehicles is a sonic identifier for metropolitan streets, the presence of birds significantly contributes to the sonic atmosphere of the area.

Another notable high-pitched and continuous sound in the Saei neighbourhood comes from the activities of cats. During one of my recordings, the sounds of cats unexpectedly emerged from the other side of the street, as captured in sound recordings. Listeners can enjoy a unique auditory experience of cats, doves, mockingbirds, crows, and other birds. The presence of roaming cats is a significant sound source in the neighbourhood. These domestic animals are a defining feature of Tehran's city wildlife. The sounds of feral cats, particularly in and around Saei Park, contribute to the neighbourhood's sonic identity. Whether owned or stray, cats have established their presence throughout the neighbourhoods of Tehran. In Saei, their vocal repertoire, including meowing and purring, is especially prominent. My sound recordings include these distinct sounds of cats meowing further highlighting their role in shaping the soundscape of the neighbourhood (Sound recording YAScats, available in google drive).

In the Pelleh 5th area, the distinctive sound of the Kookoo bird is notably sharper. During most of my visits, this sound consistently featured in my recordings, often emanating from the balconies of buildings facing inward towards location 2 and 3 (Figure 61). While doves were seldom seen on the sets of stairs, their cooing was a prominent and vivid sound, especially in the afternoons.

There are two types of water sources within this space, one inside the alleyway stream and second one inside the buildings which are hearable in the street.

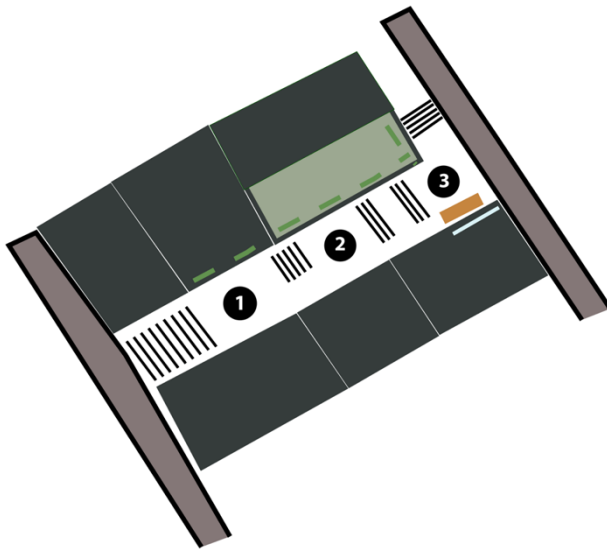


Figure 61 location of birds, Yousef Abad Stairs



Each water source produces distinct sound effects in the environment. The stream, locally known as 'Jooy,' running through the street, is a particularly resonant sound source within the neighbourhood. It flows down the middle of an alleyway, nestled between the northern stairs to the edge of the Pelleh. During my observations, I noted that this natural stream flows only in September 2020. The sound it produces is remarkably natural, enhanced by its location within a water basin and the use of natural materials in the construction of its walls. Compared to other water features in the neighbourhood, this stream has a greater volume and pressure, adding a rich, dynamic layer to the neighbourhood's soundscape.

Consequently, in these areas, sound takes precedence oversight, as the water features exist predominantly within the auditory sphere.

Another water feature is installed inside the furniture shop, the fountains here are relatively small, and the water flow is gentle. As a result, the sound of the water becomes inaudible at distances greater than three meters. Despite their private location, I was able to record their sounds. Unlike other landscape features within private spaces, these water features can be acoustically appreciated by those outside, adding a unique auditory dimension to the public experience of the neighbourhood.

A private fountain in the furniture shop, designed to create a pleasant, private atmosphere for clients. However, people outside, near the building, can hear water from within, thereby enhancing their experience. The sound of water inside the shop, while private, becomes a part of the neighbourhood's soundscape as it is audible to those outside. Consequently, these water sounds, though not loud due to the sound-blocking properties of the materials used in the private garden, still convey subtle auditory cues to individuals standing near the building.

In contrast to the visual elements of the building's interior architecture, the façade of the 3-meter-high wall significantly influences our experience by obstructing the view of the indoor scenery. Sounds produced or influenced by the indoor spatial features of the building contribute to and modify the overall soundscape of the public space.

To evidence this observation, you could conduct sound measurements at various points around the building, both inside and outside, to quantify the sound levels. Additionally, recording and analysing the sound frequencies can help demonstrate how the sound wall and building materials affect sound transmission. Interviews or surveys with both clients inside the shop and people outside could provide qualitative data on how these sounds influence their experience of the space.

The presence of water sounds in the vicinity of a shop, as observed, appears to momentarily capture the attention of people, leading them to pause and engage with the sound. Comments shared among individuals about the water's calming effect underscore its significant contribution to the urban ambiance, enriching the pedestrian experience beyond the confines of the shop. Sound recording and activity recording corroborate these observations, showing a discernible increase in natural sources sound near the shop due to the water sound, with frequency analysis confirming the unique presence of flowing water amidst the urban cacophony.

Further analysis reveals a connection between visual and auditory elements of water features in urban settings. Out of my interest due to my field trip I observe that in the alley way at the entrance of Abshar street there is a small fountain Infront of the supermarket. It is primarily designed as a visual attraction, illustrates this dynamic. Despite its visual appeal, the fountain's sound is often overshadowed by the surrounding noise, particularly from traffic, indicating that its contribution to the auditory landscape is minimal. This observation highlights the importance of considering the acoustic properties of water features in their design and placement within urban spaces to enhance their sensory impact.

However the Furniture shop water feature has continuous flow and relaxing splash effect introduce a soothing ambiance, vital for creating a pleasant public space. Citing Booth (1989), the analysis emphasises that the auditory qualities of water features, influenced by the water's movement, are crucial for the overall quality of public spaces. This integrated analysis underscores the multifaceted role of water sounds in urban environments. While intended for clients or as visual enhancements, these features inadvertently benefit the broader community by enhancing the neighbourhood's ambiance. The calming effect of water sounds offers a respite from the urban noise, contributing positively to the experience of city dwellers and highlighting the value of incorporating auditory considerations into urban design to foster engaging and soothing public spaces.

Rhythmic Realities and Soundscapes in Urban Spaces

The concept of 'urban rhythm' involves analysing spatio-temporal movements and activity patterns in urban environments. Agerstrand emphasized the need to consider the dynamic nature of urban spaces, moving beyond static maps. Lefebvre (1980) further developed this idea through rhythm analysis, aiming to understand cities through the rhythms of daily life.

This approach seeks to understand cities through the rhythms of their daily life as it was evident in the neighbourhood I studied; local sounds provide invaluable spatio-temporal information for spatial design. My observations and interviews revealed a strong correlation between specific times of day and corresponding sounds, leading to a dynamic soundscape.

In this neighbourhood, local sounds create spatio-temporal information that is invaluable for spatial design. My observations and interviews highlight a strong correlation between the time of day and specific sounds, revealing a dynamic soundscape. By employing sonification, we can 'listen' to data provided by these sounds, gaining deeper insights into urban design and planning. This approach becomes particularly relevant when focusing on sound and activities, as discussed in the following section.

The research indicates that the hi-fi soundscape, with its clear, rhythmic, and harmonious acoustic qualities, significantly characterizes the temporality of urban places. The aesthetic combination of recurring and resonant sounds from social activities, movements, interactions with space, and cyclical natural events, all converging in a single location, defines the aural experience of place-temporality.

A primary activity in public spaces is the movement of people, whether walking or commuting by car. The type of walking and pavement materials correlate with the sounds produced. However, in this case, the specific materials used for facades and pavements minimize sound variation.

Foreground sounds include human activities such as entering buildings, footsteps, and various reactions like baby cries. These sounds become characteristic of this type of space, linking place, structure, and optional activities.

Sound serves as both a source and a result of spatial-social changes. In this study, urban soundscapes are considered threshold spaces for examining the reproduction of social space.

Socializing, a third key activity, often involves brief interactions, such as neighbours catching up, conversations between shop owners and customers, or people shouting to others outside. During my study, I observed people gathering in empty spaces for social activities like singing or relaxing. They choose these spaces to escape the city's hustle and engage in optional activities. I will explore this in the next section. From user perspective

These areas are utilized for various optional activities like smoking, sitting, drawing, or feeding cats. Both individuals and groups equally use these public spaces for such activities. For instance, employees from the furniture shop visit this space at least twice a day, usually alone. Sound recordings show that individual use of public space

doesn't significantly add to the soundscape, but other sounds can influence their activities.

Optional activities often produce sounds that influence the quality of public space. Part of socializing involves creating sounds in the environment. Some users, particularly younger generations, engage in activities that deviate from societal norms. For example, graffiti and wall paintings contribute to the soundscape of this public space. These visual elements are integral to Tehran's sonic identity. To illustrate, I refer to graffiti related to rapper Hichkas, a pioneer of Iranian hip-hop, which I noticed during my field trip.



Figure 62 Graffiti on Yousef Abad Stairs

Other voices, less recognized in cities but part of the sonic identity, include rap artists. Tehran's vibrant Rap Farsi scene, mostly operating privately, occasionally permeates the streets or parks. While there are no official markers for these voices, unsounded references, like Hichkas's graffiti, are present.

This public space, akin to the 'Dalan' (corridor) in ancient Persian architecture, serves as a transitional space leading to courtyards. It organizes building space and acts as a connector between separate areas. People use this space to experience freedom, engage in unconventional activities, or blend into the city's usual soundscape.

At the conclusion of my fieldwork, I was pleasantly surprised to discover an unexpected café nestled within this public space. Remarkably, this locale transformed into a 'patogh' (hangout place) from 5 to 10 pm. In Farsi literature, 'patogh' is defined as a public space designated for socializing (Torkaman, 2018). These hangout places are vibrant hubs of social interaction, where people congregate to engage in various activities, play, and foster direct interactions. The blend of social and optional activities reaches its zenith in such environments. Observations and interviews conducted during my field trip revealed that groups of people frequently utilized this space in a manner consistent with the concept of 'patogh.' The term surfaced repeatedly in interviews, emerging as a significant thematic code in understanding the social dynamics of the area.

The positioning of the coffee shop is strategically advantageous, situated at the lowest point and centrally within the L-shaped area. This location affords patrons an expansive view, allowing them to observe the café's surroundings from a vantage point. This superior positioning not only enhances the visual experience of the users but also integrates them more seamlessly into the social fabric of the space.

6. User Perspective and Soundscapes in Public Space Quality

In the realm of urban design, understanding how individuals interact with and perceive their surroundings is crucial. This chapter delves into exploring the connection between soundscapes and user perspectives, a facet of urban planning that often goes unnoticed despite its profound impact on the urban experience. Through a detailed examination of the soundscapes within City Theatre, Boulevard Keshavarz, and Yousef Abad Stairs from user perspective, this analysis not only highlights the auditory characteristics of these spaces but also probes into how these sonic elements influence the sensory experiences and perceptions of their users. From the whisper of foliage in a gentle breeze, the incessant hum of city traffic, to the vibrant melodies of street musicians, the diversity of urban sounds offers a rich tapestry for exploration. Utilizing interview data collected from each case study location, this chapter unveils a spectrum of themes encompassing user perception, the interrelation of sound and space, and the auditory dimensions of urban environments. The insights garnered from these interviews shed light on the multifaceted experiences users have in these urban settings, providing a comprehensive understanding of how soundscapes contribute to the fabric of urban life.

To further elucidate this relationship, an expanded analysis of user perspectives and soundscape qualities is presented below, enriched by additional elements that further detail the sensory experiences across the examined location.

Location	Qualities found in interviews	Additional Elements
Boulevard Keshavarz	- Nostalgic - Provides opportunity for being oneself - Accessible - Busy yet deserted - Romantic - Beautiful - Green - Walkable	- Harmonious: The blend of natural and urban sounds creates a harmonious backdrop. - Evocative: Certain sounds trigger memories and emotions, enhancing the sense of nostalgia. - Dynamic: Fluctuations in the soundscape reflect the rhythm of urban life.

Yousef Abad Stairs (Pelleh 5 th)	- Calm - Safe - Cosy	- Intimate: The soundscape fosters a sense of closeness and personal space. - Quietude: A noticeable absence of overwhelming noise, promoting tranquillity. - Serene: Sounds that contribute to a peaceful and restful atmosphere.
City Theatre	- Negative feelings - Unsafe - Not very good - Diverse	- Varied: A wide range of sounds reflecting the diversity of urban activities. - Intense: Potentially overwhelming sounds that may contribute to feelings of unease. - Vibrant: Despite negative aspects, certain sounds signify the area's liveliness and cultural richness.

Figure 63 soundscape qualities and user perceptions in three urban locations

The above table meticulously incorporates a range of additional descriptive elements for each urban location, thereby enriching the understanding of the complex interplay between soundscape qualities and user experiences. In leveraging this table as a foundational tool for analysing interview data from each case study, the chapter systematically introduces themes derived from a thorough review of interview transcripts. This methodological strategy facilitates a structured exploration of the interconnections between sound, space, and user perception, allowing for the identification of recurring themes and unique auditory experiences across different urban contexts.

6.1 City Theatre Square

In analysing the interview data from City Theatre Square, I identified key themes that highlight the complex relationship between soundscapes, place, and individual perceptions. The themes of sound diversity, sound identity and safety emerged as significant findings from users of this public space. This section will detail each theme, supported by evidence from archives and interview transcripts. In total, I conducted 15 interviews at City Theatre Square, which provided valuable insights into the auditory experiences of its users.

6.1.1 Sonic Diversity in City Theatre Square

The sounds of Tehran mirror its social and cultural vibrancy and diversity, as is evident in its public spaces. The auditory experiences intrinsic to crowds and human activities play a pivotal role in shaping perceptions of public spaces. In-depth interviews reveal that users not only notice but also deeply appreciate the diverse array of sounds that characterize these areas. City Theatre Square stands out in case studies for its exemplary sonic diversity.

"As a visitor, the sound diversity here is fascinating. It's like an auditory journey through different cultures and times. It makes the square feel very welcoming and lively." (Interviewee T2).

The various of activities and the diverse demographic of users contribute to a soundscape in Theatre City Square that is both **vibrant and diverse**, reflecting its dynamic nature. Interviewees frequently correlate the bustling soundscape with the presence of people, thus drawing a direct connection between auditory experiences and the perception of vibrancy. For instance, one respondent (Interviewee T14) vividly articulates this relationship, stating, "The crowd gives me a perfect feeling." This statement relates to the notion that the sounds of the crowd are integral to the urban experience, far surpassing the role of mere background noise. In theory this supports Guastavino's (2006, 950) discussion that "Sounds reflecting human presence and activities are the most relevant components of urban soundscapes. In other words, the ideal urban soundscape reflects life!

Users frequently highlight in interviews that the vibrancy and variety of sounds predominantly stem from the varied activities and interactions among people in these areas. In City Theatre Square the sounds of street vendors, occasional events and groups of friends gathering were frequently mentioned as elements that brought the space to life. These sounds were not just background noise but were integral to the participants' perception of the space as vibrant and dynamic.

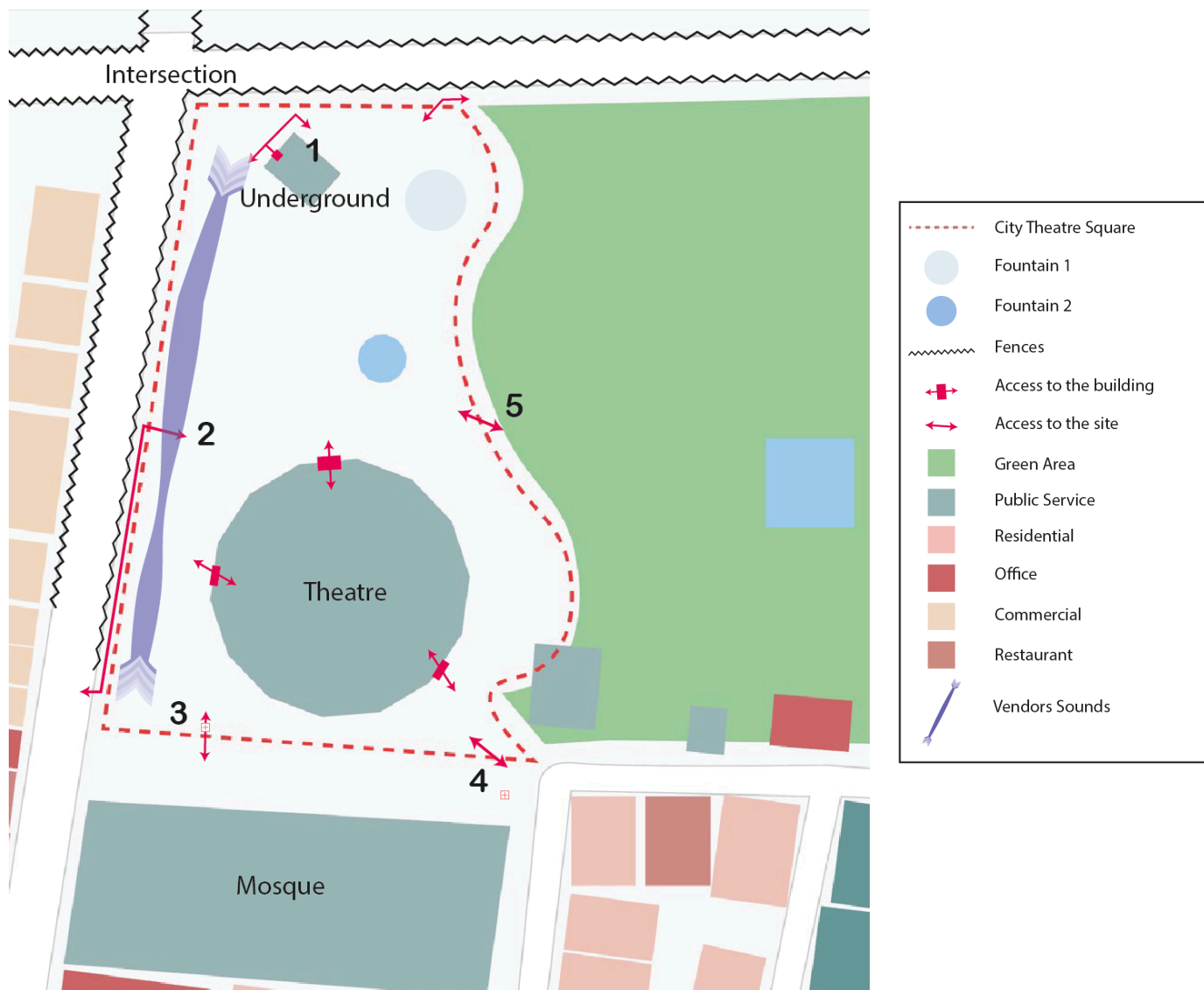


Figure 64 City Theatre Analysis of soundscape and spatial elements

This auditory diversity resulting from a mix of formal and informal activities, significantly influences user experiences. Informal activities such as peddling, and street vending has been repeated as a noticed sound in the interview, these groups have been categorized and referred to in the interview transcripts as vendors ('vendereros'), shouters, and sellers, collectively termed as sellers. These terms not only categorize but also give identity to the sounds they produce, emphasizing their role in the soundscape. This choice of words to name the individuals who are producing sound, vividly captures the auditory essence of the events occurring within the area.

"This area is the domain of the shouters. Where else could they go? I have no complaints. In their absence, there would be no other sounds to listen to, so it's best that the vendors stay here..." Interviewee T3,

The statement by Interviewee T3, "In their absence, there would be no other sounds to listen to" highlights the significant auditory role these vendors play in the public space. It suggests that their shouts and calls are not just background noise but an essential element of the soundscape, contributing to the vibrancy and liveliness of the area. However, this acceptance also opens a debate about the nature of soundscapes in public spaces. The perceived lack of alternative sounds could suggest a certain monotony or a limited auditory palette. It raises the question of whether the dominance of vendor calls is due to a genuine appreciation of their sounds or a resigned acceptance due to the absence of other auditory stimuli. This point of view might indicate a need for a more diverse and balanced soundscape that includes a wider range of sounds, providing a richer and more varied auditory experience for the users of the space.

Listeners' reactions to this informal activity are mostly positive, with some exceptional comments. They find it pleasant and compare it favourably to other noises. The activity presents a diversity of people and adds new information and atmosphere.

However, some of interviewees offered critique regarding these sounds. One remarked,

"They are acceptable, but I yearn for more cultural sounds when I enter this area. These vendors are predominantly clustered around the metro station entrance, and some even use microphones to capture the attention of customers deep within the public space. But is this fair?" (Interviewee T12)

This feedback highlights a wish for a soundscape that not only entertains but also enriches with cultural depth, questioning the balance between commercial calls and the preservation and promoting of cultural soundscapes.

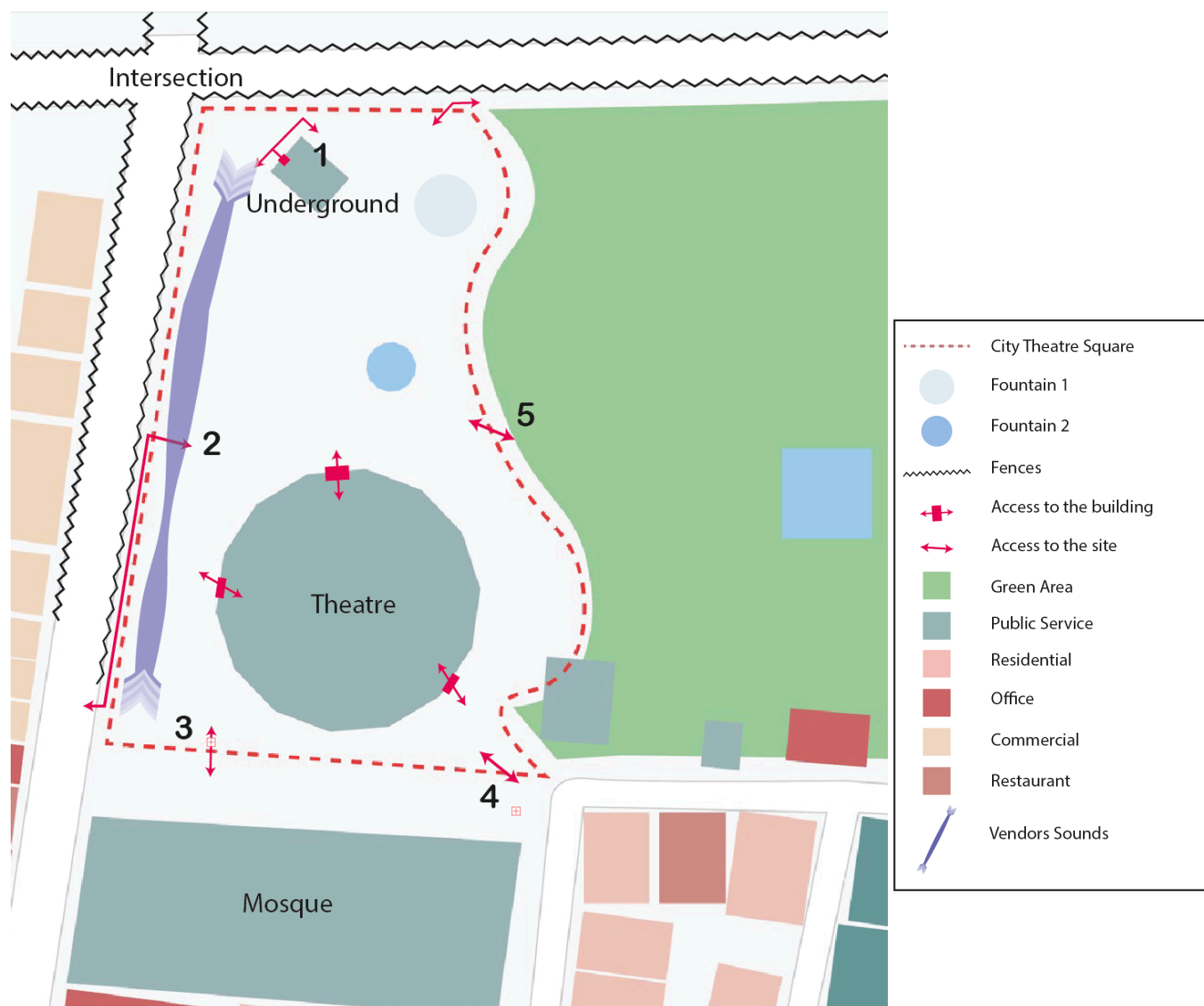


Figure 65 Entrances

Building upon the theme of diversity of sound coming from vendors, as emphasized by interviewees, the commercial calls experienced upon entering from the metro station Entrance 1 which is the main one, (as indicated on the map, figure 64) may inadvertently convey misleading signals to users, potentially influencing the activities and behaviours of individuals within this public space. Also, some vendors utilize high amplitude speakers (Picture found in Figure 65, Sound recording CTS5.3), aimed at garnering more attention, which introduces a repetitive auditory element that continuously broadcasts the same phrases. This strategy not only seeks to attract potential customers but also signifies a deliberate use of sound tools to engage public space users. Such tactics suggest an intentional expansion of the vendors' sonic territory, distinguishing their auditory presence amidst the cacophony of the urban environment.



Figure 66 Speakers located between entrance 1 and entrance 2 pointed in Figure 52

This effect is notably pronounced, with interviewees who were seated near the sound source of vendors shouts but also, their response shifted more positive as they moved away from the sound sources towards Entrances 4 and 5, (as indicated on the map, figure 5.2). Here, feedback became increasingly positive, even though some interviewees specifically mentioned being able to discern the sounds of vendors, particularly those located between Entrances 3 and 4.

Hence the data suggests that the location of sound-emitting elements—such as vendors—is crucial in shaping the overall ambiance and user perception of the area. This insight into spatial-auditory interaction within public spaces highlights the need for thoughtful structure and design that considers the intricate relationship between sound, space, and user experience.

The pleasantness of the human activity sounds emphasizes on the sense of place and the vibe in shaping the square's ambiance. As one individual emphasises,

“I’m not here for the theatre or this beautiful building. I am here for people and atmosphere.”

His individual appreciates the organic and spontaneous nature of human interactions, be it a casual flirtation, peddlers shouts or the quiet listening to music on headphones. This view aligns with another individual who expresses a positive experience for the peddlers, noting, Interviewee T12: “Their sounds are more exciting than the traffic sounds”. This indicates a preference for human-centric sounds over the mechanical noise of traffic, suggesting that the vibrancy and energy of human activities contribute positively to the square's sonic environment.

So far, it becomes evident that the public space in question hosts a remarkably diverse array of individuals from various social backgrounds, engaging in a wide range of activities and influencing the aural identity. This diversity, as observed and mentioned in interviews, is palpable to users and adds a vibrant dimension to the space. However, as previously noted, such diversity also presents potential challenges, particularly when it is not embraced by dominant societal forces. The friction that can arise from this lack of acceptance underscores the complex dynamics at play within public spaces as my finding shows. For example: Interviews with residents revealed a sense of exclusion among minority groups. One participant, a member of the local immigrant

community, expressed feeling unwelcome in the squares, stating, "We tend to stick to the edges because it feels like the center isn't really for us."

Furthermore, empirical research on the use of public spaces has found that when diversity is not embraced, it can lead to a homogenization of the user base. This phenomenon, referred to as the "self-selection effect," results in a public space that caters primarily to specific demographics, thus deterring a broader spectrum of society from using the space (Zukin, 1995). Such homogenization can diminish the vibrancy and dynamism that diversity brings to public spaces.

During the observation period, it was noted that certain groups tended to occupy peripheral areas of the squares, while the central parts were predominantly utilised by individuals who appeared to belong to more socially dominant groups. This spatial segregation suggested an implicit social hierarchy within the space.

The references to "Park Daneshjoo" during some interviews, and the associated stereotypes, illuminate a broader societal issue regarding the perception and utilization of public spaces. These discussions reveal underlying tensions and the need for a societal shift towards a more inclusive and adaptable approach to public spaces. Specifically, the area's recognition as a gathering point for the LGBTQ community signifies its importance as a space for socializing and community building. This aspect of social diversity, which contributes to the vibrancy and complexity of urban life, needs further exploration.

In the subsequent section, I intend to delve deeper into the social diversity within this context.

Social diversity

The soundscape of City Theatre Square, as shaped by the diverse informal activities, offers more than just a backdrop of general noise. The variety of sounds emanating from different sources is indicative of the mixed-use nature of this public space, echoing its social diversity. This acoustic diversity, ranging from the calls of street vendors to the conversations of pedestrians from different background, paints an auditory picture of the square's dynamic social fabric.

Interviewee (Interviewee T7) reveals an admiration for the square's social diversity, finding beauty in observing and listening to people from different backgrounds.

“The square, in its vibrant chaos and harmony, acts as a microcosm of our larger society. Here, you see a spectrum of life of few artists sharing their art, minorities raising their voices. It's a place where the social fabric is woven not from uniformity, but from the threads of individual stories, cultures, and expressions. To be in a place where you face reality is fair and valuable for me” (Interviewee T7).

This perspective highlights an appreciation for the square as a melting pot of social classes and activities, where every sound tells a story and adds to the richness of the auditory experience, specifically, the sound of peddlers who come from different social classes.

A visitor sitting on a bench contrasts the genuine behaviour in City Theatre Square with the perceived pretentiousness in wealthier areas, suggesting that the square offers a more authentic and unmasked experience. This observation reflects how sonic qualities interplay with social behaviours to create a unique atmosphere.

As another interview shows "Here you can be yourself, appreciating the lack of pretence compared to places like Fereshteh in the north of Tehran” (Interviewee T10). He found solace in the area's genuine atmosphere, contrasting it with other parts of like Fereshteh as he said, where people tend to be more pretentious.

Another interviewee (Interviewee T13) expresses a similar sentiment, finding beauty in the diversity of the environment. He enjoyed observing and listening to people from different social classes, intrigued by the choices vendors make in what to sell and how to promote their products. This curiosity extends to the language used by vendors, noting how specific wordings and accents for effect as he stated:

“Individuals engaged in the arts often find solace and inspiration in this space. My personal auditory experience features this sentiment. Not being from Tehran, I am particularly struck by the diversity and allure of the auditory landscape here, which attracts people from various locales. This diversity is a testament to the space's broad appeal, providing a rich spectrum of sounds that range from the profound to the everyday. Hooshang Golshiri's reflections in "Namazkhaneye Kuchak" resonate with me deeply; I believe that love begins with distinguishing between different sounds.

Sound is the first element that draws me in, captivating my attention from the stories that are behind human sounds motivating my ears to listen to and win

over the traffic background sound in this square. This auditory experience not only enriches my connection to the space but also enhances my appreciation for the intricate layers of sound that define it, from the most vibrant echoes of human activity.” (Interviewee T13)

However, not all views are positive. A critique arises regarding the intrusion of vendor sounds, perceived as inappropriate for the square's cultural identity. This perspective is expressed as,

“The sound of this vendor's cries is annoying... These sounds are belonging to bazaar not to this cultural public space.” (Interviewee T5)

This opinion highlights a clash between the desire for a more refined, cultural sonic environment and the existing informal activities. The tension between formal and informal activities in public spaces is not merely a matter of noise levels or aesthetic preferences. It is deeply rooted in the social and cultural fabric of the city. Informal activities often reflect the economic and social realities of less privileged inhabitants. Thus, their presence in public spaces like City Theatre Square is not just a matter of sound or convenience, but of social inclusion and representation.

6.1.2 Sonic Disruption and Stimulation

This study reveals understanding on how soundscapes can either hinder or enhance the experiences and activities of individuals in public spaces. To further analyse the reactions to the sonic diversity within this public space, it is crucial to examine the factors mentioned by individuals when describing sounds as either pleasant or unpleasant. This dynamic is profoundly influenced by **the type of sounds** present and the **specific meaning for the user** in City Theatre Square.

Human-Generated Noises as Primary Disruptors

A significant finding is that predominance of human-generated sounds, especially in interactive environments, as principal sources of disruption within this public space, albeit with certain characteristics. Loud conversations, children's cries, offensive

language, and disrespectful behaviours stand out for encroaching upon personal space and hindering activities. Such intrusions frequently escalate the sense of disturbance among users. Interestingly, contrary to initial assumptions, urban sounds such as traffic and public transportation noise are cited less often as sources of irritation. This alteration in perception highlights an increasing awareness of the impact of human behaviour and interaction over conventional urban noises in shaping the auditory experience of public spaces.

In dissecting the complexities of urban soundscapes, it becomes imperative to transcend the basic association of noise with mere loudness. Although the sound level is a critical aspect in characterizing noise, it is not the exclusive factor determining a sound's perceived disruptiveness or the discomfort it may cause (Hugh and Rice, 2017). Notably, sounds associated with arguments and misbehaviour are identified as particularly aggravating. This insight emphasizes the nuanced relationship between sound perception and the context of auditory experiences, suggesting a more sophisticated approach to evaluating and addressing noise in urban environments.

The Subjectivity and context of Sound Perception

The perception of what constitutes a noisy or uncomfortable soundscape is highly subjective, varying greatly based on context of sound and individual experiences and situations. This subjectivity is not just about loudness but encompasses a range of factors, including the sound's meaning and its relevance to the listener.

For instance, the term 'Tikeh' was highlighted as a particularly disturbing sound in few interviews in City Theatre. This term refers to unsolicited comments or conversations from strangers that can be perceived as threatening or intrusive. Such sounds, though not necessarily loud, can significantly impact the listener's sense of **comfort and safety**. Therefore, I would like to conduct a more thorough analysis, specifically focusing on the contextual variability and people's social and cultural backgrounds in sound perception. By this, I mean that the variation in how volume and type of sounds is perceived further complicates the connection between loudness and noise. In various situations, sounds with similar levels of loudness can be perceived in vastly different ways. Something that may be perceived as noisy in one scenario could be

considered quiet in another. Conversely, quieter sounds can occasionally be more disruptive than louder ones, potentially due to factors such as their meaning, frequency level, irregularity, and the context in which they occur.

Sound Meanings For Different People

Interview with a Retired Music Teacher (Interviewee T7)

Situation: Around 4 pm, He is sitting on a bench, in the map below, near the theatre building, the retired music teacher is browsing on his phone:

“This place, and as you mentioned the sounds, takes me back to my teaching days. ... I spent years instructing students in the nuances of music, teaching them to find harmony in notes that might initially seem discordant. Sitting here, amidst what many might call 'chaos' I find a symphony of life that's quite beautiful and sometime sad! I don't want to expand the negative side...But chaos is not noisy for me; it's a mix of sounds that tells a story. The distant hum of traffic, the soft murmur of conversations from passers, even the occasional sharp honk of a car – they all merge into a rhythm that echoes the vibrancy of our city. It is a reminder of the beauty and culture that still thrives here, despite the apparent disorder”.

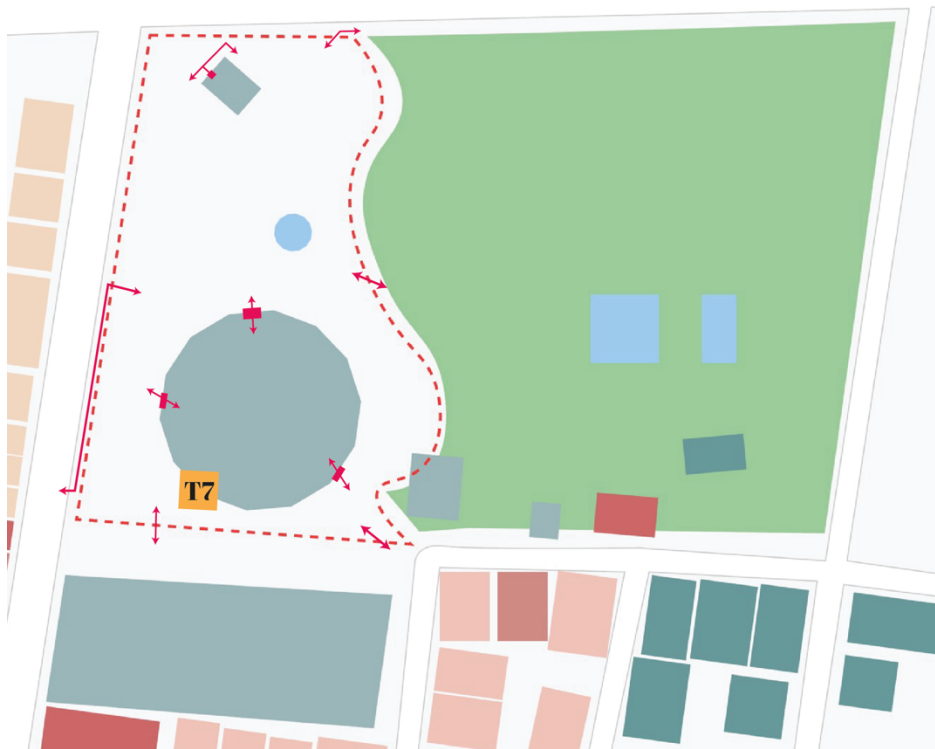


Figure 67 Interview Location

His background as a music teacher deeply influences how he perceives and interprets the sounds around him. Unlike someone without a musical background, he doesn't hear chaos; instead, he hears a symphony of everyday life. This highlights how personal experiences can transform one's interpretation of sound from mere noise to something meaningful and harmonious. Additionally, his use of the term "chaos" is particularly important. He redefines it, not as something negative or disturbing, but as a manifestation of life and energy. This redefinition challenges the conventional negative connotation of chaos, especially in an urban context.

He continues:

"To me, these sounds are **not disturbances**. Each sound has its place, much like notes in a musical score. The laughter of teenagers playing nearby, the clatter of a ball players on the pavement, the rustle of leaves in the breeze – they're all part of this urban melody.

In my teaching days, I would often tell my students that music is everywhere if only we listen. Now, in retirement, I find music not just in traditional melodies but in the everyday soundtrack of our city. It's a living, breathing composition

that continually evolves. This 'chaos' is a reminder that life, in all its complexity and unpredictability, is still a beautiful thing to be part of our city, despite the chaos. Chaos is not noisy for me...”.

The interview underscores the role of perspective in sound perception. What is perceived as noise by some can be experienced as a rich, complex soundscape by others. His perspective turns the urban environment into a living, breathing composition, highlighting the subjectivity in auditory experiences.

Another Interview with a young adult (Interviewee T9) shows a different perspective. Situation: Around 2 pm, he is sitting on the edge between the city theatre and Daneshjoo Park in Section B(c) in the map below, is smoking a cigarette, reflecting on his sonic experiences in the area

“.... this place has a lot of memories for me. We used to hang out here a lot when I was in university. It was like our go-to spot. But things have changed, and not really for the better. I keep coming back because I don't really have another place that feels familiar, but it's different now. The noise itself isn't the biggest issue for me. I mean, you expect a certain level of noise in a place like this, right? It's the city, after all. But it's the atmosphere that's become kind of disturbing. There's a tension in the air that wasn't there before. You see more fights breaking out between people, and sometimes there are confrontations with the police. It's happening more often, and it just changes the whole vibe of the place”.

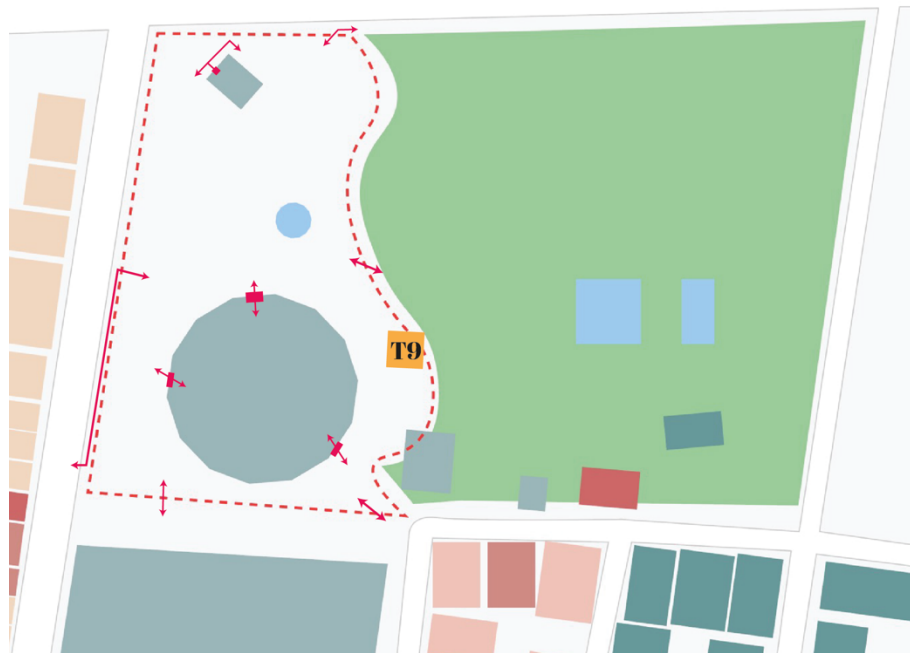


Figure 68 Interview location

T9 distinguishes between the physical aspect of noise and the overall atmosphere. While the noise level is not a primary concern, the atmosphere, influenced by the types of sounds (like fights or police interactions), significantly impacts his experience. He continued:

“It's not just about the sounds you hear; it's about what those sounds represent. Like, the sound of a siren or shouting used to be rare, but now it's become more common, and it just adds to this feeling of unease. It's not the lively, carefree place it used to be. Now, when I hear these sounds, they're a reminder of how much this place has changed and not in a good way”.

Interesting enough, the sounds are perceived as indicators of broader social changes in the area, such as increased confrontations and a sense of unease. This perspective shows how individual interpretations of soundscapes can reflect larger societal dynamics. His experience underscores the subjectivity in interpreting urban soundscapes. The same sounds that might be neutral or even positive to others carry a negative connotation for him, influenced by his personal history and observations of the area's transformation.

These different responses to sound indicate that the meanings of sounds and their elements are more important than the actual levels of sounds. If the sound elements have a pleasant meaning, people tend to evaluate the soundscape more positively, even when the sound level are categorising as high level.

6.1.3 Soundscapes of Disparity: City Theatre Square's Auditory Identity

The acoustic environment of City Theatre Square in Tehran, as previously outlined through user perspectives, constitutes a significant auditory canvas that mirrors the city's socioeconomic disparities. This analysis further explores the notion that these sounds, frequently referred to as the "sound of poverty" in interviews, extend beyond mere components of a soundscape. Rather, they embody a symbolic representation of broader societal challenges and injustices. This conceptualization underscores the intricate relationship between auditory experiences and their socio-cultural implications, revealing how sound can serve as a poignant indicator of underlying social dynamics and disparities.

Participants describe a soundscape composed of traffic noise, street vendors, minorities interactions (LGBT Community) and the distressing sounds of children in need. These elements merge into an auditory reminder of the struggles and disparities pervading Tehran. For instance, Interviewee T2's reflection on the mix of everyday sounds as a "constant reminder" of the city's challenges illustrates how soundscapes are imbued with deeper societal meanings.

Many interviewees considered these specific sounds within these public spaces as unpleasant, associating them with broader themes of social issues. The following interviews show:

Interviewee T2, responding to the question, "Can you describe your general experience of the sounds you encounter in the public spaces around City Theatre?" said,

"Every time I walk through these spaces, there's a distinct sound that always catches my attention. It's a mix of traffic noise, street vendors calling out, and sometimes, the sound of children playing or begging. It's like a constant reminder of the struggles and the economic disparities in our city."

When asked if these sounds affect his perception of the area, she replied:

"Absolutely. It's hard to ignore. These sounds, to me, represent the sound of poverty. They are a stark acoustic representation of the socioeconomic challenges we face in Tehran."

Another interviewee, T15, directly referred to the 'sound of poverty' and elaborated:

"...the rumbling of traffic, people's chatter, sometimes even arguments or pleas for help. It's a symphony of survival, I guess. It's not just about being unpleasant it's very sad."

Interviewee T15's description further enriches this narrative, portraying the soundscape as a "symphony of survival." This characterization moves beyond the discomfort of noise, touching on the emotional resonance of the sounds heard in these public spaces. The rumbling of traffic and the chatter of people become more than background noise; they are the living, breathing manifestations of the city's pulse, marked by survival and resilience.

Respondents often interpreted the soundscape as an acoustic identity of the place, imbuing it with symbolic meaning. The sound of begging or a vendor's call is not just an auditory signal but a representation of economic struggle. The sounds of poverty might include traffic noise, sounds of construction (indicative of rapid, often unplanned urbanization), street vending noises, and even the audible expressions of social unrest. These sounds become the voice of the city's underprivileged, narrating stories of hardship and resilience. They are not just heard but felt, evoking emotional responses that reflect the listeners' understanding and empathy towards the city's socioeconomic dynamics.

Interestingly, the focus of the respondents is not only on the volume or the acoustic properties of these sounds but also on their symbolic and emotional significance. This shift from a purely sensory to a symbolic interpretation highlights a deeper engagement with the soundscape. It suggests that the listeners are not passive recipients but active interpreters, decoding the sounds of their environment to uncover the underlying social narratives.

These sounds are not just auditory experiences but are deeply intertwined with the social fabric of the area (Atkinson, 2007). To this point, I believe that the disturbance of the sound is one reason for the meaning ascribed to it by the people. Specifically, in this context, even people in the public space describe the sound, attributing negativity, and positivity to its meaning and to the source and delving even deeper into questions of who the imitator is, what it means, and what is the background. Interestingly, none of the interviews mentioned the sounds being too loud or too quiet; their focus was primarily on the meaning and context of sound.

6.1.4 Acoustic Dimensions of Urban Safety

There has been a significant correlation between specific sound signals and the sense of safety, a major factor in determining the urban quality of City theatre square. This relationship emerged clearly from interviews conducted with users of these spaces, highlighting how auditory experiences shape perceptions of safety and comfort.

One striking outcome from the interviews data was the association of certain sounds with specific areas, influencing the perceived safety and comfort levels. For instance, an interviewee T4 identified sub areas within city theatre public space based on the sounds prevalent in each. He described one area, referred to as "Vienna," as being characterized by cultural activities, where the sounds heard were more pleasant and indicative of a safer environment. In contrast, another area, "Pattaya," was associated with sounds related to illicit activities such as drug dealing and prostitution. As interviewee T4 explained:

“In Pattaya, near Daneshjoo park, the sounds are unsettling. You constantly hear hushed conversations, the occasional scuffle, and it's not uncommon to overhear deals that sound... well, illegal. On the contrary, in Vienna part, you have a magical building of city theatre that gives you the feeling of being in Europe however I just imagine hearing some classical music that gives me the sense of comfort. But in general, in Vienna, the sounds are more about culture and community. Sometimes, you hear street shows, people laughing and talking. It's lively but in a very open and inviting way”.

I continued to expand the conversation with asking, “Do these sounds influence your sense of safety? Do you prefer to stay in this area rather than sitting on that bench over there (Pointing to Daneshjoo park)?

Interviewee T4 answered:

“Definitely. The sounds in Vienna rather than Pattaya create an atmosphere of openness and transparency. You don't feel like anything is hidden. It feels like a place where people come together to enjoy public life. It's reassuring and makes the space feel much safer.”

In some of the interviews as they mentioned something about safety, I tried to make it more clear by asking more question, the final one I raised with Interviewee 4 was:

“How important is the role of sound in shaping perceptions of safety in public spaces?”

“I'd say it's crucial. Our sense of hearing alerts us to potential danger, but it also helps us gauge the character of a place. The contrast between Pattaya and Vienna is a perfect example. The soundscapes in these areas create completely different perceptions of safety and comfort”.

This dichotomy in soundscapes led to the creation of an 'imaginary space' in the minds of users, defined by the activities, users, and sounds present in each area. Such mental demarcations of space based on auditory experiences highlight the profound impact of sound on the perception of public spaces.

Further emphasizing this point, human-generated sounds have been identified as key factors influencing perceptions of safety within public areas. This was particularly evident in interviews conducted near Daneshjoo Park, for example, as T4 also described previously, adjacent to the city theatre. Other participants frequently associated safety concerns with human sounds, using terms like "not safe" and "loud sound" to describe their experiences. Another interviewee, T10, explained an event that happened last month in this public space and the feeling of safety and the correlation with sound and perception of space. She explained,

“I heard stabbing... Yes, stabbing... This easily happened here with this much control. Imagine how unsafe this area could be! Even with all this public eye.”
(interviewee T10).

These descriptions highlight the complex relationship between soundscapes and the sense of safety in urban public spaces.

The discussions about safety concerns in public spaces, particularly in the park adjacent to the theatre known for its illegal activities, revealed that most people are primarily worried about robbery and crime. Beyond the actual incidents of crime, the fear of crime itself can lead to psychological stress. This fear often results in people avoiding areas perceived as unsafe, as noted by Warr (2000). Such avoidance behaviour adversely impacts commercial and leisure activities, road usage, and social interactions.

Interestingly, ambient sound plays a significant role in influencing the discomfort of users which is coming from the sound that introduce the feeling of being not safe, leading to the avoidance of public spaces. Although the intended function of these areas is to be welcoming and conducive to cultural activities, the presence of disturbing sounds related to crime, such as violence, conflicts, threats drastically alters the ambient sound, making it irrelevant and unpleasant.

Specific demographics and Safety in Public Spaces

The role of specific demographics, particularly women, in the perception of safety within public spaces, emerges as a significant theme in urban studies. This aspect was highlighted in two interviews conducted in the city square near the theatre, underscoring the nuanced challenges women face in these environments.

One interviewee T6, specifically raised concerns about women's safety in public spaces, questioning how they navigate these challenging environments.

“...there’s one incident that really stands out to me, and it's been etched in my memory. I was sitting on a bench in the square, just people watching, which I do often. There was this woman walking her dog, a scene you'd find normal.

But then, I noticed a man following her. At first, I thought maybe they were together, but it quickly became clear that wasn't the case.

The man kept talking to her, despite her obvious attempts to ignore him and walk away. I could overhear the conversation, and it was disturbing, to say the least. He was making all sorts of inappropriate comments, trying to get her attention by commenting on her appearance, and even making lewd suggestions. The woman, clearly uncomfortable, tried to quicken her pace, but the man persisted.

... I realized then and there that I wouldn't want any woman I care about to walk here alone. It's a stark reminder of the everyday realities women face in public spaces, realities that often go unnoticed or unaddressed by the broader public." (Interviewee, T6)

This concern is reflective of a broader phenomenon I have observed, which I term "civic inattention." Civic inattention refers to a typical mode of interaction among strangers in public spaces, characterized by minimal intrusions unless provoked. However, the dynamics of civic inattention shift markedly in Tehran, particularly concerning women. Intrusions often manifest as sexual harassment, encompassing inappropriate comments (known in Persian as "Tikeh"), unwanted physical contact, offensive gestures, and other forms of unpleasant vocal sounds aimed at attracting women's attention, such as whistling or making derogatory remarks. These incidents are notably prevalent on the streets, highlighting a stark contrast in the experiences of different demographics in public spaces. Second interview T4 mentioned women safety when he was talking about the unpleasant sound and their meaning:

"It's more than just hearing this sounds leading to feeling unsafe; it's about feeling unwelcome in public spaces that are supposed to be for everyone. Incidents like these, they don't just scare women; they also send a message that their presence in these spaces is conditional, subject to the whims and behaviours of men who harass them. It's a violation of their right to move freely and without fear. And it's not just the responsibility of women to

navigate these challenges; it's on all of us, especially men, to recognize and confront this behaviour whenever and wherever it occurs.” (Interview T4)

Moreover, the study reveals that non-threatening vocal sounds can significantly enhance the perceived safety in public spaces by fostering a sense of social presence. This phenomenon is particularly observed in areas like car parks and metro stations, where positive consumer responses are correlated with an increased perception of safety. In contrast, when vocal sounds are perceived as threatening, they substantially diminish the sense of safety, negatively impacting the responses of the users of these spaces. The dichotomy between non-threatening and threatening vocal sounds underscores the complex role that auditory experiences play in shaping the perception of safety and well-being in urban public spaces.

6.2 Keshavarz Boulevard

In the process of analysing the interview data gathered from Keshavarz Boulevard, distinct themes have emerged that illuminate the user perspective on the soundscape, space, and their perceptions within Keshavarz Boulevard. Through the revision of the responses, it becomes evident that the auditory experience of Keshavarz Boulevard plays a role in shaping the users' connection to and either appreciation or dislike of the area. The themes of Nostalgia, Solitary Bustle, and Multisensory Experience stand out as significant findings from the interviews conducted with visitors to this boulevard. These themes not only highlight the unique auditory characteristics of Keshavarz Boulevard but also underscore the importance of sound in constructing a sense of place and enhancing the quality of public spaces from the perspective of those who inhabit and traverse them. This analysis seeks to delve deeper into how specific sound-related vocabularies and the users' sensory experiences contribute to their overall perception of Keshavarz Boulevard, thereby offering insights into the broader implications for place making and management.

6.2.1 Nostalgia and the Soundscape of Memory

Keshavarz Boulevard, a vibrant place in the heart of the city, emerges as a touching piece of auditory nostalgia, where the soundscape serves not merely as a backdrop but as a dynamic medium connecting the present to the echoes of the past. This analysis delves into how the unique symphony of sounds along the boulevard—ranging from the bustling street life to the serene rustling of leaves and distant conversations—triggers nostalgic memories, thereby bridging the boulevard's rich historical identity with its contemporary essence.

Interviews with users of Keshavarz Boulevard consistently highlighted "nostalgia" as a dominant theme, attributed to the auditory experiences encountered. One respondent, referred to as BK12, distressingly noted, "Walking down Keshavarz Boulevard is like stepping into a memory, with each sound evoking a sense of the past." This response shows the impact of sound in evoking a sentimentality for the past, often idealized, and tinged with a bittersweet longing.

The nostalgia feeling coming from the soundscape of Keshavarz Boulevard is frequently described as "romantic," a perception fuelled by its spatial characteristics

and auditory elements such as which includes the soft rustling of leaves, the gentle hum of distant conversations, and the ambient melody of background music. These auditory elements, when combined with the visual characteristics long boulevard all covered up with trees with the scenic beauty create an environment that many users describe as inherently romantic.

Interviewee BK4's statement, "It's the background music of the boulevard that weaves a romantic tapestry," encapsulates the sentiment that the soundscape acts as a foundational element of the boulevard's romantic atmosphere. This suggests that the auditory environment plays a critical role in shaping the emotional and perceptual experience of space.

The analysis further indicates that the slow footsteps of individual, groups and lots of couples and the sound of prolonged conversations are not merely incidental but are integral components of the boulevard's romantic ambiance. These sounds of human presence and interaction contribute to a sense of intimacy and connection, reinforcing the boulevard's identity as a space conducive to romantic escapades.

The consistent identification of the boulevard as a romantic place by users suggests that the soundscape and spatial characteristics not only contribute to a romantic ambiance but also influence the overall satisfaction and emotional well-being of those who visit. This finding aligns with Bull's (2007) concept of "sonic intimacy," where sound contributes to the creation of intimate spaces within the public realm. The soundscape of Keshavarz Boulevard, characterized by its gentle and inviting auditory elements, facilitates a shared experience of intimacy among its users, further enhancing its romantic allure.

This observation supports the notion proposed by Schafer (1994) that the quality of an environment's soundscape can significantly impact individuals' perception and enjoyment of a space. The romantic soundscape of Keshavarz Boulevard, therefore, is not just an aesthetic feature but a critical component of the space's identity and appeal.

The atmosphere and Boulevard character significantly influences the experience, as highlighted by a respondent when asked about what constitutes a pleasant sound in this boulevard. He replied,

"The sound of my girlfriend's voice. She is gone now, but her voice remains a pleasant memory for me in this place that I want to hear." (Interview BK3)

Boulevard Keshavarz, as represented through the narratives of individuals, particularly those traveling from other cities, emerges not merely as a geographical location but as a canvas for the vivid, nostalgic characters etched in the minds of its visitors. This boulevard, with its distinctive ambiance, holds a unique place in the hearts of those who have formed personal connections with it, transcending its physicality to become a source of cherished memories and emotions.

One respondent reminisced about "long walks to Sandreen restaurant and going back with my date..." (Interview BK7), highlighting how specific activities and experiences at Boulevard Keshavarz have become intertwined with their personal history, influencing their emotional attachment to the location. Another individual shared a broader practice of finding solace and contemplation in urban spaces, stating,

"I have a place for my walks and loneliness in my mind in every city I choose one, Isfahan: Khajoo Bridge, Shiraz: Eram Boulevard. This place has been my everything since the pandemic, it's been 9 months now" (Interview BK13).

Such statements underscore the significance of physical spaces in facilitating emotional and psychological well-being, especially during times of isolation or change. The data suggests that memories play a crucial role in amplifying an individual's liking or disliking of a place and hearing or blocking the unpleasant sounds. People tend to intuitively remember experiences that elicit strong emotional responses—both positive and negative—while often overlooking those that are merely mediocre. This selective memory, in turn, informs sound preferences and aversions, even to sounds that may be rarely encountered in their daily lives. In the context of Boulevard Keshavarz, the continuous background sound of traffic (Sound Recording BK5.1), which might typically be dismissed as an auditory nuisance, is overshadowed by the personal and emotionally charged memories associated with the boulevard. This phenomenon indicates that the emotional significance of a place can transform even the most mundane aspects of its soundscape into something that is either imperceptible or, conversely, nostalgically significant.

Sound marks as Vessels of Historical Significance

The concept of sound marks—distinctive sounds that are emblematic of a particular place—emerges as a key theme in understanding Keshavarz Boulevard's nostalgic appeal. Interviewee BK2's reflection, "When you name Keshavarz Boulevard, even if you are not in the place, you can hear the sound of comfort, remember good memories... It is peaceful," highlights how sound marks serve as auditory triggers that transport individuals to past experiences, imbuing the present space with layers of historical significance.

The role of sound mark in triggering nostalgic memories extends beyond individual reminiscence, fostering a sense of community and belonging. Shared auditory experiences on Keshavarz Boulevard create a collective memory, offering a sense of identity and continuity amidst urban life's rapid changes. This communal aspect of memory is vividly illustrated during live music performances around the boulevard, which evoke memories of Tehran's cultural vibrancy and resilience in past days.

"The birds are still singing... so it is a place for couples, for long walks, for deep talks," remarked an interviewee BK3, encapsulating the boulevard's symbolic sounds. (Sound recording BK5.2)

Another sound mark that has been pleasantly mentioned was the music however it is not present in most days which is missing. Specifically modern pop music. One of the famous and first pop band, Black cats with Mehrdad as core singer, a renowned singer whose career blossomed in the vicinity, stands out as testament to the boulevard's cultural vibrancy. Mehrdad's story, as recounted by an interviewee, not only illustrates the personal connections that individuals forge with the soundscape but also highlights the role of music in enriching the collective memory of public spaces.

"Mehrdad's voice became the soundtrack of Keshavarz Boulevard," one interviewee BK11, reminisced. "His melodies would drift from the Couchini Night Club (Marked in the map below, Figure 68), where he played nightly, enveloping the boulevard in a cloak of nostalgia. Even now, when someone comes here to play guitar, reminding us of Tehran's glorious past."

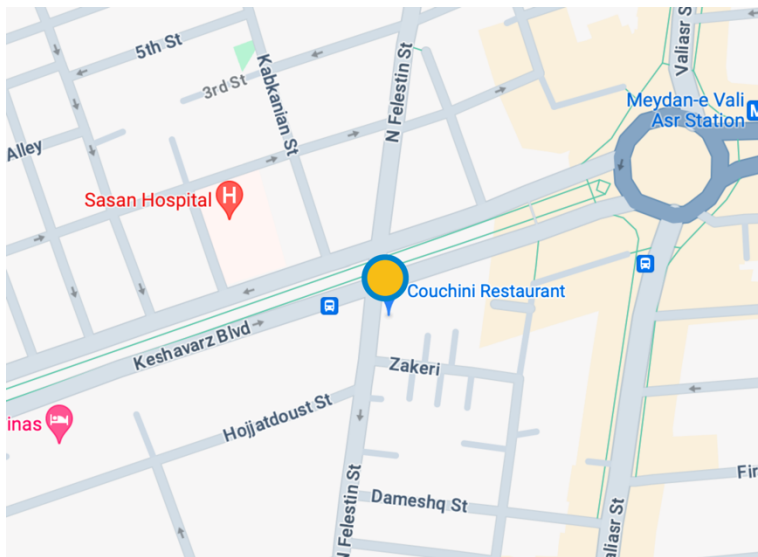


Figure 69 Couchini Club Location



Figure 70 Couchini Club, 2021

This narrative adeptly captures the intricate relationship between music, memory, and the spatial ambiance of Keshavarz Boulevard. The performances of Mehrdad in the Couchini club, situated along the boulevard, have left a lasting imprint on the area's auditory landscape, cherished by those who witnessed them. The mere mention of

Mehrdad's name in three different interviews conjures not only recollections of his music but also evokes the era when the boulevard thrived as a vibrant centre for cultural exchange and artistic creativity. The reference to Mehrdad's music during the interviews shows the value and impact that sound can have on our perception of place. For many, these musical echoes are a bridge to the past, a reminder of the boulevard's historical significance as a cultural hub in Tehran, celebrated for its nightclubs and dynamic nightlife. As one interviewee, BK7, nostalgically remarked,

"You know, Farhad Mehrdad was playing first in that club... so this place tells us about all the positive things, it wasn't only about Couchini. This place used to host many night events and drinking so the vibe was very lively."

This reflection highlights how Mehrdad's music has come to symbolize the boulevard's lasting charm and its role as a beacon of cultural and social vibrancy.

These sounds, whether emanating from a remembered past or experienced in the present, contribute to a layered understanding of Keshavarz Boulevard as a T as a space that not only transcends its physical confines but also serves as a vital repository of cultural memory and identity, emblematic of modernity and cherished recollections.

Historical Transformations of the Soundscape

The cultural landscape underwent a significant transformation after the revolution, with increased restrictions on live music and performances, both indoors and outdoors. The integration of religious sounds into the boulevard's soundscape marks a significant transformation, reflecting broader societal changes and the evolving function of public spaces. While these auditory elements are integral to the activities and identity of the space, feedback indicates a mixed reception, underscoring the complexity of public space soundscapes in mirroring diverse community values and experiences.

One notable change in the cultural events along the boulevard was the introduction of religious sounds. As previously mentioned, the installation of speakers facilitated the broadcast of prayers and sounds associated with important religious days or national holidays throughout the boulevard. This addition has elicited mixed reactions, with a

significant portion of the feedback expressing discomfort. The most distinctive sounds in the boulevard now belong to religious events, which, according to personal preferences highlighted in the interviews, play a significant role in the space's activities. The initiation of prayer and the dependency on the event type influence the soundscape significantly. Moreover, this shift has the potential to alienate visitors whose purpose of visitation diverges from religious observance.

In conclusion, the soundscape of Keshavarz Boulevard serves as a potent catalyst for evoking nostalgic memories, intertwining the personal with the collective, and bridging the historical with the contemporary. Through its distinctive sound marks, the boulevard engages users in a multisensory interaction with the space, where sound emerges as a crucial medium for the recollection, experience, and appreciation of the past.

6.2.2 Solitary Bustle, urban naturalism

Natural elements of boulevard Keshavarz have a unique sensorial position in the user's perspective of this public space. Despite the omnipresent backdrop of traffic and machinery, the natural soundscape asserts its presence, appreciated in the data collected. An interviewee, referred to as BK1, eloquently captures the essence of the boulevard:

"This boulevard is renowned for its aesthetic appeal, evoking emotions and beauty through its trees and long walks. It's a unique urban element that fosters an environment for individuals to relish their surroundings, despite its central urban location."

The concept of "busy but deserted" emerged as a recurring theme, encapsulating the boulevard's atmosphere during the quieter hours of early mornings, afternoon, and late evenings. This paradoxical description highlights the boulevard's capacity to provide a serene yet vibrant setting, a sanctuary for those seeking tranquillity within the urban sprawl. I would say a place which is busy but feels calm and comfortable.

The interviews revealed a rich mix of natural sounds that define the boulevard's soundscape, from the calls of crows and Minas to the soothing sound of water flowing through the raceway. The detailed accounts of these sounds, including the rustle of leaves underfoot or the wind's dance through the foliage, underscore the dynamic

interplay between natural elements and the urban soundscape. The seasonal variation of sounds further illustrates this relationship, with each season bringing its distinct auditory signature, from the spring rains to the stark silence punctuated by crows in winter.

Birdsong as an Indicator of Urban Naturalism

The clarity of birdsong within the boulevard amidst traffic noise, signifies the robust presence of nature in the urban setting. Interviewees' familiarity with the local bird species and their ability to distinguish between their calls exemplifies the deep connection between the boulevard's users and its natural inhabitants. One participant, aged between 60-70, remarked,

"When the listening is in the process, the birdsongs are clear and recognizable." Interviewees BK4 stated that, "...I know all the birds living here; there were more species before. They are all here because of this park next to the boulevard. While I am walking along the boulevard, I listen to birds and ask myself, 'Does this sound belong to a Starling or a Mina?' I can even distinguish the kind of woodpecker that visits this boulevard... When you visit here, especially at night, maybe before sunrise, you can hear the woodcock begin its calls clearly. This bird has lived here for a long time, maybe for over fifteen years, but my favourite sound belongs to the black-capped chickadee."

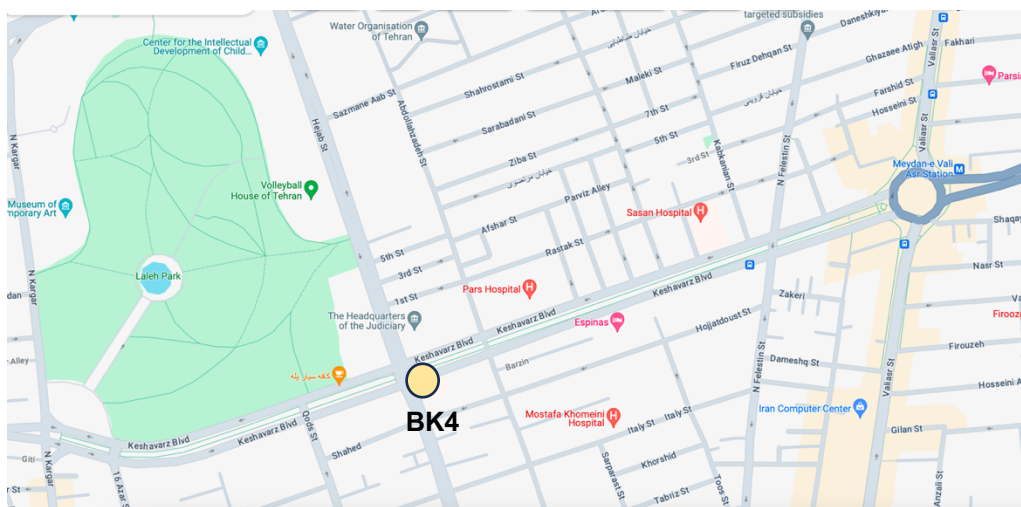


Figure 71 Interview Location

The louder bird songs in the northern part of the boulevard, attributed to the adjacent large park and the boulevard's spatial design, further emphasize the integration of natural sounds within the urban environment.

Ariel (2009) posits that birds adapting their songs in urban areas is indicative of a symbiotic relationship between natural sounds and the urban soundscape. This adaptation suggests that natural sounds not only persist but thrive within noisy environments, enriching the urban experience.

The connection between nature and wildlife is still almost there in this noisy part of the city, and it is also valuable. As the previous interviewee mentioned the species of birds, another interviewee explained the birds' sound on an even larger scale of the city:

“...the sound of crows, not only belonging to this area but also as a symbolic sound of Tehran in the afternoons. This sound is what I hear the most in outdoor”.

It is evident that the auditory experience of nature, particularly through birdsong, plays a crucial role in the perception and value of urban green spaces. The mention of the crow, a bird often associated with urban environments, highlights the adaptability of both birds and humans to their shared habitat. The crow's call, recognized as a symbolic sound of Tehran, underscores the intricate relationship between city dwellers and it is a commonality. This relationship is not merely based on the presence of birds but also on the meaningful interpretations and cultural significance attributed to their sounds. The interviewees' detailed knowledge and personal connections to the birds' calls suggest a layer of urban naturalism that transcends visual aesthetics, embedding itself into the sonic fabric of the city. This auditory connection with nature within an urban context not only enhances the quality of life but also fosters a sense of community and belonging among the city's inhabitants, further emphasizing the importance of preserving these natural soundscapes for future urban development.

The Impact of Weather on the Soundscape

The categorization of Boulevard Keshavarz sounds by seasons—rain in spring, rustling leaves in autumn, automobile horns in summer, and a blend of silence and

crow calls in winter—illustrates the temporal dimension of urban soundscapes. This seasonal differentiation highlights how weather conditions can modulate the urban acoustic environment, thereby altering the perceptual experience of city dwellers. The presence of rain and wind, for instance, introduces a naturalistic element into the urban soundscape, which can mask or diminish the impact of anthropogenic noise, such as traffic (Southworth, 1969).

The primary empirical observation added to the interviews reveals how strong wind gusts, following rainstorms, can transform the urban soundscape by swaying trees and creating an ambiance reminiscent of natural settings. An interviewee's comparison of this sound to ocean waves, albeit with an eerie undertone in the forest-like boulevard, underscores the subjective nature of soundscape perception. (Sound recording BK5.3)

“For me, the sound of the wind that I usually hear while walking in this boulevard is very relaxing and sounds almost like ocean waves. However, when you are in the middle of the forest and the trees are bending above your ear, it's quite scary but here is mysterious and pleasant.” (Interviewee BK7)

The acoustic characteristics of weather-induced sounds, such as the rustling of leaves and the howling of wind through building along boulevard, contribute to the soundscape's overall texture. These sounds possess certain frequencies and amplitudes that can evoke feelings of relaxation or unease, depending on the context and the listener's state of mind (Axelsson, et al., 2010). The phenomenon of trees swaying in the wind, described as "scary" by an interviewee when intensified by the boulevard's forest-like setting, exemplifies how sound can influence human emotions and perceptions of safety or danger.

6.2.3 Machinery Sounds

The auditory experience of Boulevard Keshavarz, as perceived by its users, is influenced by a complex overlay of sounds that contribute to what many describe as sound pollution or a noisy environment. This perception is primarily attributed to a variety of machinery sounds, including car horns, braking noises, anti-theft device alarms, harsh automobile sounds, and the distinct sounds of motorcycles. These

elements collectively form what can be termed the acoustic code of the boulevard, a soundscape that encapsulates the essence of urban auditory experience.

“We are next to these two streets with tones of yellow taxis so the sound of cars is part of boulevard Keshavarz, but I can say it is the identity of boulevard as you asked me before. In machinery sounds, especially the rumble of heavy trucks passing by. It's not something you hear all the time, but when you do, it's quite jarring against the quieter moments”. Interviewee BK12

The insights from the interviews reveal a nuanced perception of machinery sounds within the Boulevard Keshavarz. While the presence of car horns, braking noises, and the rumble of motorcycles forms a significant part of the auditory experience, these sounds are mentioned briefly and somewhat infrequently by the interviewees. This observation suggests an interesting dynamic: despite the acknowledged presence of these machinery sounds, they do not dominate the narrative of the boulevard's soundscape as one might expect.

This infrequent mention of machinery sounds among users is a noteworthy finding. It indicates a potential acclimatization to these sounds, suggesting that regular visitors to the boulevard may have incorporated the auditory presence of machinery into their mental model of the space. This phenomenon aligns with the concept of "sound adaptation," where continuous exposure to certain sounds leads to a diminished conscious awareness of them (Schafer, 1977). I will discuss this more in the next section.

6.2.4 Multisensory Experience

The concept of "total sensorial feeling" is a critical emergent theme from the interviews, providing a nuanced understanding of how the visual, auditory, and tactile stimuli within Boulevard Keshavarz synergistically contribute to a distinctive urban experience. This sensory engagement reveals how beyond the auditory dimension, visual and olfactory elements shape the perception and emotional response of individuals within this public space. Predominantly, participants who had recently

navigated the boulevard underscored its visual allure, frequently commending its lush greenery, aesthetic appeal, pedestrian-friendly design, and overall cleanliness.

An interviewee remarked,

"The sonic quality of the boulevard is rendered extraordinary by a sense of comfort. The machinery and natural sounds do not clash but merge. The visual serenity of the space prompts other senses to harmonize, culminating in a profound sense of calmness." Interviewee BK3

This statement emphasises that Boulevard Keshavarz's sensory experience is not merely defined by the absence of disruptive noise as to some extent the noise of traffic exists but rather by a rich tapestry of sounds that are perceived as cohesive and soothing. The significant influence of visual stimuli on this auditory perception cannot be overstated. The verdant landscapes and thoughtful spatial design are pivotal in tempering the auditory experience, as reflected in the narratives of our respondents, who noted how these visual aspects enhance the boulevard's peaceful ambiance.

It is evident that individuals who were stationary prior to participating in the study demonstrated a heightened awareness of ambient sounds. This observation suggests a profound interplay among the senses, wherein the visual and olfactory stimuli appear to mitigate the impact of sonic pollution from urban machinery. This phenomenon indicates that an individual's overall satisfaction with a space can remain unaffected—or even enhanced—despite the presence of potentially disruptive elements. However, exploring the impact of visual stimuli on other senses could be a subject for further research, given the time constraints of this study. During a field observation, a particular individual, observed few times resting at the boulevard, shared,

"I embrace the breeze, and the ambient sounds are pleasant. Its proximity to my workplace adds to its appeal. Everything feels just right, compelling me to take a moment of rest here before continuing with my day." Interviewee BK6

This personal account, alongside our qualitative findings, suggests that Boulevard Keshavarz offers a sanctuary where the cacophony of urban life is transcended by a

harmonious sensory environment. The unique coexistence of natural and mechanical sounds, framed by the boulevard's visual and spatial attributes, fosters an atmosphere where tranquillity prevails, illustrating the intricate balance and potential for urban spaces to nourish well-being through a holistic sensory approach.

In sum, the analysis underscores the importance of a comprehensive sensory design in urban planning, one that goes beyond visual aesthetics to include auditory and olfactory considerations, thereby enhancing the quality of life in urban settings. Boulevard Keshavarz serves as a compelling case study in the efficacy of multisensory integration, providing valuable insights for future urban development projects aimed at fostering serene and healthful public spaces.

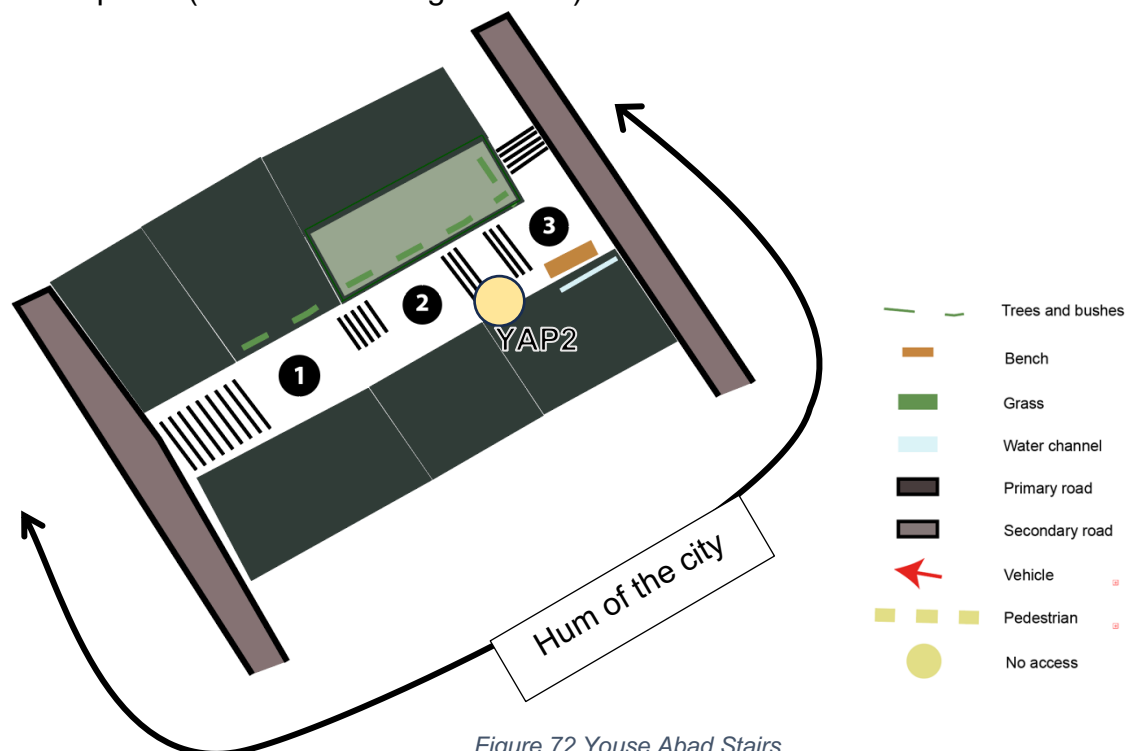
6.3 Yousef Abad Stairs

The last part of Tehran to delve into is Yousef Abad Stairs, a unique spatial character of an interstitial area situated between two rows of stairs in the Saei neighbourhood of Tehran. Despite its highly accessible location, this space remains visually secluded, offering a rare enclave of tranquillity within the bustling urban context. The analysis is rooted in qualitative data derived from interviews with users of the space, highlighting the prevailing themes of calmness, naturalness, cosiness, and a sense of freedom that characterize their experiences.

The area in question is strategically positioned, ensuring public accessibility while simultaneously remaining hidden from the direct line of sight. This paradoxical nature of being both accessible and secluded forms the basis of its appeal, creating a spatial experience that stands in contrast to the typical urban environment of Tehran. And, in a category which is a local public space.

6.3.1 Calmness

Interviewees frequently described the space as a **retreat of calm**, a stark departure from the surrounding sounds. This sense of calm is attributed not only to the reduced noise levels but also to the sensorial separation from the bustling city. The design and layout of the space, with its encompassing stairs, create a natural buffer. that fosters a tranquil atmosphere (Sound Recording YAS 5.1).



Interviewee YAP2 stated,

“The most striking aspect of this public space for me is the sound of the gentle breeze mingling with the distant hum of the city from the other side (Figure YAS 5.1). It's like the world is moving around you, but you're in a bubble of tranquillity. The way the wind plays a soft symphony with the leaves and the occasional birdcalls and even the stealthy tread of cats emphasizes a sense of calm. It's as if nature itself is orchestrating a moment of peace amidst the urban chaos”.

This narrative illuminates the intricacy of the soundscape, where even the subtlest movements contribute to the overall sensory experience.

Other interviewees emphasis on the word, “silence in the city” to describe their feeling toward the space in a way that first they can have a peaceful experience with the environment and second, they can also hear the sounds that happening more clearly than other places that in some occasion leads to even unexpected, optional activities such as feeding cats, reading, writing, smoking cigarettes and more optional activities. Another respondent remarked on the auditory experience of human presence as it is more foreground sound and louder than the hum of traffic of city in the background, "What I find remarkably calming about the stairs is the subtle sound of footsteps on the stone. There's a rhythm to it that's almost meditative. You hear people passing by, each step a soft echo, and it brings a sense of continuity and presence. It's not intrusive but rather, grounding, reminding you of the shared human experience in this secluded urban spot." Interviewee YAP4

This insight suggests that calmness is not derived from the absence of sound but from the quality and texture of the auditory environment, which resonates with the daily rhythms of life.

Harmonizing with Nature for a Peaceful Environment

The interviews collectively highlight how natural elements beside with those indicative of human habitation, underscores the essence of tranquillity. contribute to the Stairs' peaceful ambiance. The collected interviews underscore the significant role natural elements play in fostering the peaceful ambiance of the Stairs. Specifically, the gentle cooing of pigeons, characterized as both tranquil and soothing, in conjunction with the

melodious babble of water from an interior fountain within a shop, exemplify the profound impact simple natural acoustics can exert on the communal perception of public space. (Sound Recording YAS 5.2)

One interviewee, an employee frequently taking breaks outside, reflected on the water fountain's sound:

“The emanation of water from a nearby fountain introduces an additional stratum of tranquillity that is remarkably soothing. The unbroken, mild cascade serves to obscure the urban clamour, crafting a sanctuary of peace”.

Interviewee YAP1

Further augmenting this narrative, an interview reveals an interesting perspective that the visual aspect of the fountain pales in significance compared to its acoustic contribution, which alone can be a strong incentive for a positive sensorial response. This viewpoint is articulated by a gentleman managing a furniture store, who finds comfort in the sound of water:

“I come outside to feel as though I am outdoors, yet even the mere sound of water offers a more profound sense of well-being compared to the ambiance inside and its immediate vicinity.” Interviewee YAP3

This interview was conducted with a shop employee (Interviewee YAP3) who frequently steps outside for cigarette breaks (Figure 72). Observed consistently during the data collection phase, his reflections on the sound of water are invaluable. He acknowledges the audibility of the water sound from inside; however, he contends that experiencing this sound in the outdoor setting offers a distinct and more impactful resonance for him, elevating even the visual presence of the fountain as a sensory stimulus.

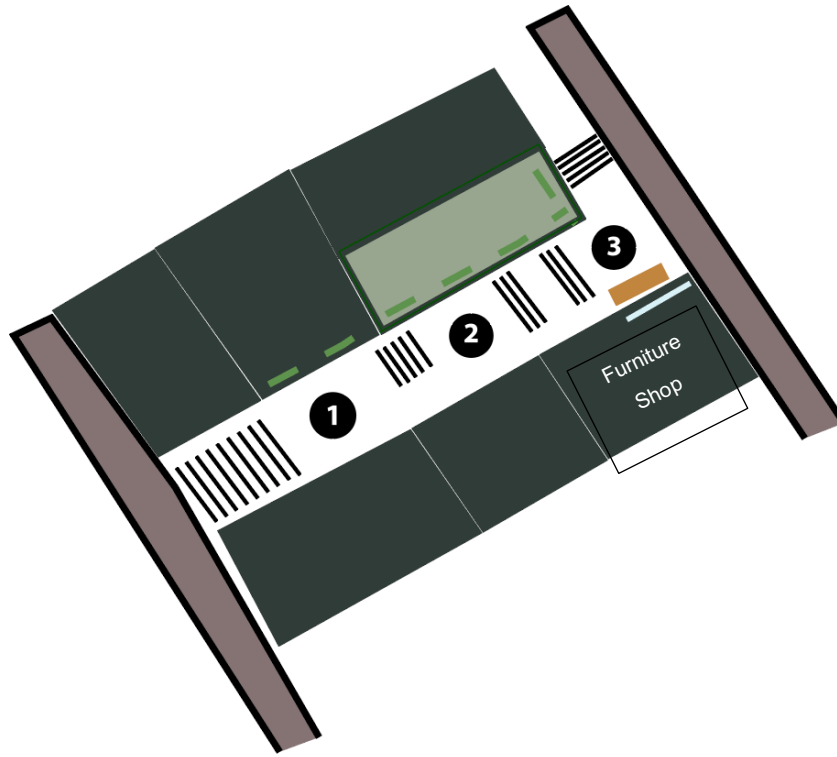


Figure 73 Front of furniture shop

6.3.2 Cosiness, Familiarity, and Community

Distinct from the auditory experiences in other public areas, the perception of soundscape here is notably different, suggesting a more private ambiance, possibly due to its location amidst residential zones and from less oversight by governing entities, allowing for a more informal community atmosphere. The auditory landscape that contributes this atmosphere is primarily shaped by human-generated sounds, and local sounds that involved human activities but in a different way to other places.

Rooted in its local essence, the area benefits from a serenity seldom found in more governed spaces, courtesy of its embrace by residential zones and minimal regulatory intervention. This serene enclave naturally cultivates an ambiance where the vibrancy of human existence—rich in conversations, laughter, and the spontaneous melodies of communal gatherings—permeates the air with an ease and prominence that stricter, more controlled environments cannot match. Enriched by the essence of residential life, the resulting soundscape blooms into an intimate tapestry, distinctly more personal and welcoming. Here, unlike the impersonal, mechanical sounds that defines more commercial or strictly regulated areas, the soundscape vibrates with the genuine

rhythms of community life: interactions and activities that, though ordinary, forge a unique sense of belonging. This intimate community atmosphere flourishes not by design but through the natural synergy of its setting, the community's self-governance, and the raw, unadulterated pulse of daily existence, weaving a soundscape that deeply resonates with both individual and collective human experiences. The interview data reveals how the incorporation of everyday sounds—people's murmuring, indoor activities, and footsteps—cultivates a positive perception of the cosiness of the environment.

The unique architectural features of the space, such as its enclosure and distance from main thoroughfares, naturally elevate foreground sounds while transforming conversations into a comforting and familiar, ambient backdrop that enriches the locale's atmosphere. One participant, Interviewee YAP3, captures this essence.

"As evening descends and the urban clamour diminishes, one finds oneself cradled in the soft rhythm of dialogue, whether it's shared among those on the stairs or echoing from homes. This ambiance is not merely an absence of noise but a harmonious absolute of sound that joins together a sense of community and intimacy, traits rarely encountered in public areas. For me, the Yousef Abad stairs transcend their physicality to become a haven of human connection."

Remarkably, the soundscape integrates occasional, community-specific sound events, adding layers to the sensory experience of community. Among these, the *azan* or Muslim call to prayer stands out (Sound Recording YAS 5.3), not only for its religious significance but also as a cultural sound mark within the neighbourhood, appreciated for its auditory qualities rather than its spiritual call. Despite its religious roots, interviewees did not necessarily associate it with a call to prayer in their daily routines or while describing it as positive. Instead, its repetitive nature and the way it harmonizes with the urban fabric bestow a sense of belonging to the neighbourhood. One individual remarked:

"The familiar and comfortable vibe here stems from a sound that repeats itself across the cityscape, not because of its religious connotation but due to the soothing vibrations and its flow amidst the buildings. It's the repetition, the familiar echo, that embeds it into the neighbourhood's identity. As you walk around this neighbourhood you can still hear the same sounds, it feels good..." Interviewee YAP6

Further enriching this analysis, another interviewee highlighted the adaptability and broader cultural resonance of religious sounds beyond their original meaning, illustrating how these sounds are woven into the fabric of community life and expression:

"I appreciate some of the religious sounds in Tehran, for its broader cultural significance, transcending locality to embody the essence of the Middle East. It's about community ownership and integration, even transforming into a collective voice during pivotal moments. The cries of 'Allah Akbar' from rooftops or balconies, especially under certain circumstances, become a powerful medium for communal expression, reflecting the unity and resilience within the neighbourhood." Interviewee YAP9

The interview is discussing the intangible tools that individuals employ to create a defensive barrier between themselves and the government. Among these tools, sounds in the city emerges less noticeable and a safer method of expression.

Further deepening the exploration of soundscapes and their significance, another interviewee, Interviewee YAP3, provided insights that accentuate the role of sound as an integral part of the community's culture separated from what government want to impose as a lifestyle.

"Sound, in this context, goes beyond mere background noise; it's a living heritage that breathes life into our community. One of the most profound examples is local accordion music men. This isn't just noise; it's a melody that has been part of our neighbourhood's soundtrack for generations. It connects us to our past, reminding us of all those sounds we could freely hear before revolution and diligence that define our identity."

Interviewee YAP3's insights shed light on the area's soundscape as a crucial medium for cultural preservation, linking the current community to its historical foundations through the audible expression of tradition. The sound of the accordion emerges not merely as a symbol of the persistence of last generation practices but as a manifestation of the community's enduring values and identity conveyed through melody.

The presence of accordion music in the neighbourhood's alleyways, although diminishing, represents a critical aspect of the local auditory heritage that warrants preservation. It's not exclusively only about the accordion but encompasses any Persian musical instrument that performers choose to play in public spaces. Interestingly musicians, often found performing in alleyways, are increasingly choosing to play pieces associated with Iranian singers who have relocated to Los Angeles from Iran after revolution. The music they used to sing in Iran or even continue singing in America known as Losangelisi music as most of the performer relocation after Islamic revolution in 1972. Despite the geographical distance, the actual culture hasn't been shifted. local accordion players, particularly, have selected these songs, performing them in the late afternoons to earn a living. This practice not only garners positive feedback but also strengthens people connection to a shared cultural identity. These musicians strategically choose residential areas over purely public spaces for their performances. This preference highlights their intent to remain closely knit with the community's roots and daily life, offering their music freely and facilitating easier connections with the audience with no restrictions. This perspective is highlighted by insights from an interview I conducted, where a middle-aged man who were just entering to his house next to the Stairs expressed that,

“Musician presence and acceptance in residential neighbourhoods like Yousef Abad contrast sharply with their reception in broader society. Despite governmental disapproval of certain musical expressions, including the ban on musical instruments on national television and restrictions on women singing, these alleyway performances offer a safe place. Here, musicians can

freely engage in their art, contributing to a societal fabric that values pleasant and harmless expressions of culture.”

At its core, these musicians navigate and challenge societal norms, utilizing their art to carve out spaces for cultural celebration and resistance. This nuanced interplay between the musicians and their environment underscores a broader discussion on the role of public performances in preserving and transmitting cultural heritage. Their selection of performance venues and repertoire serves not only as a means of livelihood but also as a potent declaration of identity and community solidarity. Utilizing this public space, individuals can embrace freedom, engaging in activities that may challenge societal norms or alternatively blend into the city's usual soundscape.

My field trip culminated in a delightful discovery: an unexpected café nestled within this public space in section 2 of the map of Stairs (Figure 73). From 5 to 10 pm, this spot officially transforms into a 'patogh'—a term in Farsi literature denoting a hangout or gathering place (Torkaman, 2018). Patoghs are vibrant venues for social interaction, where people come together to engage, play, and foster direct connections. This type of public space is characterized by a rich blend of social and optional activities, attracting groups that embody this concept. Throughout my interviews, the term 'patogh' was frequently mentioned, emerging as a key theme but not directly related to sound but more related to social characteristic in defining place.

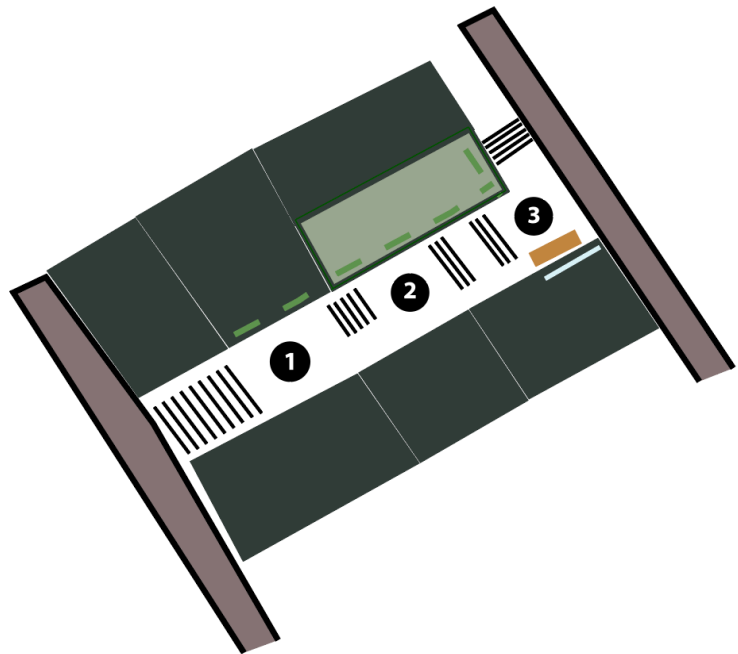


Figure 74 Cafe in Yousef Abad Stair Location 2

This reshaping of the public space incorporates sensory elements through a minimalist design, leveraging three primary tools: music, games, and a selection of coffee and tea. These elements cater to non-visual sensory experiences, playing a crucial role in the ambiance of the space.

Following three visits since its opening, I conducted an interview with the owner of the cafe. Our discussion delved into the inception of this pop-up coffee shop, shedding light on its unique approach to creating a sensory-rich environment for its visitors.

“I am a local, I’ve lived here for ten years...this stair lies between my home and my relative’s, serving as a transitional space. Yet, its allure is undeniable, continually echoing with the affection of its visitors who are regulars here. I sensed a void here, a need for a space where people could linger longer.”

He introduced a system that allows customers to select their music, thereby crafting a sonic environment conducive to social interaction and imbuing his café with a distinctive allure. Additionally, the games they played added soul to the place. For example, Wednesday evenings were reserved for Mafia, with at least 10 people

gathering to play the game. The new sonic atmosphere was warmly received, as evidenced by interviews; most participants found the environment significantly more appealing, whether they were regulars. (Sound recording YAS5.4 / YAS5.5).

Users expressed enthusiasm for being able to choose their music, with one stating, "It feels like we're part of creating the atmosphere here; it's personal and inclusive."

This aspect of the café not only enhances the customer experience but also fosters a sense of ownership and community among people.

He sees potential in this location for hosting cultural events and performances, leveraging the area's layout, which is flanked by alleyways that can be closed off for private gatherings. The café's strategic positioning—at the lowest point and centre of an L-shaped area—affords customers a vantage point and visibility.

Reflecting on the process of obtaining planning permission, He recalled,

"When I approached the local authority, they admitted to never having issued such a permit before. With just 3-4 pages of application, I received approval on the first day. The neighbours have no objections; in fact, I believe they are happier now. Everything is legal and more organized."

The café provides a selection of beverages, including tea and coffee, alongside an assortment of simple pastries. people are invited to enjoy games with seating available for both groups and pairs. Additionally, a speaker is available for anyone who wish to play their own music, with signage encouraging visitors to connect their devices and enhance the atmosphere with their personal playlists. The strategic choice to allow users to select their music at the café not only personalizes the space but also democratizes the auditory environment, creating a shared soundscape that reflects the diverse tastes and preferences of the community. This approach fosters a sense of ownership and intimacy, making the public space feel more like an extension of one's living room rather than an impersonal, communal area.

The concept of cosiness transcends mere physical comfort, weaving together elements of warmth, belonging, and community into a cohesive experience. In the Yousef Abad Stairs, this experience of cosiness is cultivated not just through its physical design but is significantly enriched by the incorporation of sound. Whether it's the music chosen by café visitors or the ambient noise from social interactions and

cultural events, sound enhance the space's atmosphere, making it more inviting and communal.

Public space serves as a compelling case study on how thoughtful auditory design can transform public areas into lively hubs of social interaction and engagement. The effectiveness of this auditory strategy is evidenced by positive feedback from users and an observable increase in social activities within this public space. These outcomes underscore the vital role of sound in creating spaces that are not only welcoming and inclusive but also conducive to gathering, sharing, and fostering a sense of community. Thus, the integration of sound within this space is not just an enhancement; it is fundamental to cultivating an atmosphere of cosiness and belonging.

7. Conclusion

In this final chapter, I consolidate and reflect on my findings to deepen the comprehension of how urban environments are experienced through sound and its impact on urban planning and design. This effort seeks to contribute valuable insights to urban studies and related interdisciplinary fields, highlighting the critical importance of sound in enhancing the sensory experience of public spaces.

Chapter seven summarizes the research journey, starting with a recap of the problem statement and objectives to clarify the identified research gaps. Following this, it succinctly outlines the key findings, presenting an overview of the qualitative data collected and analysed throughout the study. This examination not only reveals the complexities of urban soundscapes but also demonstrates their significance in the sensory engagement with public areas.

Additionally, this chapter details the significant contributions of my research to theoretical knowledge and practical applications, advancing our grasp of sensorial urbanism. It emphasizes the novel intersections between auditory experiences and urban design, offering fresh perspectives that contribute to the growth of urban studies. Lastly, the chapter addresses the research limitations, viewing them as avenues for future research in the sensorial aspects of urban environments. By recognising these challenges, the research sets the stage for further studies to expand upon these initial findings, thus fostering the continued development of urban studies with an enriched understanding of the sensory experiences that shape our interactions with urban spaces.

7.1 Restatement of the Research Problem and Objectives

The research was guided by two objectives, leading to exploration of how soundscapes influence urban public spaces quality and their perception by users.

These objectives were:

- To broaden existing conceptual frameworks concerning public space quality by incorporating an auditory perspective. This research achieves this by integrating auditory experiences, thus acknowledging sound as an important element of the sensory experience in urban environments.

- To explore the role and impact of sounds by investigating how soundscapes influence the perception, use, and design of urban public spaces. This includes highlighting how various sounds contribute to feelings of diversity, comfort, legibility, identity, and inclusivity.
- To employ a framework derived from various disciplines, utilizing a qualitative approach to understand the quality of the sonic environment.
- To elucidate the relationship between spatial components and sonic environment through observational assessments, utilising a methodology inspired by Whyte's sensorial ethnographer's approach.
- To contribute to scholarly discourse within Iran and the Middle East by expanding discussions on the intersection of soundscapes and urban planning within Iranian metropolitan areas. Through the adoption of cutting-edge methodologies, the study aims to lay the groundwork for enhanced urban planning techniques both within the local context and in other comparable settings in the Global South.

In this thesis, the exploration of "the role of sound in creating high-quality public spaces" aims to elucidate how auditory experiences significantly contribute to the design and perception of urban environments.

This research was done in three different sites, City theatre square, Keshavarz Boulevard and Yousef Abas stairs. So based on the review of these different places, I learned different lessons from each public space as the soundscape are distinct, users are different and spatial elements are different. Each site offered important lessons for the future research and practice.

7.2 Summary of Key Findings, harmonic Tehran

The findings of this study illustrate that the soundscape of Tehran can indeed be understood as a harmonic structure, where diverse auditory elements coalesce to create a complex yet coherent urban symphony. The concept of "Harmonic Urbanism" is not merely an abstract notion but is grounded in the intricate relationship between spatial design, human activities and sonic ambience in city of Tehran. Each public space within Tehran contributes a unique auditory 'note' that, when combined, forms a harmonious urban soundscape. The city theatre's vibrant and varied soundscape,

the rhythmic yet subdued auditory environment of Keshavarz boulevard, and the serene, enclosed sounds of Yousef Abad Stairs collectively exemplify how different urban elements, and their respective soundscapes can synergize to create a balanced and dynamic auditory experience. Tehran, with its complexities stemming from modernization, migration, political shifts, wars, and numerous historical challenges, presents a unique urban tapestry that evolves daily. This intricate structure reflects a harmoniously orchestrated urban sound environment where deliberate design and spontaneous human activities blend seamlessly. "Harmonic Tehran" captures the city's ability to balance its auditory landscape, embodying a symphony of urban life that is both multifaceted and cohesive.

The initial finding of this study on Harmonic Tehran emerges from an observation and site assessment focus on sound. This assessment reveals that spatial elements and space design significantly influence the soundscape of public spaces. This influence can resonate with the preferences of groups, setting the stage for the subsequent findings.

Distinct spatial arrangements observed in locations such as city theatres, Keshavarz Boulevard, and Yousef Abad Stairs each forge unique sonic environments, sculpted by their specific design and functional use.

The city theatre, as a connection for a number of activities and one important node of the neighbourhood, becomes a source of diverse soundscapes. In contrast, Keshavarz Boulevard, situated near major thoroughfares, experiences passive traffic noise due to its boulevard design and slower vehicular movement, enhancing the space's auditory appeal. The analysis indicates that this area, due to its proximity to numerous intersections, experiences elevated levels of traffic and machinery noise. This crossroad acts as a focal point for various traffic-related auditory phenomena, including the screeching of brakes, the beep of horns, the rumble of asphalt under heavy loads, the roar of motorcycle engines starting, and the fluctuating sounds of acceleration and deceleration. Additionally, it is a hub for a broader spectrum of mechanical activity noises, making it a distinctive sonic environment.

This assessment reveals that physical design considerations play a crucial role in mitigating or exacerbating the unpleasantness of public spaces. Notably, the design of intersections and the choice of paving materials can intensify traffic sounds,

resulting in a soundscape that is louder and more intrusive. This phenomenon occurs even in spaces that are visually appealing and seamlessly integrated into the urban fabric, underscoring a potential oversight of the auditory dimension in urban design. A reliance on visual aesthetics and other qualities such as connection and accessibility alone to enhance place quality may inadvertently neglect the comprehensive sensory experience of the space.

A case in point is the residential area surrounding Yousef Abad Stairs, which, through its enclosed nature, cultivates a more private and agreeable soundscape. Here, the design allows for the emergence of sounds that are generally more appreciated and sought after by its users. I argue that the shape of this enclosed space creates a platform for sounds to be more distinguishable and more in favour and control of the users. This finding underscores the need for a more holistic approach in urban design, one that encompasses not just the visual, but the full spectrum of sensory experiences to truly enrich public spaces.

The second finding of this research highlights the subjective nature of sound perception and identifies several key factors critical to cultivating desirable soundscapes within urban space. Through a combination of literature review and sound recordings, it was evident that traffic noise often dominates the urban auditory landscape. However, sounds emanating from human activities and natural sources tend to be more prominently recognised and discussed by interview participants. This observation leads to the argument that human activities generate a variety of sounds that, though may not be as visually apparent, engage individuals more due to their dynamic rather than static nature.

These auditory experiences are constantly changing and evolving—unlike many visual aspects of a space that remain constant over time, such as façade of buildings, landscape, and scale of surroundings. The dynamic nature of sound means it can convey a sense of immediacy and presence, making the environment feel more alive and engaging. Sounds can signal the presence of others, activities happening around the corner, or changes in the atmosphere, such as the beginning of street music or the silent after it passes. Furthermore, it illuminates diverse meaning for individual as each person can interpret it differently.

Sound, therefore, is understood to be multifactorial, influenced by a myriad of elements that contribute to its perception. Consequently, the significance and meaning attributed to activities in public spaces—from vendors at the City Theatre to the laughter and interactions of young adults in Boulevard Keshavarz—play a crucial role in the assessment of these areas. This underscores the importance of considering the diverse auditory outcomes of human presence and activity when evaluating and designing public spaces to enhance the overall sensory experience of urban environments.

The third finding of this research features the nostalgic power of sound, its inherent meanings, historical repetitions, and symbolic significance within a culture or as a representation of specific phenomena. This insight reveals that the interpretation and cultural significance of a sound can often transcend its acoustic properties. For instance, the meaning behind sounds generated by human activities—whether perceived positively or negatively—plays a crucial role in how they are received and interpreted within the community.

Sounds can serve as auditory markers of history and culture, such as the distinctive music of an accordion in residential areas or the calls of vendors, echoing traditional practices and contributing to the cultural tapestry of the space. In the bustling intersections of Valiasr and Enghelab, taxi drivers' shouts not only facilitate transportation but also symbolize the vibrancy and connectivity of the urban environment. Similarly, the historical sounds of *Mareke gir* (Street shows), though potentially louder than traffic noise, acquire a unique significance due to their cultural connotations and the role they play in public life. Moreover, street performances, from music to theatre, add layers of vibrancy to Tehran's urban soundscape. These performances are not merely entertainment; they are expressions of the city's dynamic cultural life, reflecting the creativity, struggles, and aspirations of its inhabitants. Through these public displays, performers and audience members alike engage in a dialogue that reinforces community bonds and cultural identity. Traditional Persian musical instruments, such as the Santur, Tar, Setar, and Daf, produce sounds that are deeply ingrained in the cultural fabric of Tehran. These instruments, whether heard in formal concert halls, intimate gatherings, or spontaneous street performances, tell stories of love, loss, joy, and resistance. The music played on these instruments

transcends language barriers, communicating the rich story of Persian history and emotions to listeners. Intriguingly, an array of sound marks within Tehran's auditory landscape can be attributed to the natural environment, such as the distinctive calls of regional birds and the ambient sounds associated with varying weather conditions. Beyond the realm of anthropogenic sound, the natural acoustics of Tehran make a substantial contribution to the city's overall soundscape. The melodious singing of birds indigenous to the area, or the gentle rustling of leaves stirred by the wind, serves as a harmonious counterbalance to the cacophony of urban life. These natural sounds act as gentle reminders of the city's inherent natural beauty, seamlessly integrated with its architectural marvels. They provide not only moments of tranquillity but also forge a deeper connection with the natural world, thereby enhancing the richness of the urban experience.

This finding highlights a complex link between sound and societal values, where even sounds traditionally categorised as unpleasant can acquire a cherished status due to their nostalgic resonance and cultural significance. Unlike the visual appeal of spaces, which demands a balance between aesthetics and functionality, the character of soundscapes may embody meanings that transform seemingly disruptive noises into valued elements of the urban soundscape. This underscores the multifaceted role of sound in shaping not only the physical but also the emotional and cultural dimensions of public spaces.

Sounds that serve as symbolic or are characteristic of a specific location play a crucial role in urban identity, cultural preservation, and the creation of a sense of place, yet urban design guidelines often overlook their importance. Yet, this dynamic underscores that the character and identity of spaces are influenced by a multitude of sensorial factors beyond mere spatial quality. The recognition of Intangible Cultural Heritage (ICH) highlights the importance of revitalizing cultural expressions that are alive, passed down orally through generations, and continuously reaffirmed by communities. These expressions are vital for furnishing communities with a sense of identity and promoting diversity, especially in a globalized world. They illustrate the complex interplay between sound, space, and community identity, revealing how the auditory landscape of a place can foster a profound sense of belonging and peace.

The next finding is this study uncovers the pivotal role soundscapes play in fostering inclusivity and diversity within Tehran's urban spaces, simultaneously highlighting the intricate social dynamics at play. The study reveals that while soundscapes can significantly enhance the welcoming nature of spaces and enrich user experiences, the dominance of certain acoustic environments might inadvertently reduce social interactions. For example, the City Theatre Square, originally a vibrant locus for communal gatherings, has gradually become a mere node for transit and exchange within the city. This shift illustrates a potential misalignment with the fundamental urban design objective of creating spaces that encourage interaction and community engagement.

One other findings of this research underscore the profound impact of sonic events on the creation of community and identity within urban spaces. Sonic events, in this context, refer to specific auditory occurrences or arrangements that resonate with the collective experiences and memories of a community. These events range from organised concerts and street performances to the spontaneous convergence of sounds in a public square. They do not merely fill the air with noise but act as aural signatures that give a place its unique character and foster a sense of belonging among its inhabitants.

The significance of sonic events extends beyond the mere presence of sound; it lies in their capacity to forge connections between individuals and the spaces they inhabit. These auditory experiences become a shared cultural currency, contributing to the social fabric and identity of urban communities. For instance, a regular musical performance in a city park might evolve into a weekly gathering point, transforming the space into a communal hub where people not only come to listen but to partake in a shared cultural experience. Similarly, the distinct sound of a local market, with its cacophony of vendors, chatter, and city sounds, embeds itself in the collective memory of the community, becoming an integral part of the urban identity.

Furthermore, sonic events can act as catalysts for community engagement and identity formation by providing a platform for social interaction and cultural expression. They facilitate a communal space where narratives are shared and cultural practices are performed, thereby nurturing a sense of belonging and collective identity. The auditory elements of these events – whether the rhythmic beating of drums, the

melody of a local band, or the ambient sounds of a bustling street – become symbols of communal identity and anchors of collective memory.

The influence of sound on public space engagement is undeniable. From the tranquil ripple of water to the bustling energy of a market, or the serene ambiance of a park, the auditory environment can significantly impact public participation in urban settings. Schafer's assertion that well-conceived soundscapes can boost the appeal and functionality of public spaces underscores the need for deliberate acoustic planning. Urban designers possess the tools to intentionally sculpt these soundscapes, thereby reinforcing the publicness and inviting nature of urban locales. The City Theatre Square serves as a prime example, where the auditory dimension, rather than visual cues, defines spatial boundaries. Despite the visual consistency provided by uniform pavements and neatly arranged planters, it is the diversity of sounds stemming from myriad activities that truly shapes the character of the space. This nuanced interplay between sound and social life in Tehran reflects the city's lively essence and the complexities faced in urban design—echoing Lefebvre's insights into how urban spaces are a manifestation of the wider social and cultural fabric. In this context, Tehran's soundscape not only mirrors the city's dynamic pulse but also poses challenges and opportunities for urban planning, emphasizing the critical balance between movement, efficiency, and leisure.

The last point that I would like to include in this section is, another finding within this research is the influential role that sounds, along with the visibility and presence of people, play in fostering a sense of safety and comfort within urban environments. To briefly point to the data, one participant notably values the organic and spontaneous nature of human interactions, ranging from simple acts of casual flirtation and the vocal calls of peddlers to the more solitary experience of listening to music through headphones. This appreciation for the human element in urban soundscapes is echoed by another participant, Interviewee T12, who remarks, "Their sounds are more exciting than the traffic sounds." This observation underscores a collective preference for the sounds associated with human activities over the ambient mechanical noise of traffic. Such findings indicate that the vibrancy and energy emanating from human interactions play a crucial role in enriching the auditory experience of public spaces, thereby enhancing the overall quality and perception of these environments.

6.3 Key Contributions

Following the presentation of the major outcomes of this research, this section offers an examination of its contributions. These contributions are diverse, spanning methodological enhancements that augment current sensorial analysis techniques; theoretical advancements that question and redefine conventional notions, offering fresh analytical frameworks to comprehend the soundscape of urban environments; and empirical discoveries, drawn from a meticulous and structured methodology. The study of public spaces in Tehran offers innovative insights into the interaction between human behaviour and spatial environments through the lens of auditory experiences. This analysis has the potential to inform urban design practices in cities across the Middle East, such as Istanbul and Beirut, along with neighbouring countries that share cultural similarities. This exploration enhances our comprehension of Tehran's distinct sensory identity and establishes a foundation for future inquiries into urban soundscape design and analysis in the Global South. By doing so, it also argues for a comprehensive approach to examining how human behaviour intertwines with sensory environments in urban settings, paving the way for context-specific research that considers the full spectrum of sensory experiences in city life.

Methodological

My methodology draws upon sensory ethnography, incorporating a diverse range of techniques influenced by scholars such as Whyte (2010), Pink (2007), Degen and Rose, (2012) and Southworth (1967), renowned for his observational studies and interview methods. This approach is rooted in the conviction that detailed interviews can unveil nuanced insights into individuals' emotional experiences and perceptions of space. In contrast to the conventional practices of urban designers and planners, who often rely on recorded or designed situation assessments, my research adopts an in-situ evaluation of soundscapes and sensory stimuli. This method represents a departure from standard practices, emphasizing the importance of direct engagement with the environment to capture the complexity of urban life.

The flexibility and adaptability of these methods make them highly effective across different urban settings, providing a framework that can be tailored to specific research

needs. Such versatility is invaluable for urban planners and designers, enabling them to gain a richer understanding of public space interactions and perceptions from the perspective of those who inhabit these spaces.

Moreover, the integration of visual analysis with sound recordings and observational notes presents a unique challenge. However, this multifaceted approach facilitates a more profound analysis of urban environments, offering insights that surpass the limitations of quantitative research alone. Through this comprehensive qualitative investigation, the study achieves a level of detail and depth, revealing the intricate dynamics of public spaces and the sensory experiences they engender.

Theoretical

In concluding discussions of this thesis, I explore the profound influence auditory experiences have on urban public space design and perception, aiming to inform theoretical understandings. Listening, despite its ephemeral nature and often overlooked importance, is identified as significant within geography, anthropology, and especially urban design.

In revisiting the foundational theories within the built environment field, this thesis recognizes the significant potential influence of Lynch and Schafer on urban design and sensory studies. Lynch's (1960) concepts of urban legibility and imageability, detailed in Sections 2.3.4 and 3.1.1, emphasize the importance of visual markers in shaping cityscapes. Meanwhile, Schafer's exploration of the soundscape, discussed in Sections 2.2.2 and 2.2.4, underscores the role of sound as a crucial element of urban life. This thesis not only critiques these theories but also builds upon them, addressing their limitations. Specifically, it argues that Lynch's focus on visual elements may overlook the significance of other sensory experiences in urban environments, and that Schafer's soundscape theory could benefit from a deeper consideration of the cultural and social contexts within which urban sounds are embedded.

Through the sensory ethnography of Tehran, this thesis provides new perspectives that extend these classic theories. For instance, the research reveals that sensory experiences, such as sound marks identified in interviews, play a critical role in the nostalgic appeal of Keshavarz Boulevard. A notable example is the music of the

famous singer Mehrdad, often heard in Couchini Bar, which has become emblematic of the boulevard's enduring cultural and social vibrancy. Additionally, the sound of specific instruments in residential areas, like the distinctive accordion melodies associated with the stairways of Yousef Abad, serves as an auditory landmark, helping residents to form a deeper connection with the familiar yet lively atmosphere of the neighbourhood.

Similarly, the soundscape of Tehran, rich with cultural and religious auditory cues, challenges Schafer's predominantly Western perspective on noise and sound, highlighting the need for a more culturally sensitive approach to urban sound studies. This research reveals sound's deep impact on public spaces, traditionally enhanced by visual, physical, and tangible means, asserting listening's role not just in urban studies discourse but as an essential, though underexploited, design tool.

Contributions to Theory and Urban Design Qualities:

Inclusivity: The research highlights the potential of soundscapes to make urban design more inclusive. By tapping into the wide range of auditory experiences of public space users, urban environments can be crafted to appeal to varied sensory interactions. Additionally, to provide diverse sounds, soundscape can attract different people to find their pleasant sound to engage in the environment. This includes understanding how soundscapes can welcome or deter individuals, guiding design choices to create spaces that are more accessible and inviting.

Legibility: The study enriches our grasp of urban legibility through sound landmarks. These auditory cues, akin to visual markers, assist individuals in navigating and feeling secure within a space. The strategic integration of sound landmarks into urban design is illuminated, enhancing navigability and spatial comprehension. Also, in the public spaces which are busier than others such as city theatre square, node can be sonically identified. Sound nodes in public spaces refer to specific points or areas within an urban environment where sound plays a significant role in shaping the experience and perception of the space. These nodes can be thought of as auditory landmarks that contribute to the legibility of a space—helping people to navigate or orient themselves within the urban fabric through the sense of hearing.

The rhythm, tempo, and continuity of urban sounds can influence the flow and movement within cities. This research outcome is confirming the works of Michael Bull in "Sounding Out the City" (2000), sound can play a pivotal role in enhancing or hindering urban connectivity within the case of Tehran. This highlights the importance of designing sonic corridors and pathways to enhance urban fluidity.

Land use and diverse of activities: The research underscores how land use and activity diversity influence urban soundscapes, as evidenced by the distinct auditory environments of City Theatre, Boulevard Keshavarz, and Yousef Abad. The study corroborates Watson's (2009) observations on the distinct urban layouts of the Global South and their impact on soundscapes, showing how Tehran exhibits unique soundscape qualities across different sites due to varying land use and activities.

Richness: This research contribution elucidates the concept of richness in urban soundscapes, underscoring the pivotal role that a varied and dynamic auditory environment plays in enriching the sensory depth of urban spaces. The auditory complexity and layered nature of urban soundscapes emerge as critical dimensions that parallel, and significantly enhance, the visual and tangible aspects of urban design. This auditory richness not only augments the aesthetic and sensory allure of public spaces but also fosters prolonged engagement and deeper interaction within these environments.

The investigation reveals a direct correlation between the richness of soundscapes in Tehran and users' perceptions. A broad spectrum of sonic expressions, ranging from the soothing background hum of the city to the jarring noise of traffic, illustrates the diverse ways sounds are perceived and valued. This diversity reflects a wide array of user reactions, underlining the subjective experience of sound in urban contexts. For instance, natural sounds were universally appreciated for their pleasantness, particularly in Keshavarz Boulevard, whereas human-generated sounds elicited mixed responses depending on their context and the associated meanings. This distinction was stark in the case of City Theatre Square, where certain sounds were perceived as threatening, highlighting the significance of the context over the mere volume of sound.

Moreover, the study delves into the intricate relationship between sound and social dynamics, exemplified by the azan—the Muslim call to prayer. This sound, emblematic of Tehran's auditory landscape, illustrates the complex interplay between sound, cultural identity, and urban life. The azan, with its gendered and religious connotations, stands as a potent symbol of community and faith, transcending the public-private divide and weaving into the everyday rhythms of the city.

Active Listening: By advocating for active listening, this research suggests that fostering a more pleasant soundscape can enhance the sensory fabric of urban environments. Training individuals to become more attuned to their sonic surroundings is likened to the way certain smells can evoke specific reactions or behaviours. The research posits that sensory engagement, particularly through sound, is intensified when individuals are stationary, presenting opportunities to embed auditory experiences and active listening into a broader array of social and recreational activities. This approach not only enriches the sensory palette of urban design but also strengthens the theoretical foundations of how we understand, experience, and construct public spaces.

Empirical

This research offers significant empirical insights, and more depth of knowledge and understanding of the role of sound in shaping urban spaces and their experience, through its focus on District 6 in Tehran, a locale noted for its rich history and vibrant cultural tapestry. The selection of three distinct locations within this neighbourhood not only facilitated the archival of sound recordings for future exploration but also provided a wealth of information about an area initially challenging to navigate at the outset of my study. Engaging with this community and conducting interviews with its diverse inhabitants have yielded fresh perspectives on how spatial characteristics, soundscape, usage, and user behaviour interconnect.

Central to the design of urban spaces is the principle of inclusivity, legibility, identity, comfort, and diversity which necessitates considering the full spectrum of cognitive, physical, and sensory experiences. Such an approach ensures that all community members can contribute to and shape the urban environment, transforming the city into a mosaic of personal relevance and shared identity for everyone involved.

This investigation uncovers the spatial dynamics, relationships, and unique auditory attributes that characterise urban environments considering factors such as architectural design, human activity, user perception, spatial configurations, environmental conditions, and the natural surroundings. Through detailed graphical and acoustic analyses, this study aims to inform and support decision-making and policy development processes. It emphasizes that the perception of spaces as positive, negative, or neutral is influenced not solely by the presence of specific elements but, more importantly, by the dynamics of their interaction.

6.4 The Limitations and Future Research

This focus has underscored the need for more specialised studies that can elucidate the connections between urban design, sensory perception, and place-making processes. Crafting a theoretical framework that intertwines these complex concepts presents a considerable challenge; however, embarking on this inquiry represents a crucial first step towards integrating sensory experiences into urban design more holistically.

Time constraints and a foundation of limited pre-existing knowledge posed significant challenges throughout this study. Future investigations will benefit from this initial research endeavour, serving as a foundation and inspiration for deeper exploration into the integration of sensorial perceptions within the realm of urban design and planning. Moreover, conducting research in non-Western contexts, such as cities in the Middle East, introduces unique challenges not encountered in Western settings like the UK. The distinct cultural, social, and environmental conditions of these locales necessitate adaptable research methodologies and perspectives.

In conducting a detailed exploration of Tehran's soundscape, this research has revealed the richness and complexity of auditory experiences in urban spaces. However, it also highlighted the limitations of existing vocabulary in adequately capturing the nuanced qualities and components of these sounds. While terms like 'noise,' 'harmony,' 'rhythm,' and 'soundscape' provide a basic framework, they fall short in describing the cultural, emotional, and spatial dimensions of sound that are deeply embedded in Tehran's urban fabric.

Looking ahead, two critical avenues for future research emerge. The first involves exploring how multisensory experiences can be more effectively understood and incorporated into urban studies. This requires a broader consideration of how sounds, smells, textures, and tastes, alongside visual elements, contribute to our perception and quality of urban spaces. In particular, to convey the distinct characteristics of Tehran's soundscape more effectively, it is essential to expand the vocabulary used in urban sound studies. This thesis advocates for the adoption of a more culturally sensitive lexicon that integrates local terms and concepts, reflecting the specific acoustic environments of non-Western cities. For example, terms that describe the call to prayer ('Azan') not merely as a sound but as a temporal marker and spatial anchor could enhance descriptive accuracy. Additionally, concepts such as 'sonic identity,' which encapsulates the unique auditory signatures of different neighborhoods, or 'acoustic resilience,' which describes how sound environments adapt to social and environmental changes, could be valuable additions to the vocabulary.

Furthermore, drawing from sensory ethnography, incorporating terms that evoke the multi-sensory interactions within a soundscape—such as 'auditory texture' to describe the layered and tactile quality of sounds, or 'sonic layering' to capture the interweaving of different sound sources over time—could provide more depth and precision in describing urban soundscapes. These terms not only better articulate the qualities of the sounds themselves but also their impact on the overall experience of urban spaces. As urban environments continue to evolve, the development of a more comprehensive and descriptive vocabulary will be crucial for both researchers and practitioners aiming to design and analyse public spaces that are attuned to the full range of sensory experiences of their inhabitants, particularly in diverse cultural contexts like Tehran.

The second is to Design in Multisensorial Ways: For practitioners, this research underscores the importance of adopting design strategies that account for the full spectrum of human sensory experiences. By doing so, urban spaces can become more inclusive, engaging, and reflective of diverse human needs and preferences.

In conclusion, while this research has navigated through several challenges, it paves the way for future explorations that could profoundly enrich our understanding and development of urban environments. It calls on both academics and practitioners to

consider the multisensory dimensions of place-making, advocating for a more inclusive and comprehensive approach to designing the cities of the future.

The end

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